[Beyond Nuclear 2 Parent]

From: jim yarbrough [jyarbro2003@yahoo.com]
Sent: Thursday, September 22, 2016 8:48 PM
To: Consent Based Siting
Subject: Nuclear waste

Stop making it(nuclear waste). The only truly safe, sound, just solution for the radioactive waste problem, is to not make it in the first place. Electricity can be supplied by clean, safe, affordable renewable sources, such as wind and solar, and demand decreased significantly by efficiency, rather than generating radioactive waste via dirty, dangerous, and expensive nuclear power.

Expedite the transfer of irradiated nuclear fuel from densely-packed "wet" storage pools into Hardened On-Site Storage (HOSS) dry casks.

Store irradiated nuclear fuel in HOSS dry casks, as safely and securely as possible, as close to the point of generation as possible, in a monitored, inspectable, retrievable manner.

Given the unavoidable risks of high-level radioactive waste truck, train, and/or barge shipments on roads, rails, and/or waterways (Mobile Chernobyls, Dirty Bombs on Wheels, Floating Fukushimas), transport irradiated nuclear fuel only once, such as straight to a (suitable, acceptable, just) geological repository, not to so-called centralized interim storage (de facto permanent parking lot dumps, such as those currently targeted at Waste Control Specialists, LLC in Andrews County, west Texas; at Eddy-Lea Counties, near the Waste Isolation Pilot Plant in southeast New Mexico; Native American reservations; nuclear power plants, such as Exelon's Dresden in Morris, IL; etc.).

Geological repositories must be scientifically suitable (capable of isolating the hazardous high-level radioactive waste from the living environment forevermore), socially acceptable (genuinely consent-based), and environmentally just. Note that no such suitable/acceptable/just geologic repository has yet been found, in more than half a century of looking. DOE has admitted it can't open any repository (even an unsuitable/unacceptable/unjust one) till 2048 at the earliest, more than a century after Enrico Fermi, in 1942, generated the first high-level radioactive waste, in the world's first reactor, as part of the Manhattan Project to build atomic bombs; and more than 90 years years after the first "civilian" atomic reactor began generating waste at Shippingport, PA.

Do not reprocess (extract fissile plutonium and/or uranium from) irradiated nuclear fuel. Not only would this risk nuclear weapons proliferation, and be astronomically expensive; it would also very likely cause environmental ruin downwind and downstream of wherever it is carried out, as has been shown at such places as Hanford Nuclear Reservation in Washington; Savannah River Site, South Carolina; West Valley, New York; Sellafield, England; La Hague, France; Kyshtym, Russia; etc.

Preserve and maintain "wet" storage pools – albeit emptied of irradiated nuclear fuel -- as an emergency back up location for cask-to-cask HOSS transfers, when old HOSS casks deteriorate toward failure, and need to be replaced with brand new HOSS casks. That is, do not dismantle pools as part of nuclear power plant decommissioning post-reactor shutdown.

Carefully pass information about storing irradiated nuclear fuel as safely as possible, as close to the point of generation as possible, from one generation to the next, à la the concept of "Rolling Stewardship" described by the Canadian Coalition for Nuclear Responsibility.

Address the shortfall in funding for forevermore storage of high-level radioactive waste. Dr. Mark Cooper of Vermont Law School has estimated the first 200 years of commercial irradiated nuclear fuel storage (assuming just a single repository, although at least two will be required!) will cost $210 to $350 billion, even though there is only some tens of billions of dollars remaining in the now-terminated Nuclear Waste Fund, collected from nuclear power ratepayers.

Environmental justice, in keeping with Bill Clinton's 1994 Executive Order 12898, demands that Native American communities and lands, as well as those of other low income and/or people of color communities, never again be targeted for high-level radioactive waste parking lot dumps or permanent burial sites, a shameful form of radioactive racism dating back decades in the U.S.

Thank you. Jim Yarbrough South Pasadena, CA 91030

[BRC Parent]

From: Leslie Dee [leslie1@mediacombb.net]
Sent: Thursday, September 15, 2016 8:58 PM
To: Consent Based Siting
Subject: Consent-based siting public comment

I support the Blue Ribbon Commission on America's Nuclear Future's recommendation to implement an explicitly adaptive, staged and consent-based approach to nuclear waste disposal. And I welcome the opportunity provided by the U.S. Department of Energy to submit comments on the agency's nascent effort to design a consent-based siting process.

Achieving consent-based siting, if done right, could lay the foundation for a fair and just process for siting a nuclear waste management facility that will well position the federal government – after decades of failure – to meet its nuclear waste management commitments and begin to restore the loss of trust and confidence in its ability to find a viable and permanent solution to our waste crisis.

I support and urge the DOE to apply the following 10 Criteria for Community Consent:

1) Informed - Communities must know what they are consenting to at each stage of the process. Early and often public engagement activities should offer the public, community leaders, experts and agency representatives frequent opportunities to exchange information. Information must be accessible and offered through a variety of platforms. The full range of cost and risks associated with the project must be disclosed and verified, as well as alternatives being considered. Achieving informed consent is not an end, but an ongoing exercise that responds to new information and findings as well as new generations.

2) Inclusive - Consent should be granted by those most impacted, including states, tribes and communities. A broad range of state, tribal and local stakeholders should be included in the decision-making process, and efforts must be made to increase the number of community members who recognize themselves and their communities as stakeholders in the siting process. People and entities that would financially benefit from the siting process should be clearly disclosed.

3) Collaborative - Consent can't be achieved through a top-down process. Activities related to outreach, engagement and education must be planned in coordination with appropriate stakeholders. Any agreements or decision-making must result from mutual input and understanding, and must be responsive to the concerns of citizens.

4) Just - Consent should not be bought. Financial compensation and other incentives must be reasonable, not used as coercion, and negotiated with full public disclosure.

5) Transparent - Consent must be pursued through an open process. Consent can be achieved and maintained through trust. Open access to information includes disclosure of funding and any conflicts of interest with the sources of information. All meetings, hearings and communications must be open to the public and on record.

6) Legitimate - A consent-based siting process must not just be the policy of the Department of Energy, but the law of the land.

7) Balanced- Consent will require sharing of power among federal executive and legislative branches, and state and local governments and communities. Negotiating and decision-making power must be shared among affected federal, state and local entities, including those in the transportation sector. States also should be granted some authority over regulation of the facility.

8) Flexible - Consent can be withdrawn. The consent-based siting process must provide ample opportunity and defined moments to correct course or completely withdrawal from the siting process.

9) Contractual - States, tribes and communities must have clear recourse if the terms of consent are breached.

10) Tailored – The consent process must be responsive to each situation. While these common elements should be applied to any consent-based process, any approach must be tailored to the specific, unique needs of the particular state, tribe and communities where a waste dump is being considered.

Thank you for your consideration.

Sincerely,

Leslie Dee

55378

October 18, 2016

Mr. John Kotek
Acting Assistant Secretary for the Office of Nuclear Energy
U. S. Department of Energy (DOE)
1000 Independence Ave, SW, Washington DC 20585

Re: Comments on Summary of Public Input Draft Report
Consent-Based Siting

Dear Mr. Kotek:

After reviewing the Draft Report, I am submitting the following comments. As noted on pp. 6-7, "the purpose of this draft report is to summarize the major themes that emerged from the regional public meetings, from other interactions with stakeholders at meetings and conferences, and from responses to the Invitation for Public Comment. The draft report also attempts to reflect the breadth and diversity of views expressed and topics identified to date by meeting participants and commenters...the report offers an overview of what DOE heard and includes a selection of direct quotations, from written comments and meeting transcripts, that are intended to reflect the different perspectives and often strongly held views of a large and diverse group of participants."(DOE 2016) The draft report is a reasonably thorough and meaningful attempt to achieve these goals.

As you know, I attended the April 26, 2016 meeting in Sacramento where I hand-delivered a letter to you and sent an electronic version to your staff on two subsequent occasions. It is gratifying to know that it is now part of the public record in the consent-based siting endeavor. The purpose of the letter was to identify sub-seabed disposal as a viable option for high-level radioactive wastes such as containers with spent fuel rods from nuclear power plants. Section 4.10 of the Draft Report (Additional Topics) on pg. 71 notes "promoting deep-sea disposal for nuclear waste;" I assume this is a typo or miswording because this is not what I am advocating; sub-seabed disposal is <u>not</u> dumping nuclear waste into the sea. The language in the Final Report should be corrected accordingly. The paragraph regarding sub-seabed disposal of the SNF (spent nuclear fuel) at the Humboldt Bay Power Plant ISFSI (Independent Spent Fuel Storage Installation) is an accurate representation of a part of the April 26, 2016 letter.

As noted in Section 2.10 (Transportation), DOE received many comments on the topic of transportation. Concerns were raised about the amount of transportation of nuclear waste related to one or more interim storage facilities, and then to a permanent disposal site, as well as the transport of high-level waste to a defense only geologic depository. Transportation issues regarding safety concerns in connection with nuclear waste shipments are directly related to siting decisions. There is disagreement about applying

the concept of consent-based siting to communities along transportation routes. A comment noted "the Blue Ribbon Commission on America's future advocated for consent-based siting but not consent-based transportation." (Pg. 36) Some commenters are opposed to nuclear waste transportation due to "the potential for accidents and derailments, terrorist attacks, infrastructure failures, incidental exposure, loss of property values, and liabilities." (Pg. 37).

One of the potential benefits of sub-seabed disposal of the SNF at the Humboldt Bay ISFSI is very limited transportation on land would be required. Given its location adjacent to Humboldt Bay, the dry casks containing the spent fuel rods could be transported by truck/trailer to a ship moored next to the site and transported to a drilling ship off the Pacific Coast, and ultimately placed in holes hundreds of meters beneath the seabed in an appropriate location (Bala 2014). Another option is transferring the fuel rods from the dry cask to another container which could then be transported in a similar fashion for disposal at an appropriate site. The potential for accidents and other concerns noted above would be diminished. The nuclear waste would only be moved once to a final destination and could be monitored.

As noted in Attachment A of the April 26, 2016 letter mentioned above, "By the nature of its remote location and depth in thousands of meters of water and tens of meters of seabed, humans and sea life are protected from the waste repository...an acoustic array can be installed around the perimeter of the disposal area and cabled back to a shore station on the proximate island...satellite detection capability could also monitor the site for intruders. Should an attempt to access the site be detected, national authorities would be alerted to intervene. Their authority would be enforcement of activity within the US EEZ (Exclusive Economic Zone)." (McAllister 2013)

Another benefit of sub-seabed disposal is very few communities and transportation routes would be impacted and it would not be put in anybody's "backyard". Additionally, sub-seabed disposal would not contaminate the marine environment, which is the common heritage of humankind according to several treaties and laws. The circumstances involving the removal of spent fuel at Humboldt Bay would also apply to waste removal, when appropriate, from San Onofre Nuclear Stations 1, 2, and 3 and Diablo Canyon Units 1 and 2. This would also apply to nuclear facilities located in other coastal areas.

Section 4.1 (Views On The Role of Nuclear Energy) summarizes views on the role of nuclear energy. Commenters support or are opposed to continued use of nuclear power as an energy alternative for the future. One commenter opined "Nuclear power is too dangerous and expensive...electricity can be supplied by clean, safe affordable renewable sources...and demand decreased significantly by efficiency, rather than generating radioactive waste via dirty, dangerous, and expensive nuclear power." Another commenter noted "Nuclear power is obviously a power source we need to emphasize and expand if we are to curb the menace of global warming." [Pg. 56]

The argument that nuclear power is needed to combat global warming is not persuasive. A recent article noted that "every nuclear generating station spews about two-thirds of the energy it burns inside its reactor core into the environment. Only one-third is converted into electricity. Another tenth of that is lost in transmission. Every day, large reactors like the two at Diablo Canyon, California, individually dump about 1.25 billion gallons of water into the ocean at temperatures 20 degrees Fahrenheit warmer than the natural environment. Diablo's "once-through cooling system" takes water out of the ocean and dumps it back superheated, irradiated and laden with toxic chemicals. All nuclear reactors emit Carbon 14, a radioactive isotope, invalidating the industry's claim that reactors are "carbon free". And the fuel that reactors burn is carbon-intensive. The mining, milling and enrichment processes needed to produce the pellets that fill the fuel rods inside the reactor cores all involve major energy expenditures, nearly all of it based on coal, oil, or gas. And of course there's the problem of nuclear waste. There's the "low-level" waste involving enormous quantities of troublesome irradiated fuels and solid trash that must be dealt with outside the standard civilian waste stream. And that handling involves fossil fuels burned in the process of transportation, management, and disposal as well. As for the high-level waste, this remains one of humankind's most persistent and dangerous problems. Overall, the idea that atomic power is "clean" or "carbon free" or "emission free" is a very expensive misconception." (Wasserman 2016)

As noted in my June 13, 2016 comments on DOE's Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Waste (Strategy), the best solution to nuclear waste management is to stop generating in the first place. Commercial nuclear plants provide less than 20 percent of the nation's electricity and could be partially replaced by natural gas-fired plants. More importantly, increases in energy efficiency and renewable energy resources are more plentiful and cost effective.

In an historic announcement on Tuesday June 22, 2016, PG&E said it will close the last nuclear plant in California, Diablo Canyon, by 2025 and replace it with energy efficiency measures and renewable energy resources that would not pump greenhouse gases (GHG) into the atmosphere. PG&E's CEO Tony Early told San Francisco Chronicle (Chronicle) staff that as the company looked into California's energy needs for the coming decades for the coming decades, it didn't see a place for Diablo Canyon. The tremendous increase in the use of energy efficiency measures and renewable energy, primarily solar and wind, has inundated the electricity grid in California. These resources have higher priority than electricity generated by nuclear reactors or fossil fuel plants. In particular, increases in energy efficiency will reduce the amount of electricity PG&E would need to generate.

Mr. Earley told Chronicle staff, "Our analysis continues to show that instead of continuing to run all the time, there will parts of the year where Diablo will not be needed...at a plant like Diablo, with large fixed costs, if you effectively only run the plant half the time, you've doubled the cost." (PG&E 2016)

It is inevitable that other utilities will make the same decision and DOE should recognize that nuclear-generated electricity in this country will decrease over time. Should nuclear

power research and development (R&D) continue, and an argument for and against additional R&D would be interesting, it must be considered as an experimental science endeavor, not as an advancement for commercial electrical generation. "The aging U.S. fleet (of nuclear reactors) now involves about 100 reactors, down from a maximum of about 130, and 900 fewer than the 1,000 Richard Nixon predicted in 1974. Many of them, like Gina (New York) are well over forty years old. Many are known to be leaking various radioactive substances, most commonly tritium, as at Indian Point (New York)." (Wasserman 2016)

As reported in an article in the National Geographic, "Germany is pioneering an epochal transformation it calls *energiewende*—an energy revolution that scientists say all nations must one day complete if a climate disaster is to be averted. Among large industrial nations, Germany is a leader. Last year (2014), 27 percent of its electricity came from renewable sources such as wind and solar, three times what it got a decade ago and more than twice what the United States gets today (2015). The change accelerated after the 2011 meltdown at Japan's Fukushima nuclear power plant, which led Chancellor Angela Merkel to declare that Germany would shut all 17 of its own reactors by 2022. Nine have been switched so far. Germany, the world's fourth largest economy, has promised some of the most aggressive emission cuts—by 2020, a 40 percent cut from 1990 levels, and by 2050, at least 80 percent...But (unfortunately) conventional utilities...are pressuring Merkel's government to slow things down. While most countries have been "free riders" (Because climate change is a global problem, and doing something is costly, every country has an incentive to do nothing and hope that others will act), Germany has behaved differently: It has ridden out ahead. And in so doing, it has made the journey easier for the rest of us." (National Geographic 2015) A more recent article notes that Germany wants to ban fossil-fuel powered cars by eliminating the internal combustion engine by 2030. (TakePart 2016) The United States needs a similar transformation and DOE should be an important participant in this process.

As noted in Section 4.9 (Views On Federal Funding For Nuclear Waste Management), "Several Commenters expressed concern about the adequacy of federal funding for nuclear waste management and disposal and about the federal government's rapidly growing exposure to financial liabilities for failing to meet existing waste management commitments on time."[Pg. 70] I concur because by law (Nuclear Waste Policy of 1982), DOE must take title and responsibility for the nuclear waste under discussion in a timely manner.

Sub-seabed disposal should be one of the siting criteria considerations including geologic and other hazard identification, environmental factors and considerations, socioeconomic factors, and transportation requirements identified in Section 5.3 (Supporting Engagement Through Outreach, Information, And Funding). This should be part of the Final Report anticipated for release in December 2016. DOE's FY 2017 Budget Request should be modified to include funding to resume research similar to what took place with the Seabed Working Group in the 1970s-80s. The group

concluded its work with a call for further research after preliminary testing from 1976 to 1986 at about six sites in the Atlantic and Pacific oceans showed promise for sub-seabed burial of SNF in ocean floor sediment. The Seabed Working Group should be reassembled (with international participation as previously structured) and Budget Requests for FY 2018 and beyond should provide ample funding for sub-seabed disposal research and development.

It is my understanding that DOE will continue to welcome input and create opportunities to listen and learn from the public and stakeholders on the best ways to design and implement a durable consent-based siting process.

Sincerely,

James Adams

References

Bala 2014 – *Sub-Seabed Burial of Nuclear Waste: If the Disposal Method Could Succeed Technically, Could It Also Succeed Legally?* - Amal Bala, Boston College Environmental Affairs Law Review, Volume 41 – Issue 2, April 11, 2014.

McAllister 2013 – *Sub-Seabed Repository for Nuclear Waste – a Strategic Alternative – 13102*, Keith R. McAllister, WM Conference, February 24 – 28, 2013, Phoenix Arizona, USA.

National Geographic 2016 – *The Will to Change* – The Climate Issue, November 2015 * VOL 228 * NO. 5.

PG & E 2016 – Statement Regarding Closing Diablo Canyon, Pacific Gas & Electric, June 22, 2016.

DOE 2016 – *Consent-Based Siting, Designing a Consent-Based Siting Process, Summary of Public Input*, Draft Report, US Department of Energy, September 15, 2016.

TakePart 2016 – *Germany Wants to Ban Fossil-Fuel-Powered Cars*, Huffington Post, October 11, 2016.

Wasserman 2016 – *How Nuclear Power Causes Global Warming*, Harvey Wasserman, The Progressive, September 21, 2016.

From: James Adams [jsadams4910@yahoo.com]
Sent: Tuesday, October 25, 2016 11:39 AM
To: Consent Based Siting
Subject: Public Comment on Draft Report
Attachments: Comments on Public Input Draft report - Copy.docx

To Whom It May Concern:

I have attached an electronic version of a signed original of Comments on Summary of Public Input Draft Report Consent-Based Siting that was mailed on October 18, 2016. Please ensure that both are included in the public record in this matter.

Sincerely,
James Adams

October 18, 2016

Mr. John Kotek
Acting Assistant Secretary for the Office of Nuclear Energy
U. S. Department of Energy (DOE)
1000 Independence Ave, SW, Washington DC 20585

Re: Comments on Summary of Public Input Draft Report
Consent-Based Siting

Dear Mr. Kotek:

After reviewing the Draft Report, I am submitting the following comments. As noted on pp. 6-7, "the purpose of this draft report is to summarize the major themes that emerged from the regional public meetings, from other interactions with stakeholders at meetings and conferences, and from responses to the Invitation for Public Comment. The draft report also attempts to reflect the breadth and diversity of views expressed and topics identified to date by meeting participants and commenters…the report offers an overview of what DOE heard and includes a selection of direct quotations, from written comments and meeting transcripts, that are intended to reflect the different perspectives and often strongly held views of a large and diverse group of participants."(DOE 2016) The draft report is a reasonably thorough and meaningful attempt to achieve these goals.

As you know, I attended the April 26, 2016 meeting in Sacramento where I hand-delivered a letter to you and sent an electronic version to your staff on two subsequent occasions. It is gratifying to know that it is now part of the public record in the consent-based siting endeavor. The purpose of the letter was to identify sub-seabed disposal as a viable option for high-level radioactive wastes such as containers with spent fuel rods from nuclear power plants. Section 4.10 of the Draft Report (Additional Topics) on pg. 71 notes "promoting deep-sea disposal for nuclear waste;" I assume this is a typo or miswording because this is not what I am advocating; sub-seabed disposal is <u>not</u> dumping nuclear waste into the sea. The language in the Final Report should be corrected accordingly. The paragraph regarding sub-seabed disposal of the SNF (spent nuclear fuel) at the Humboldt Bay Power Plant ISFSI (Independent Spent Fuel Storage Installation) is an accurate representation of a part of the April 26, 2016 letter.

As noted in Section 2.10 (Transportation), DOE received many comments on the topic of transportation. Concerns were raised about the amount of transportation of nuclear waste related to one or more interim storage facilities, and then to a permanent disposal site, as well as the transport of high-level waste to a defense only geologic depository. Transportation issues regarding safety concerns in connection with nuclear waste shipments are directly related to siting decisions. There is disagreement about applying

the concept of consent-based siting to communities along transportation routes. A comment noted “the Blue Ribbon Commission on America’s future advocated for consent-based siting but not consent-based transportation.” (Pg. 36) Some commenters are opposed to nuclear waste transportation due to “the potential for accidents and derailments, terrorist attacks, infrastructure failures, incidental exposure, loss of property values, and liabilities.” (Pg. 37).

One of the potential benefits of sub-seabed disposal of the SNF at the Humboldt Bay ISFSI is very limited transportation on land would be required. Given its location adjacent to Humboldt Bay, the dry casks containing the spent fuel rods could be transported by truck/trailer to a ship moored next to the site and transported to a drilling ship off the Pacific Coast, and ultimately placed in holes hundreds of meters beneath the seabed in an appropriate location (Bala 2014). Another option is transferring the fuel rods from the dry cask to another container which could then be transported in a similar fashion for disposal at an appropriate site. The potential for accidents and other concerns noted above would be diminished. The nuclear waste would only be moved once to a final destination and could be monitored.

As noted in Attachment A of the April 26, 2016 letter mentioned above, “By the nature of its remote location and depth in thousands of meters of water and tens of meters of seabed, humans and sea life are protected from the waste repository…an acoustic array can be installed around the perimeter of the disposal area and cabled back to a shore station on the proximate island…satellite detection capability could also monitor the site for intruders. Should an attempt to access the site be detected, national authorities would be alerted to intervene. Their authority would be enforcement of activity within the US EEZ (Exclusive Economic Zone).” (McAllister 2013)

Another benefit of sub-seabed disposal is very few communities and transportation routes would be impacted and it would not be put in anybody’s “backyard”. Additionally, sub-seabed disposal would not contaminate the marine environment, which is the common heritage of humankind according to several treaties and laws. The circumstances involving the removal of spent fuel at Humboldt Bay would also apply to waste removal, when appropriate, from San Onofre Nuclear Stations 1, 2, and 3 and Diablo Canyon Units 1 and 2. This would also apply to nuclear facilities located in other coastal areas.

Section 4.1 (Views On The Role of Nuclear Energy) summarizes views on the role of nuclear energy. Commenters support or are opposed to continued use of nuclear power as an energy alternative for the future. One commenter opined “Nuclear power is too dangerous and expensive…electricity can be supplied by clean, safe affordable renewable sources…and demand decreased significantly by efficiency, rather than generating radioactive waste via dirty, dangerous, and expensive nuclear power.” Another commenter noted “Nuclear power is obviously a power source we need to emphasize and expand if we are to curb the menace of global warming.” [Pg. 56]

The argument that nuclear power is needed to combat global warming is not persuasive. A recent article noted that “every nuclear generating station spews about two-thirds of the energy it burns inside its reactor core into the environment. Only one-third is converted into electricity. Another tenth of that is lost in transmission. Every day, large reactors like the two at Diablo Canyon, California, individually dump about 1.25 billion gallons of water into the ocean at temperatures 20 degrees Fahrenheit warmer than the natural environment. Diablo’s “once-through cooling system” takes water out of the ocean and dumps it back superheated, irradiated and laden with toxic chemicals. All nuclear reactors emit Carbon 14, a radioactive isotope, invalidating the industry’s claim that reactors are “carbon free”. And the fuel that reactors burn is carbon-intensive. The mining, milling and enrichment processes needed to produce the pellets that fill the fuel rods inside the reactor cores all involve major energy expenditures, nearly all of it based on coal, oil, or gas. And of course there’s the problem of nuclear waste. There’s the ”low-level” waste involving enormous quantities of troublesome irradiated fuels and solid trash that must be dealt with outside the standard civilian waste stream. And that handling involves fossil fuels burned in the process of transportation, management, and disposal as well. As for the high-level waste, this remains one of humankind’s most persistent and dangerous problems. Overall, the idea that atomic power is “clean” or “carbon free” or “emission free” is a very expensive misconception.” (Wasserman 2016)

As noted in my June 13, 2016 comments on DOE’s Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Waste (Strategy), the best solution to nuclear waste management is to stop generating in the first place. Commercial nuclear plants provide less than 20 percent of the nation’s electricity and could be partially replaced by natural gas-fired plants. More importantly, increases in energy efficiency and renewable energy resources are more plentiful and cost effective.

In an historic announcement on Tuesday June 22, 2016, PG&E said it will close the last nuclear plant in California, Diablo Canyon, by 2025 and replace it with energy efficiency measures and renewable energy resources that would not pump greenhouse gases (GHG) into the atmosphere. PG&E’s CEO Tony Early told San Francisco Chronicle (Chronicle) staff that as the company looked into California’s energy needs for the coming decades for the coming decades, it didn’t see a place for Diablo Canyon. The tremendous increase in the use of energy efficiency measures and renewable energy, primarily solar and wind, has inundated the electricity grid in California. These resources have higher priority than electricity generated by nuclear reactors or fossil fuel plants. In particular, increases in energy efficiency will reduce the amount of electricity PG&E would need to generate.

Mr. Earley told Chronicle staff, “Our analysis continues to show that instead of continuing to run all the time, there will parts of the year where Diablo will not be needed…at a plant like Diablo, with large fixed costs, if you effectively only run the plant half the time, you’ve doubled the cost.” (PG&E 2016)

It is inevitable that other utilities will make the same decision and DOE should recognize that nuclear-generated electricity in this country will decrease over time. Should nuclear

power research and development (R&D) continue, and an argument for and against additional R&D would be interesting, it must be considered as an experimental science endeavor, not as an advancement for commercial electrical generation. “The aging U.S. fleet (of nuclear reactors) now involves about 100 reactors, down from a maximum of about 130, and 900 fewer than the 1,000 Richard Nixon predicted in 1974. Many of them, like Gina (New York) are well over forty years old. Many are known to be leaking various radioactive substances, most commonly tritium, as at Indian Point (New York).” (Wasserman 2016)

As reported in an article in the National Geographic, “Germany is pioneering an epochal transformation it calls *energiewende*—an energy revolution that scientists say all nations must one day complete if a climate disaster is to be averted. Among large industrial nations, Germany is a leader. Last year (2014), 27 percent of its electricity came from renewable sources such as wind and solar, three times what it got a decade ago and more than twice what the United States gets today (2015). The change accelerated after the 2011 meltdown at Japan’s Fukushima nuclear power plant, which led Chancellor Angela Merkel to declare that Germany would shut all 17 of its own reactors by 2022. Nine have been switched so far. Germany, the world’s fourth largest economy, has promised some of the most aggressive emission cuts—by 2020, a 40 percent cut from 1990 levels, and by 2050, at least 80 percent…But (unfortunately) conventional utilities…are pressuring Merkel’s government to slow things down. While most countries have been “free riders” (Because climate change is a global problem, and doing something is costly, every country has an incentive to do nothing and hope that others will act), Germany has behaved differently: It has ridden out ahead. And in so doing, it has made the journey easier for the rest of us.” (National Geographic 2015) A more recent article notes that Germany wants to ban fossil-fuel powered cars by eliminating the internal combustion engine by 2030. (TakePart 2016) The United States needs a similar transformation and DOE should be an important participant in this process.

As noted in Section 4.9 (Views On Federal Funding For Nuclear Waste Management), “Several Commenters expressed concern about the adequacy of federal funding for nuclear waste management and disposal and about the federal government’s rapidly growing exposure to financial liabilities for failing to meet existing waste management commitments on time.”[Pg. 70] I concur because by law (Nuclear Waste Policy of 1982), DOE must take title and responsibility for the nuclear waste under discussion in a timely manner.

Sub-seabed disposal should be one of the siting criteria considerations including geologic and other hazard identification, environmental factors and considerations, socioeconomic factors, and transportation requirements identified in Section 5.3 (Supporting Engagement Through Outreach, Information, And Funding). This should be part of the Final Report anticipated for release in December 2016. DOE’s FY 2017 Budget Request should be modified to include funding to resume research similar to what took place with the Seabed Working Group in the 1970s-80s. The group

concluded its work with a call for further research after preliminary testing from 1976 to 1986 at about six sites in the Atlantic and Pacific oceans showed promise for sub-seabed burial of SNF in ocean floor sediment. The Seabed Working Group should be reassembled (with international participation as previously structured) and Budget Requests for FY 2018 and beyond should provide ample funding for sub-seabed disposal research and development.

It is my understanding that DOE will continue to welcome input and create opportunities to listen and learn from the public and stakeholders on the best ways to design and implement a durable consent-based siting process.

Sincerely,

James Adams

References

Bala 2014 – *Sub-Seabed Burial of Nuclear Waste: If the Disposal Method Could Succeed Technically, Could It Also Succeed Legally?* - Amal Bala, Boston College Environmental Affairs Law Review, Volume 41 – Issue 2, April 11, 2014.

McAllister 2013 – *Sub-Seabed Repository for Nuclear Waste – a Strategic Alternative – 13102*, Keith R. McAllister, WM Conference, February 24 – 28, 2013, Phoenix Arizona, USA.

National Geographic 2016 – *The Will to Change* – The Climate Issue, November 2015 * VOL 228 * NO. 5.

PG & E 2016 – Statement Regarding Closing Diablo Canyon, Pacific Gas & Electric, June 22, 2016.

DOE 2016 – *Consent-Based Siting, Designing a Consent-Based Siting Process, Summary of Public Input*, Draft Report, US Department of Energy, September 15, 2016.

TakePart 2016 – *Germany Wants to Ban Fossil-Fuel-Powered Cars*, Huffington Post, October 11, 2016.

Wasserman 2016 – *How Nuclear Power Causes Global Warming*, Harvey Wasserman, The Progressive, September 21, 2016.

Document Metadata:DOE-HQ-2016-0023-DRAFT-0007

Document Details

Docket ID:	DOE-HQ-2016-0023
Docket Title:	Designing a Consent-Based Siting Process *
Document File:	
Docket Phase:	Notice
Phase Sequence:	1
Original Document ID:	DOE-HQ-2016-0023-DRAFT-0007
Current Document ID:	DOE-HQ-2016-0023-DRAFT-0007
Title:	Comment on FR Doc # 2016-22312
Number of Attachments:	0
Document Type:	PUBLIC SUBMISSIONS *
Document Subtype:	Public Comment
Comment on Document ID:	DOE-HQ-2016-0023-0001
Comment on Document Title:	Designing a Consent-Based Siting Process
Status:	Pending_Post
Received Date:	10/28/2016 *
Date Posted:	
Posting Restriction:	No restrictions
Submission Type:	API
Number of Submissions:	1 *

Document Optional Details

Status Set Date:	10/28/2016
Current Assignee:	Bacon, Cuttie (DOE)
Status Set By:	Public
Comment Start Date:	
Comment Due Date:	
Legacy ID:	
Tracking Number:	1k0-8spo-gsjd
Total Page Count Including Attachments:	1

Submitter Info

Comment:	Draft consent=based siting report. Insure the the DOE process for selecting a site is fair. Communties must know what they are consenting to. Those impacted must have a voice in the process. Financial and other incentives must be reasonable and negotiated with full public disclosure. Transparency is very important as the public has trust issues with the DOE. Communities must share all decisions from the ground up with federal and state governments. With all the risks of transportation and Storage, a criteria for public health and safety must be part of consent=based process. *
First Name:	Dorothy *
Middle Name:	
Last Name:	Anderson *
Mailing Address:	125 River St *
Mailing Address 2:	125 River St *
City:	Weymouth *
Country:	United States
State or Province:	Massachusetts
ZIP/Postal Code:	02191 *
Email Address:	gramdot@hotmail.com
Phone Number:	781-335-1051
Fax Number:	
Organization Name:	
Submitter's Representative:	
Government Agency Type:	
Government Agency:	
Cover Page:	

From: Jaguirrejja@aol.com
Sent: Wednesday, October 26, 2016 3:51 PM
To: Consent Based Siting
Subject: Citizen comment

With a consent -based siting, I expect that no place will want nuclear waste in their area. If there is no place to deposit nuclear waste, it seems to me that we need to stop producing it. Close all nuclear sites and bury the waste that exists right now in your own back yards. I can't believe that an area close to Lake Michigan was even considered for this! It is time to find a way to stop producing any waste especially from nuclear and fossil fuels!

From: Carroll E. Arkema [arkemac@verizon.net]
Sent: Thursday, October 27, 2016 5:09 PM
To: Consent Based Siting
Subject: I do not consent!

Dear DOE Officials,
Just letting you know that I do NOT consent to your latest proposals for nuclear fuel handling.
Specifically, the Blue Ribbon Commission on America's Nuclear Future (which, ironically enough, Energy Secretary Moniz was a commission member of, and several DOE officials in charge of "Consent-Based Siting" were lead staff members of) highly recommended that you, DOE, no longer remain in charge of irradiated nuclear fuel management, or policy setting. This was due to the countless failures, and betrayals of the public's trust, over many years and even decades, perpetrated by DOE. And yet, DOE initiated and conducted the "Consent-Based Siting" proceeding, and appears determined to simply continue on, setting high-level radioactive waste management policies, despite the Blue Ribbon Commission's strong recommendation to the contrary.
These injustices must stop!
Sincerely,
Carroll Arkema

From: JN [jnaugsberg@gmail.com]
Sent: Saturday, October 29, 2016 7:18 PM
To: Consent Based Siting
Subject: Siting of Radioactive Waste

To Whom It May Concern:

I am submitting comments as part of the Department of Energy's Invitation for Public Comment regarding long-term storage and disposal of our nation's spent nuclear fuel and high-level radioactive waste. I appreciate that the DOE solicited input in designing a fair and effect process for deciding where to site these long-term nuclear storage facilities.

I do not consent to any plan for ***interim*** storage of highly irradiated nuclear fuel or high-level radioactive waste. The idea of transporting and storing nuclear materials at a centralized ***interim*** storage facility is unacceptable.

Transport of radioactive waste to and storage in a permanent geological repository might be necessary and sustainable, ***but*** the DOE has not found a suitable or acceptable repository to this date.

Transport of dangerous nuclear waste any distance to an **interim** site is unacceptable given the risks of such shipments by trucks, rail or barge through populated and vulnerable environments. By definition, an interim solution necessitates a repeated transfer of a quantity of nuclear waste presumable to a permanent storage site. Repeated transfer of such materials is an unacceptable risk.

It should also be noted that storage of these dangerous materials cannot be permanently or temporarily foisted on or delivered through vulnerable communities and lands, such as those of Native Americans, people of color, or other low income populations.

The safest current acceptable solution to the radioactive waste storage problem is to transfer nuclear fuel from wet storage pools into hardened on-site storage dry casks. Further, the DOE must address issues of funding for maintenance and emergency needs at the original nuclear sites.

In summary, I do not consent to any short or long-term <u>interim</u> storage for spent nuclear fuel and high-level radioactive waste.

Thank you for your attention to this matter.

Judith Augsberg
1581 Fish Hill Rd,
Randolph, VT 05060
802-728-6495

From: joyavery66@gmail.com
Sent: Friday, October 28, 2016 6:24 AM
To: Consent Based Siting
Subject: Radioactive waste dumps

Sent from my iPhone

I do not agree to having more radioactive waste dumps in the U.S.

Joy Avery
Tulsa,OK

From: kevin blanch [blanchblanch2@gmail.com]
Sent: Wednesday, October 26, 2016 2:56 PM
To: Consent Based Siting
Subject: my comments than you

https://youtu.be/lwEy3VhuRvY

From: kevin blanch [blanchblanch2@gmail.com]
Sent: Wednesday, October 26, 2016 3:03 PM
To: Consent Based Siting
Subject: Re: Department of Energy Draft Summary of Public Input Report Available for Comment

thank you I THINK IT WAS A VERY GOOD THING AT LEAST YOU ARE TRYING , even the the public and congress is asleep,, kevin D. blanch

On Wed, Oct 26, 2016 at 3:47 PM, Consent Based Siting <consentbasedsiting@hq.doe.gov> wrote:

> As a reminder, the draft report titled *Designing a Consent-Based Siting Process: Summary of Public Input* is available for public comment through October 30, 2016. The report is located on the Department of Energy consent-based siting website here and the Federal Register Notice is here.
>
> Thank you for your consideration.
>
> *For the latest information on consent-based siting, please visit energy.gov/consentbasedsiting.*
>
> CONSENT-
> BASED
> SITING

From: Toni Vigil [tvigil@westgov.org] on behalf of James Ogsbury [jogsbury@westgov.org]
Sent: Monday, October 31, 2016 3:00 PM
To: Consent Based Siting
Subject: WGA comments on the public input for the consent-based siting process
Attachments: Comments DOE Consent Based Siting FINAL.pdf

Dear Mr. Kotek:

Attached please find a letter from our Chair, Governor Steve Bullock (MT) and Vice Chair, Governor Dennis Daugaard (SD), on behalf of Western Governors, regarding comments on the public input for the consent-based siting process.

If you have any questions or require further information, please do not hesitate to contact me. In the meantime, with warm regards and best wishes, I am

Respectfully,

James D. Ogsbury
Executive Director
Ph: 303-623-9378

WESTERN GOVERNORS' ASSOCIATION

Steve Bullock
Governor of Montana
Chair

Dennis Daugaard
Governor of South Dakota
Vice Chair

James D. Ogsbury
Executive Director

Headquarters

1600 Broadway
Suite 1700
Denver, CO 80202

303-623-9378
Fax 303-534-7309

Washington, D.C.

400 N. Capitol Street, N.W.
Suite 376
Washington, D.C. 20001

202-624-5402
Fax 202-624-7707

www.westgov.org

October 31, 2016

Mr. John Kotek
Acting Assistant Secretary
Office of Nuclear Energy
U.S. Department of Energy
1000 Independence Avenue S.W.
Washington, D.C. 20585

Re: Docket Number DOE-HQ-2016-0023, Designing a Consent-Based Siting Process: Summary of Public Input

Dear Mr. Kotek:

The Western Governors' Association (WGA) appreciates the opportunity to provide comments on the input received by the Department of Energy (DOE) regarding design of a consent-based process to establish an integrated waste management system to transport, store, and dispose of commercial spent nuclear fuel and high-level defense radioactive waste (81 FR 63475, September 15, 2016).

WGA represents the Governors of 19 western states and three U.S.-flag islands. The Association is an instrument of the Governors for bipartisan policy development, information exchange and collective action on issues of critical importance to the western United States.

WGA Policy Resolution 2014-06, *Storage and Disposal of Radioactive Waste and Spent Nuclear Fuel*, outlines the Governors' position on the importance of state involvement in the siting of any radioactive waste storage or disposal facility. Specifically, the policy states that no centralized interim storage facility shall be located within the geographic boundaries of a Western state or U.S. flag island without the written consent of the Governor in whose state or territory the facility is to be located.

The Governors also "strongly encourage the U.S. Department of Energy to work cooperatively with the states in implementing a policy to ensure the safe transportation, storage, disposition of [and] disposal of spent nuclear fuel and HLW [high-level waste] and to comply with agreements which have been negotiated and entered into by a state's Governor regarding the management, transportation and storage of spent nuclear fuel and high-level radioactive waste." The policy resolution in its entirety is attached to this letter.

Western Governors recognize the national importance of implementing a responsible disposal pathway for radioactive waste and spent nuclear fuel. We look forward to working with DOE to realize this goal.

Sincerely,

Steve Bullock
Governor of Montana
Chair, WGA

Dennis Daugaard
Governor of South Dakota
Vice Chair, WGA

Attachment: WGA Policy Resolution 2014-06, *Storage and Disposal of Radioactive Waste and Spent Nuclear Fuel*

Western Governors' Association
Policy Resolution 2014 - 06

Storage and Disposal of Radioactive Waste and Spent Nuclear Fuel

A. BACKGROUND

1. There are several classes of radioactive waste the nation is cleaning up, treating, transporting and/or storing. These classes are defined in the Nuclear Waste Policy Act and other federal laws. These include:

   - Spent nuclear fuel (SNF) from nuclear power plant sites and research reactors;
   - High-level radioactive waste (HLW) at Department of Energy (DOE) facilities;
   - Transuranic waste (TRU) the majority of which is at DOE facilities;
   - Low Level Radioactive Waste which is broken into 4 classes, including Greater-Than-Class C (GTCC) Waste.

2. Currently more than 75,000 metric tons of SNF is stored at or near nuclear power plant sites and research reactors in 38 states. Historically, more than 88% of the SNF at operating and shut down reactor sites has been generated east of the 100th meridian. In 2014 and beyond, more than 93% of the SNF from currently operating and prospective reactor sites will be generated east of the 100th meridian.

3. The amount of SNF stored on-site at commercial nuclear reactors will continue to accumulate—increasing by about 2,000 metric tons per year and likely almost doubling to about 140,000 metric tons before it can be moved off-site, because storage or disposal facilities may take decades to develop.

4. Congress mandated that the federal government begin accepting spent fuel by January 30, 1998. However, it remains uncertain when an operating repository will be sited, let alone begin accepting waste.

5. DOE's Draft Environmental Impact Statement (DEIS) for GTCC Low-Level Radioactive Waste and GTCC-Like Waste has identified seven potential site candidates, six of which are in the West. Since the vast majority of this waste would be generated outside of the western region, disposal in the West would significantly add to the transportation risk. Additionally, more than 90 percent of the existing inventory of TRU waste is located in the Western states. Given existing and proposed sites for storage of radioactive waste in the United States, the Governors are concerned that the Western states may be disproportionately impacted by nuclear waste transportation and storage activities.

6. None of the DOE sites under consideration in the draft EIS contain a Nuclear Regulatory Commission (NRC) certified facility for disposal of low-level or GTCC waste. Since

much of the GTCC waste is commercial waste and NRC regulated, the designation of such a non-NRC certified alternative for disposal would be inappropriate.

B. GOVERNORS' POLICY STATEMENT

1. In the event that centralized interim storage, either private or federal, is deemed necessary, no such facility, whether publicly or privately owned, shall be located within the geographic boundaries of a Western state or U.S. flag island without the written consent of the governor, in whose state or territory the facility is to be located.

2. Any proposal to store or otherwise dispose of radioactive waste and/or SNF must be viewed as being part of an integrated program that considers all aspects of necessary operation and intergovernmental considerations. Specifically, transportation and logistical considerations should not be an afterthought to the siting process.

3. The Governors support efforts by the federal government to examine alternative waste acceptance options, including but not limited to providing funds to utilities for expanded on-site storage and taking title to SNF at individual reactor sites. The search for alternatives must not detract from the imperative to develop a permanent solution to the management and disposition of SNF.

4. The Governors strongly encourage the U.S. Department of Energy to work cooperatively with the states in implementing a policy to ensure the safe transportation, storage, disposition of disposal of spent nuclear fuel and HLW and to comply with agreements which have been negotiated and entered into by a state's Governor regarding the management, transportation and storage of spent nuclear fuel and high-level radioactive waste.

5. Commercial SNF should remain at reactor sites until:

    - One or more storage and/or disposal sites are operational or reprocessing is deemed viable by an independent review.

    - DOE and the nuclear utility companies have worked with states along the waste transportation corridor to implement an acceptable transportation plan for shipping the SNF waste to interim storage facilities or permanent disposal sites.

    - DOE and the nuclear utility companies have put into place adequate infrastructure capacity to handle, store and dispose of this waste.

    - DOE, the U.S. Department of Transportation and the nuclear utility companies have ensured and funded adequate state and local emergency and medical

responder training and resources in case of an accident or terrorist attack while shipping this waste.

6. The creation of interim storage sites for SNF would be a direct result of the Federal government's failure to begin accepting spent fuel on schedule. Therefore, the Governors maintain that it is the federal government's responsibility to ensure adequate preparation for shipments to these facilities, coordination with states, and provision of adequate funding to reimburse the states for costs associated with shipments to any interim storage facility, whether publicly or privately owned. The Governors consider it to be entirely appropriate to use the Nuclear Waste Fund to pay for these activities.

7. Any decisions regarding the identification of an existing or planned site to dispose of GTCC and GTCC- like waste must consider any authority of the regional low-level waste compacts and all applicable NRC requirements for certification to accept commercially generated waste.

C. GOVERNORS' MANAGEMENT DIRECTIVES

1. The Governors direct the Western Governors' Association (WGA) staff, where appropriate, to work with Congressional committees of jurisdiction and the Executive Branch to achieve the objectives of this resolution, including funding, subject to the appropriation process, based on a prioritization of needs.

2. Furthermore, the Governors direct WGA staff to develop, as appropriate and timely, detailed annual work plans to advance the policy positions and goals contained in this resolution. Those work plans shall be presented to, and approved by, Western Governors prior to implementation. WGA staff shall keep the Governors informed, on a regular basis, of their progress in implementing approved annual work plans.

From: Talia T. Martin [tamartin@sbtribes.com]
Sent: Saturday, October 29, 2016 10:57 AM
To: Consent Based Siting
CC: Talia T. Martin
Subject: ShoBan Tribes Comment Letter_Summary of Public Input October2016.pdf
Attachments: ShoBan Tribes Comment Letter_Summary of Public Input October2016.pdf

Submission of the Shoshone Bannock Tribes comment letter for the *Request for Public Comment on the Draft Report Entitled Designing a Consent-based Siting Process: Summary of Public Input.*

The SHOSHONE-BANNOCK TRIBES

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3700
FAX # (208) 237-0797

FORT HALL BUSINESS COUNCIL
P.O. BOX 306
FORT HALL, IDAHO 83203

October 28, 2016

U.S. Department of Energy
Office of Nuclear Energy
Draft Consent-Based Siting Report
1000 Independence Ave. SW
Washington, DC 20585

RE: Comments on the Draft Report for Designing a Consent-Based Siting Process: Summary of Public Input (Document Number: 2016-22312)

The Shoshone-Bannock Tribes' (Tribes) long-standing relationship with the Department of Energy (DOE) continues to gain greater importance and momentum. In furtherance of that relationship, and in response to the Federal Register Notice 81 FR 63475, the Tribes are pleased to submit comments on the Consent-Based Siting Process Draft Report.

The Fort Hall Reservation is Idaho's largest Indian Reservation and is located southeast of the Idaho National Laboratory (INL). The INL lies entirely within our ancestral lands, on which we retain treaty rights under the Fort Bridger Treaty of 1868. We remain adamantly opposed to the storage and disposal of radiological, non-radiological, and hazardous waste within our ancestral territory, treaty lands, and tribal lands. Past practices of the DOE have already contaminated some of those lands, including around INL and the Snake River Aquifer. That said, we appreciate DOE's progress in terms of cleanup, Tribal-DOE relations, and new and better efforts to site nuclear waste storage and disposal.

We hope that the DOE will incorporate the following comments into the final draft of the Consent-Based Siting Report ("Report").

I. BACKGROUND ON NUCLEAR WASTE, DISPOSAL, AND STORAGE

The consent-based siting process Report must adequately inform. The Tribes offer several improvements for the Report's Introduction.

(1) Storage and disposal. Before the late 1980's, the DOE's best option for achieving long-term isolation of radioactive materials, at least at INL, was to bury it. An unforeseen problem arose: leakage of nuclear waste into the ground and Snake River Aquifer that will spread and to last for thousands of years if not more. The world gained new technologies and cleanup efforts are curbing part of that problem. Now in 2016, perhaps the discussion of storage and disposal siting should include not just intent to store and dispose, but also to safely retract the materials in the decades to come if and when new technologies could eliminate the dangers of nuclear waste.

(2) As a process for consent-based siting for present and future waste, the Report should include greater detail on future projections of waste. The Report says that "2,000 metric tons per year" are generated of spent nuclear fuel (SNF), but no projections are provided for waste generated by defense nuclear activities. Are the rates flat, increasing, or decreasing? How much waste will there be for the next generation? The 7th generation?

(3) The Report should offer information on efforts to reduce or eliminate nuclear waste and whether those efforts might reduce or eliminate the need for future waste storage.

(4) The Report offers four proposed nuclear waste facilities as part of the Integrated Waste Management Strategy, but then also suggests "the concept of deep borehole disposal". A deep borehole is just a much deeper burial than what was used between 1950-1980 at INL. We recommend at least adding a statement about possible retraction of waste if a better method of disposal or recycling arises in the coming decades. If that is not part of "the concept" then it should become part of the concept.

(5) Nuclear waste storage and disposal sites are scattered across the United States. Are members of the community to assume that the four proposed nuclear waste facilities (plus the possible deep borehole) are the only ones DOE intends for the future? Would all nuclear waste be transported out of their present locations to four or five sites?

II. IMPROVEMENTS TO THE APPROACH

Under Section 1.2 - Approach of the Report, DOE highlighted five questions that it previously asked the public to consider when providing input on the process. The Tribes incorporate by reference our comments provided by letter dated July 30, 2016. Below, we either offer new comments or re-emphasize previous comments.

II.A. Additional Ways for DOE to Ensure Fair Process

Treaties Rights. One major part of the fair process in selecting sites for nuclear waste storage and disposal is to honor the laws of the land. The United States is a nation of laws. Article VI of the United States Constitution declares: "all treaties made . . . shall be the supreme law of the land." Under the Fort Bridger Treaty, the Tribes retain Treaty rights to lands controlled by the federal government, including DOE lands on tribal original ancestral lands. Any siting for nuclear waste storage and disposal, therefore, must first adhere to the Fort Bridger Treaty.

Trust Responsibility. The Courts of the United States have repeatedly re-emphasized and reaffirmed the federal government's trust responsibility to American Indian tribes. As noted in *Seminole Nation*, the federal government is charged with "moral obligations of the highest responsibility and trust. Its conduct, as disclosed in the acts of those who represent it in dealings with the Indians, should therefore be judged by the most exacting fiduciary standards. The trust responsibility restrains government action that affects Indians and therefore is an important source of protection for Indian rights." Thus, the trust responsibility is a vital part of the fairness in DOE's siting process.

Tribal Agreements. The Tribes and DOE have established and improved relations through our Agreement-in-Principle (AIP). In part, the AIP promotes the trust responsibility, Tribal self-determination, recognition of inherent sovereign rights, and consultation on a government-to-government basis. To improve fairness of the DOE's nuclear waste siting process, DOE must also look to the AIP goals and provisions. DOE must also look at where the relationship with the Tribes will go in the future—certainly the continued path to help promote self-determination, sovereign rights, and the Shoshone-Bannock Tribes' INL Oversight program and related activities for the betterment, health, and wellbeing of the Tribes.

Religious Freedoms and Sacred Sites. Any decision by the DOE on a consent-based siting process, and the process itself, of waste storage and disposal siting must not infringe upon American Indian religious freedoms. The Establishment Clause of the First Amendment (and supporting laws such as the Religious Freedom Restoration Act) bars the United States from inhibiting religion, including American Indian religions. Religion and spirituality of American Indians are typically tied to the land, and all water is sacred to every tribe. This also brings into focus Indian sacred sites and DOE's requirement under Executive Order 13007 to protect the integrity and access of such sites, which includes privacy. DOE must integrate these concerns into the siting process.

II.B. Models and Experience for Designing the Process

The DOE is now uniquely positioned to right its perception and trust with the Tribal community. In the coming stages of the siting process, and other DOE activities, the Tribes wish to improve our relationship with DOE. To both help design a siting process and work toward a better Tribal-DOE relationship, we offer the following:

1. The Tribal-DOE Agreement in Principle and its future improvements;
2. Creation of Tribal Working Groups for the process;
3. Develop or support informational or educational opportunities;
4. Engage in regular and meaningful consultation.

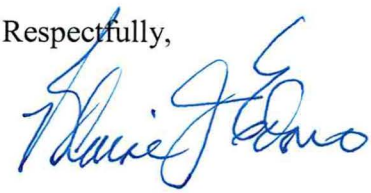
II.C. Who Should be Involved in Site Selection?

The Tribes must be invited to be involved in any of the DOE's site selection processes. It is up to the Tribes to then make a decision as to our involvement. Site

selection is particularly critical to the Tribes given the large land-base on which we retain Treaty rights and Tribal interests. But these lands are not the extent to which we are interested in participating in site selection, because possible spills or accidents have the potential to impact lands, water, air, plants, animals, and people much further from the site of potential spills or accidents.

In summary, the Tribes look forward to improving our relationship with DOE not only through the Consent-Based Siting Process but also through other measures noted above. And, we hope that the DOE will utilize our comments to improve the Report.

Respectfully,



Blaine J. Edmo
Chairman

From: marilyn elie [eliewestcan@gmail.com]
Sent: Thursday, September 29, 2016 11:23 AM
To: Consent Based Siting; CORE Group of IPSEC
Subject: "Consent based" policy for high level radioactive waste storage

To Whom It May Concern:

Your policy on consent based must include reactor communities as well as receiving communities.

As a grassroots organization the Indian Point Safe Energy Coalition does not consent to the transport of high level radioactive waste from the Indian Point nuclear reactors.

I see nothing in your procedure that takes into consideration this part of the equation. Furthermore, hearings must be held in all of the reactor communities involved.

Lacking these basic parts of the equation, what you are doing cannot qualify as "consent based."

Sincerely,
Marilyn Elie
Indian Point Safe Energy Coalition

From: Nancy Lee Farrell [nfarrellwa@gmail.com]
Sent: Sunday, October 30, 2016 4:33 AM
To: Consent Based Siting
Subject: No transporting of nuclear waste

Nuclear power got started in the 70's without any clear picture of what to do with waste. Transporting them is no answer: it is far too risky. Nuclear plants need to store wastes on site.

Sent from Mail for Windows 10

From: Dan Fullerton [dan.fmpc@mail.com]
Sent: Thursday, October 27, 2016 7:14 PM
To: Consent Based Siting
Subject: Public Comment on Consent Based Siting

Consent based siting is yet another attempt to "kick the can down the road" in the attempt to solve the nuclear waste problem.

The first and most effective approach to solving the nuclear waste problem is to stop making nuclear waste.

Nuclear material is hazardous to people's health and the health of other inhabitants of the earth. Moving nuclear material, including nuclear waste, around leads to radiological releases. Such movement also increases the probability of accidents/incidents where more radiological releases will occur. Therefore, don't move the nuclear waste or move it as little as possible, such as out of the locations near bodies of water; for the water levels of many such bodies will be rising as a result of climate change. Therefore, move the waste to higher ground, but for a limited distance.

Temporary nuclear waste storage sites, even when consent based, require the movement of hazzardous waste--twice--doubling the risk of accidents, incidents, and collateral releases of radiological matter as the waste is transported.

While much of the uranium mining in the U.S. has occured on national lands and tribal grounds, the nuclear fuel has not been used there. Do not return the refuse (nuclear waste) to national lands and tribal grounds. Leave it where it is, or nearby above future increased water levels.

Since the primary (but very limited) beneficial output of the nuclear power cycle is electricity, and since those who have received the most beneficial output (i.e., electricity) reside near nuclear power plants, they must also be required to be responsible for the primary and non-beneficial output (i.e., nuclear waste).

Hardened On Site Storage (or nearby, above future increased water levels) is where the above concerns and limitations lead us.

Consent-based siting has the connotation of "siting where we can provide the incentives for those in political power to get a particular population to agree to siting in their locality."

Keep the nuclear waste where it is. Protect it in hardened sites. Do it as rapidly as it can be feasably done, not on the industry's timelines but on timelines consistent with safe cooling. Having nuclear waste sit in cooling pools for 15, 20, 30, and 40 years, "kicks the can down the road" and keeps the sites more hightly vulnerable long after the used fuel rods can be stored safely in dry cask storage.

Thank you for receiving my comments.

John D. Fullerton
70 Spring Pond Drive
Ossining, NY

Document Metadata:DOE-HQ-2016-0023-DRAFT-0003

Document Details

Docket ID:	DOE-HQ-2016-0023
Docket Title:	Designing a Consent-Based Siting Process *
Document File:	
Docket Phase:	Notice
Phase Sequence:	1
Original Document ID:	DOE-HQ-2016-0023-DRAFT-0003
Current Document ID:	DOE-HQ-2016-0023-DRAFT-0003
Title:	Comment on FR Doc # 2016-22312
Number of Attachments:	1
Document Type:	PUBLIC SUBMISSIONS *
Document Subtype:	Public Comment
Comment on Document ID:	DOE-HQ-2016-0023-0001
Comment on Document Title:	Designing a Consent-Based Siting Process
Status:	Pending_Post
Received Date:	10/27/2016 *
Date Posted:	
Posting Restriction:	No restrictions
Submission Type:	API
Number of Submissions:	1 *

Document Optional Details

Status Set Date:	10/27/2016
Current Assignee:	Bacon, Cuttie (DOE)
Status Set By:	Public
Comment Start Date:	
Comment Due Date:	
Legacy ID:	
Tracking Number:	1k0-8sp0-y7cv
Total Page Count Including Attachments:	1

Submitter Info

Comment:	Waste and contaminated nuclear activity. Scattered in huge land areas and on the ocean floor. They are dangerous, if they are very dangerous for the duration of the lethal effectiveness of long active. The method of safe, effective, cheap, easy, possible to apply without people oppose confinement, because it proved how safe it is in millions of years your content sealed not emerge for no geological reason, earthquakes, or failures land could not flow the content for over 300 million years, I mean the oil and gas wells which have been exploited and are exhausted in all its extractions, first, second and third, and they are hollow safe end sealed by nature. The intention is to be honest and explain that this methodology is being applied by DOE for CO2 and in 1997 the patent in France with the acceptance of President Chirac.dice verbatim for gas, liquid and solid waste. Unlimited volume. Because without limits, it is that the waste is unattractive to terrorism and those who want to attack with states and peaceful countries. The dilute on a scale of 1 in 1,000 is get the chance to think about extrraerlos, just to extract is very unlikely for deep wells and malicious technology for this purpose is unlikely. And more one thinks about future generations that they will find the technology for use in the well. Because we confine all together in one place without dispersing it without knowing as time goes by forgetfulness, Where are they ? There is the danger, not places like Yuca that if human enters deposit, you can also remove .... By submitting copies of patent certify the commitment of France and President Chirac that if approved is because the reason is valid. simple proposal. The endorsement of President Chirac sent it by mail. I do not speak English only Spanish . *
First Name:	Eduardo *
Middle Name:	
Last Name:	Garcia *
Mailing Address:	Av.Maaipu 1864 *
Mailing Address 2:	Av.Maipu 1862 *
City:	Vte.Lopez *
Country:	Argentina
State or Province:	Buenos Aires
ZIP/Postal Code:	1602 *
Email Address:	edg1950@gmail.com
Phone Number:	00541147975667
Fax Number:	
Organization Name:	Energy -W
Submitter's Representative:	

Government Agency Type:

Government Agency:

Cover Page:

From: Eduardo Garcia [mailto:edg1950@gmail.com]
Sent: Thursday, October 27, 2016 2:47 PM
To: Consent Based Siting <consentbasedsiting@hq.doe.gov>
Subject: Fwd: Wastes

---------- Forwarded message ----------
From: **Eduardo Garcia** <edg1950@gmail.com>
Date: 2016-10-27 9:36 GMT-03:00
Subject: Wastes
To: Consent Based Siting <consentbasedsiting@hq.doe.gov>

Waste and contaminated nuclear activity.
Scattered in huge land areas and on the ocean floor.
They are dangerous, if they are very dangerous for the duration of the lethal effectiveness of long active.
The method of safe, effective, cheap, easy, possible to apply without people oppose confinement, because it proved how safe it is in millions of years your content sealed not emerge for no geological reason, earthquakes, or failures land could not flow the content for over 300 million years,
I mean the oil and gas wells which have been exploited and are exhausted in all its extractions, first, second and third, and they are hollow safe end sealed by nature.
The intention is to be honest and explain that this methodology is being applied by DOE for CO2 and in 1997 the patent in France with the acceptance of President Chirac.dice verbatim for gas, liquid and solid waste.
Unlimited volume.

Because without limits, it is that the waste is unattractive to terrorism and those who want to attack with states and peaceful countries.
The dilute on a scale of 1 in 1,000 is get the chance to think about extrraerlos, just to extract is very unlikely for deep wells and malicious technology for this purpose is unlikely.
And more one thinks about future generations that they will find the technology for use in the well.
Because we confine all together in one place without dispersing it without knowing as time goes by forgetfulness,
Where are they ?
There is the danger, not places like Yuca that if human enters deposit, you can also remove ....

By submitting copies of patent certify the commitment of France and President Chirac that if approved is because the reason is valid.
Simple proposal.
The endorsement of President Chirac sent it by mail.
I do not speak English only Spanish .

Eduardo Garcia
Av.Maipu 1864 CP:1602
Vte.Lopez
Prov. Buenos Aires
Argentina
00541147975667
W-Spp:+5491144232218

Neutralisation Dechets Nucleaires
Demande de Brevet d` invention
Déposée le 16 Avril 1997 sous le Nº 97 04683
Titulaire: Eduardo D.García

"PROCEDE DE NEUTRALISATION DE DECHETS DANGEREUX ET / OU NUCLEAIRES"

La présente invention est destinée à la neutralisation des déchets très dangereux et / ou nucléaires.

Actuellement, ces déchets son stockés dans des dépôts ou décharges qui ne sont ni stables, ni permanents, ce qui les rends dangereux dans le futur.

La présente demande de brevet a pour objet un procédé qui est donc destiné à annuler les inconvénients de ces stockages.

Pour ce faire, nous proposons d` utiliser les anciens puits de pétrole ou de gaz, et d` injecter, dans l`un au moins de ces puits, des déchets dangereux, de préférence par le même conduit qui servait à extraire le pétrole ou le gaz, puis de sceller le ou les conduits d` injection, de préférence avec du béton.

Le procédé de neutralisation de déchets dangereux et / ou nucléaires de l`invention se caractérise donc en ce qu`il consiste à injecter lesdits déchets par au moins un conduit dans au moins un ancien puits de pétrole ou de gaz, puis à sceller chaque conduit d`injection.

Avantageusement, il consiste à utiliser, comme conduit d`injection, le même conduit ayant servi à extraire le pétrole ou le gaz.
Avantageusement en outre, il consiste à sceller au moins un conduit d`injection de déchets avec du béton.

Pou la plupart de ces déchets, il s`agit donc d` un retour à la source, donc écologiquement justifié.

Les hydrocarbures ou gaz d` hydrocarbures ou naturels ayant séjourné pendant des millions d` années dans ces poches, il n` y a pas de raison objective de craindre une dégradation des conditions de stockage.

Il y a lieu toutefois de réaliser une éetude approfondie de la géologie du site avant son utilisation, en recherchant le plus grande profondeur possible.

L` invention a enfin pour but l` application des anciens puits de pêtrole ou de gaz au stockage des déchets dangereux et / ou nucléaires dans l` un au moins de ces puits.

REVENDICATIONS

1. Procédé de neutralisation de déchets dangereux et / ou nucléaires, caractérisé en ce qu` il consiste à injecter lesdits déchets par au moins un conduit dans au moins un ancien puits de pétrole ou de gaz , puis à sceller chaque conduit d` injection.

2. Procédé selon la revendication 1, caractérisé en ce qu` il à utiliser, comme conduit d` injection, le même conduit ayant servi à extraire le pétrole ou le gaz.

3. Procédé selon l` une des revendications 1 et 2, caractérisé en ce qu` il consiste à sceller au moins un conduit d` injection de déchets avec du béton.

4. Application des anciens puits de pétrole ou de gaz, caractérisée en ce qu` elle consiste à stocker des déchets dangereux et / ou nucléaires dans l` un au moins de ces puits.

" PROCEDE DE NEUTRALISATION DE DECHETS DANGEREUX ET / OU NUCLEAIRES "

ABREGE

Le procédé de neutralisation de l` invention consiste à injecter des déchets dangereux et / ou nucléaires par au moins un conduit dans au moins un ancien puits de pétrole ou de gaz, puis à sceller chaque conduit d` injection.

Application à la neitralisation de déchets dangereux et / ou nucléaires.

Waste and contaminated nuclear activity.
Scattered in huge land areas and on the ocean floor.
They are dangerous, if they are very dangerous for the duration of the lethal effectiveness of long active.
The method of safe, effective, cheap, easy, possible to apply without people oppose confinement, because it proved how safe it is in millions of years your content sealed not emerge for no geological reason, earthquakes, or failures land could not flow the content for over 300 million years,
I mean the oil and gas wells which have been exploited and are exhausted in all its extractions, first, second and third, and they are hollow safe end sealed by nature.
The intention is to be honest and explain that this methodology is being applied by DOE for CO2 and in 1997 the patent in France with the acceptance of President Chirac.dice verbatim for gas, liquid and solid waste.
Unlimited volume.

Because without limits, it is that the waste is unattractive to terrorism and those who want to attack with states and peaceful countries.
The dilute on a scale of 1 in 1,000 is get the chance to think about extrraerlos, just to extract is very unlikely for deep wells and malicious technology for this purpose is unlikely.
And more one thinks about future generations that they will find the technology for use in the well.
Because we confine all together in one place without dispersing it without knowing as time goes by forgetfulness,
Where are they ?
There is the danger, not places like Yuca that if human enters deposit, you can also remove ....
By submitting copies of patent certify the commitment of France and President Chirac that if approved is because the reason is valid.
Simple proposal.
The endorsement of President Chirac sent it by mail.
I do not speak English only Spanish .

Eduardo Garcia
Av.Maipu 1864 CP:1602
Vte.Lopez
Prov. Buenos Aires
Argentina
00541147975667
W-Spp:+5491144232218

From: Eduardo Garcia [edg1950@gmail.com]
Sent: Thursday, October 27, 2016 5:36 AM
To: Consent Based Siting
Subject: Wastes
Attachments: REPrésidence de la République.eml; residuesDocumento.rtf

Waste and contaminated nuclear activity.
Scattered in huge land areas and on the ocean floor.
They are dangerous, if they are very dangerous for the duration of the lethal effectiveness of long active.
The method of safe, effective, cheap, easy, possible to apply without people oppose confinement, because it proved how safe it is in millions of years your content sealed not emerge for no geological reason, earthquakes, or failures land could not flow the content for over 300 million years,
I mean the oil and gas wells which have been exploited and are exhausted in all its extractions, first, second and third, and they are hollow safe end sealed by nature.
The intention is to be honest and explain that this methodology is being applied by DOE for CO2 and in 1997 the patent in France with the acceptance of President Chirac.dice verbatim for gas, liquid and solid waste.
Unlimited volume.

Because without limits, it is that the waste is unattractive to terrorism and those who want to attack with states and peaceful countries.
The dilute on a scale of 1 in 1,000 is get the chance to think about extrraerlos, just to extract is very unlikely for deep wells and malicious technology for this purpose is unlikely.
And more one thinks about future generations that they will find the technology for use in the well.
Because we confine all together in one place without dispersing it without knowing as time goes by forgetfulness,
Where are they ?
There is the danger, not places like Yuca that if human enters deposit, you can also remove ....
By submitting copies of patent certify the commitment of France and President Chirac that if approved is because the reason is valid.
Simple proposal.
The endorsement of President Chirac sent it by mail.
I do not speak English only Spanish .

Eduardo Garcia
Av.Maipu 1864 CP:1602
Vte.Lopez
Prov. Buenos Aires
Argentina
00541147975667
W-Spp:+5491144232218

Thank you! Your comment has been submitted to Regulations.gov for review by the the Department of Energy.

Comment Tracking Number: 1k0-8sp0-y7cv

Neutralisation Dechets Nucleaires
Demande de Brevet d` invention
Déposée le 16 Avril 1997 sous le Nº 97 04683
Titulaire: Eduardo D.García

"PROCEDE DE NEUTRALISATION DE DECHETS DANGEREUX ET / OU NUCLEAIRES"

La présente invention est destinée à la neutralisation des déchets très dangereux et / ou nucléaires.

Actuellement, ces déchets son stockés dans des dépôts ou décharges qui ne sont ni stables, ni permanents, ce qui les rends dangereux dans le futur.

La présente demande de brevet a pour objet un procédé qui est donc destiné à annuler les inconvénients de ces stockages.

Pour ce faire, nous proposons d` utiliser les anciens puits de pétrole ou de gaz, et d` injecter, dans l`un au moins de ces puits, des déchets dangereux, de préférence par le même conduit qui servait à extraire le pétrole ou le gaz, puis de sceller le ou les conduits d` injection, de préférence avec du béton.

Le procédé de neutralisation de déchets dangereux et / ou nucléaires de l`invention se caractérise donc en ce qu`il consiste à injecter lesdits déchets par au moins un conduit dans au moins un ancien puits de pétrole ou de gaz, puis à sceller chaque conduit d`injection.

Avantageusement, il consiste à utiliser, comme conduit d`injection, le même conduit ayant servi à extraire le pétrole ou le gaz.
Avantageusement en outre, il consiste à sceller au moins un conduit d`injection de déchets avec du béton.

Pou la plupart de ces déchets, il s`agit donc d` un retour à la source, donc écologiquement justifié.

Les hydrocarbures ou gaz d` hydrocarbures ou naturels ayant séjourné pendant des millions d` années dans ces poches, il n` y a pas de raison objective de craindre une dégradation des conditions de stockage.

Il y a lieu toutefois de réaliser une éetude approfondie de la géologie du site avant son utilisation, en recherchant le plus grande profondeur possible.

L` invention a enfin pour but l` application des anciens puits de pêtrole ou de gaz au stockage des déchets dangereux et / ou nucléaires dans l` un au moins de ces puits.

REVENDICATIONS

1. Procédé de neutralisation de déchets dangereux et / ou nucléaires, caractérisé en ce qu` il consiste à injecter lesdits déchets par au moins un conduit dans au moins un ancien puits de pétrole ou de gaz , puis à sceller chaque conduit d` injection.

2. Procédé selon la revendication 1, caractérisé en ce qu` il à utiliser, comme conduit d` injection, le même conduit ayant servi à extraire le pétrole ou le gaz.

3. Procédé selon l` une des revendications 1 et 2, caractérisé en ce qu` il consiste à sceller au moins un conduit d` injection de déchets avec du béton.

4. Application des anciens puits de pétrole ou de gaz, caractérisée en ce qu` elle consiste à stocker des déchets dangereux et / ou nucléaires dans l` un au moins de ces puits.

" PROCEDE DE NEUTRALISATION DE DECHETS DANGEREUX ET / OU NUCLEAIRES "

ABREGE

Le procédé de neutralisation de l` invention consiste à injecter des déchets dangereux et / ou nucléaires par au moins un conduit dans au moins un ancien puits de pétrole ou de gaz, puis à sceller chaque conduit d` injection.

Application à la neitralisation de déchets dangereux et / ou nucléaires.

From: Jon Goldstein [jonw.goldstein@gmail.com]
Sent: Monday, October 31, 2016 8:56 AM
To: Consent Based Siting
Subject: Comment on Designing a Consent-Based Siting Process
Attachments: WIPP in BAS.pdf

Attached please find an article I authored that I hope will be helpful as DOE considers a consent-based siting process to establish an integrated waste management system to transport, store, and dispose of commercial spent nuclear fuel and high-level defense radioactive waste. This paper reviews the history of the Waste Isolation Pilot Project in NM with an eye toward lessons learned that will be applicable for a high level waste facility. It was written before the recent fire that has temporarily closed the WIPP facility, but I think the siting lessons still stand.

Thank you,

Jon Goldstein

Bulletin of the Atomic Scientists

IT IS 6 MINUTES TO MIDNIGHT

Feature

Bulletin of the Atomic Scientists
67(5) 77–88

DOI: 10.1177/0096340211421473
http://thebulletin.sagepub.com

How to build a better sepulcher: Lessons from New Mexico's Waste Isolation Pilot Plant

Jon Goldstein

Abstract

New Mexico's Waste Isolation Pilot Plant took three decades, several lawsuits, myriad battles with the Department of Energy, and more than a few political twists and turns before becoming the first and only operational geologic radioactive waste repository in the world. The story of how Carlsbad, New Mexico, became the center of a national drama is an object lesson in how the United States and countries around the world can improve on this lengthy, contentious, and incredibly vital repository approval process. As more and more nations build nuclear programs and accumulate radioactive waste, there is no time to lose in initiating plans for safe disposal sites that can last—essentially—forever.

Keywords

Carlsbad, disposal, radioactive waste, RCRA permit, repository, transuranic waste, Waste Isolation Pilot Plant, WIPP

In the predawn hours of March 26, 1999, after 27 years of scientific study, local lobbying, political pressures, lawsuits by two New Mexico attorneys general, and several acts of Congress, the first shipment of radioactive waste arrived at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. This shipment, arriving from the Los Alamos National Laboratory—where the atomic age first dawned—marked the opening of the world's first, and so far only, operating geologic tomb for radioactive waste.

How and why was WIPP approved while other radioactive waste disposal sites—such as the proposed high-level waste repository at Yucca Mountain, Nevada—have languished amid local not-in-my-backyard concerns and political equivocation? Tens of thousands of tons of spent fuel sit idly at reactor sites in the United States with hundreds of thousands more tons undisposed of worldwide. As the still-unfolding disaster at Fukushima and the failure of the reactors' spent-fuel pools has shown us, spent fuel is not benign. Undisposed,

it remains susceptible to accident or misuse by terrorists.

Although the quarter-century process that led to WIPP's opening was far from perfect, as President Harry S. Truman said in 1947, "[O]ne of the chief virtues of a democracy... is that its defects are always visible and under democratic processes can be pointed out and corrected" (Truman, 1947). In that spirit, the United States has learned several important lessons from the WIPP process in Carlsbad—lessons that can help inform and improve processes currently underway for other proposed radioactive waste disposal sites around the world. Obviously, each site will have its own geologic and political characteristics, but many WIPP lessons are universal.

The events in Carlsbad and Santa Fe, New Mexico, and Washington, DC—as WIPP wound its way from local economic-development project to operational repository—form the best existing case study for the elements of an ultimately successful approval process. And this case study could not be timelier: The United States, South Korea, Japan, China, Canada, and countries throughout Europe are grappling with the radioactive waste disposal problem—and grappling with what public processes to use to solve it. WIPP is the key.

What is WIPP?

The Waste Isolation Pilot Plant is a deep geologic radioactive waste repository located in the Chihuahuan Desert in salt beds 2,150 feet beneath the surface and 26 miles southeast of Carlsbad, New Mexico. WIPP is operated by Washington TRU Solutions through a contract with the US Department of Energy and under restrictive permits issued by the US Environmental Protection Agency (EPA) and the New Mexico Environment Department. The federal government spent approximately $2 billion to build WIPP, which has an annual operating budget of more than $200 million.

Under its state and federal permits as well as the 1992 US Land Withdrawal Act, radioactive waste disposal at WIPP is limited to the narrow category of defense-related transuranic waste, which is defined as waste containing man-made radioactive elements that have atomic numbers higher than uranium. This definition excludes low-level and high-level wastes from disposal at WIPP. In other words, the defense-related provision limits WIPP: The plant can only accept waste created by US nuclear weapon development; it is prohibited from accepting waste from the commercial nuclear power industry. The majority of the waste destined for WIPP consists of clothing, tools, and debris contaminated with plutonium as a result of nuclear weapon production during the Cold War.

Physically, WIPP is made up of a series of corridors and rooms mined out of the Salado Formation. This salt formation was created 250 million years ago as evaporation of the ancient Permian sea created a 2,000-foot-thick salt bed. Because of plutonium's high toxicity (extremely minute amounts have been shown to cause lung cancer if inhaled) and long endurance in the natural environment (the radioactive half-life of plutonium 239—plutonium's most common isotope—is 24,000 years), the EPA was asked to certify that WIPP can isolate this waste for a period of at

least 10,000 years. WIPP's rooms are designed to accomplish this crucial feat by using the natural plasticity of salt under pressure, which will collapse in on itself over time, compacting and encapsulating the waste. Once WIPP reaches its capacity, it is estimated that these tunnels and rooms will collapse and "heal themselves" within a century (Cravens, 2007: 350). Meanwhile, the WIPP rooms continue to be filled with drums of transuranic waste shipped via truck from sites across the Energy Department's nuclear weapons complex.

Why Carlsbad?

From its inception, the town of Carlsbad and surrounding Eddy County have been focused on creating a thriving economy in what can be a challenging desert setting. Rancher Charles Bishop Eddy founded Carlsbad in the late nineteenth century on the banks of the Pecos River in southeastern New Mexico. Noting the popularity at the time of soaking in mineral waters, residents voted in 1899 to name the town "Carlsbad" after the popular spa resort in Czechoslovakia in hopes that it would draw tourists and settlers (McCutcheon, 2002). Alas, the dusty American Carlsbad never lived up to its spa-town namesake. In fact, the county lost more than one-third of its 12,000 souls between the 1910 and 1920 census (US Census, 1910, 1920).

But, in 1925, potash deposits were discovered. The United States Potash Company opened the first mine in the area in 1930, and, by the end of World War II, the region accounted for 85 percent of the national production of potassium carbonate. The mines led to a population boom, and, by 1960, Carlsbad's population exceeded 25,000. However, large deposits of potash were also soon discovered in Canada—driving down the price of potash from $50 a ton to $11. And, in 1967, US Potash announced it would close the mine. By 1970, the population of Carlsbad had shrunk to 21,297 (McCutcheon, 2002).

Meanwhile, bedded salt was beginning to attract scientific attention as a possible place to dispose of fast-accumulating nuclear waste. In 1957, the National Academy of Science concluded in a report that "the most promising method" of disposing of radioactive waste is in underground salt deposits (National Academy of Sciences, 1957: 4). And, in the mid-1960s, the Atomic Energy Commission (AEC) began studying a former salt mine near Lyons, Kansas, as a potential location for a repository. These efforts were abandoned in 1971 after Kansas officials raised technical concerns. Meanwhile, upon hearing this news—and considering the economic hardship the mine closure had caused Carlsbad—State Senator Joe Gant Jr reportedly called local Congressman Harold Runnels and asked, "Why not Carlsbad?" (Taylor, 2007: 122). And so, efforts were launched to locate a repository in the salt deposits outside Carlsbad.

WIPP has always enjoyed strong local support in a region hungry for jobs. And the area's residents—all too familiar with the boom-and-bust economic cycles of the local potash and oil-and-gas industries—were already accustomed to the inherent dangers of mining and energy extraction. Compared with other communities, this may have given local residents a

higher tolerance for the risks associated with nuclear waste disposal.

The Carlsbad area was also generally knowledgeable about the Energy Department and its precursor, the Atomic Energy Commission. In 1961, as a part of the federal government's "Plowshares" program, a 5-kiloton atomic bomb was detonated in a local salt bed, "melting more than 2,000 tons of salt, creating a cavity larger than the base of the US Capitol dome and taller than an eight story building" (McCutcheon, 2002: 24). "Project Gnome," as the experiment was called, had been designed to explore the peaceful use of atomic weapons in creating underground storage caverns. It succeeded in creating a large cavity, but the space was too radioactive to be of use and the project was deemed a failure. Failure or no, this experiment gave the local population an idea of the economic possibilities that atomic energy could bring to the area. If the town couldn't be a spa resort or mineral metropolis, maybe it could hitch its economic wagon to this new nuclear industry, which had already turned tiny Los Alamos, New Mexico, into the Manhattan Project's "Secret City."

The local *Carlsbad Current-Argus*'s headline in 1959 during the run up to Project Gnome could easily apply 40 years later to WIPP: "Atom Bomb May Be Boon for Carlsbad: Could Bring About Further Industrial Expansion in Eddy" (McCutcheon, 2002: 24).

The 30-year odyssey: A history of WIPP's approval process

Despite unwavering support in Carlsbad, WIPP's track record in the state capital would be decidedly more mixed. New Mexico is one of the nation's most diverse states: both ethnically (with the highest percentage of people of Hispanic heritage—45 percent—and the third-highest percentage of Native Americans) and politically (New Mexico runs the gamut from affluent and liberal Santa Fe to the socially and politically conservative counties of "Little Texas" in the southeast). This often led statewide political leaders to take cautious and sometimes confusing stances on WIPP. Over the three decades it took to open the project, Attorney General Jeff Bingaman sued the federal government in 1981 over WIPP's development and then ended up being the US senator who passed its enabling legislation in 1992. WIPP's most vocal critic in the House of Representatives was Bill Richardson, who ended up as the US secretary of energy who opened the facility. As the legendary, three-term New Mexico Governor Bruce King said of the project, "Some of my friends support it, and some oppose it, and I'm for my friends" (McCutcheon, 2002: 30).

Further complicating the approval process was the Energy Department's repeated inability to maintain promises made to state officials. This began in 1977, when the department abruptly announced that in addition to waste from the weapons program, it was also seriously considering the WIPP site as the location for a civilian high-level waste repository. Even Senator Pete Domenici, then early in his career but already established as a supporter of all things nuclear, stated that talk of expanding WIPP to also include civilian waste was "inappropriate and premature" (McCutcheon, 2002: 30).

Realizing that trying to expand WIPP's mission could end up killing the project altogether, Energy Secretary James Schlesinger met with New Mexico's congressional delegation in February 1978 and verbally promised the state "veto power" over the WIPP project. Unfortunately, in the months to follow, the Energy Department would back off from this position, replacing its promise of "veto power" with a more vague promise of state "concurrence." As journalist Chuck McCutcheon noted, "Because of its failure to articulate a consistent vision and state oversight role for WIPP, the department went from dealing with a once cooperative state government to a hostile one" (2002: 65).

This early conflict had far-reaching consequences. In 1979, Congress acted to settle the issue by passing legislation authorizing WIPP "to demonstrate the safe disposal of radioactive waste resulting from the defense activities and programs of the United States" (Public Law 96-164, Section 213). This was an attempt to clearly and narrowly define the mission of the repository as exclusively for the disposal of defense-related waste. The law also required the Energy Department to "seek to enter into a written agreement" with New Mexico on WIPP (Hancock, 2010: 3).

Just the same, in May 1981, New Mexico Attorney General Bingaman filed suit in federal district court to block construction of the initial phase of WIPP. A series of agreements in the 1980s settled the lawsuit and required the Energy Department to "consult and cooperate" with the state. The settlement also granted the state the right to independently monitor WIPP, allowed for public comment on policy proposals for the facility, and committed the Energy Department to funding upgrades to state highways that would see increased truck traffic because of WIPP (Hancock, 2010). But the Energy Department would continually find ways to try to circumvent these agreements.

The Energy Department's attempted shortcuts were largely prompted by Idaho Governor Cecil Andrus' announcement in October 1988 that he would not allow waste shipments from the Rocky Flats Environmental Technology Site near Denver to be sent to the Idaho National Lab. Andrus was disappointed that the Energy Department was making little apparent progress toward opening WIPP despite promises to Idaho that radioactive waste would soon be leaving the state. Andrus backed up his statement by deploying Idaho State Troopers to the border to block rail shipments—"for safety purposes and because I didn't trust the Department of Energy"—making national news in the process (McCutcheon, 2002: 101).

Meanwhile, environmental groups were having great success at galvanizing opposition to WIPP. Much of the local opposition was centered in Santa Fe; the Energy Department planned to use the town's busy St Francis Drive for nuclear waste shipments originating from Los Alamos National Laboratory. The department assured residents that "Santa Fe would see relatively few WIPP shipments, and those that would pass through town were expected to employ an as yet un-built highway bypass." Perhaps unsurprisingly, "such arguments failed to take into account the fact that the public

perceived radioactive materials as posing especially unique threats" (McCutcheon, 2002: 114).

Despite the public opposition to WIPP, pressure from Idaho Governor Andrus finally succeeded in getting the federal government's attention. In 1990, Energy Secretary James Watkins announced that WIPP would open for a "test phase" and asked the Department of the Interior to administratively transfer the WIPP site to the Energy Department, bypassing congressional action. On October 3, 1991, Watkins notified Governor King that WIPP was ready to open within seven days—without any effort to garner the state's approval (Hancock, 2010).

Less than a week later, New Mexico Attorney General Tom Udall filed a federal lawsuit seeking to block WIPP's opening. Environmental advocacy groups, Texas Attorney General Dan Morales, and New Mexico Congressman Bill Richardson joined the lawsuit. In December, US District Judge John Garrett Penn granted a preliminary injunction to prohibit storing waste at WIPP.

As it had a decade earlier, Congress stepped in to break the impasse, passing the WIPP Land Withdrawal Act. Sponsored by now-Senator Bingaman, the 1992 law set a number of regulatory limits on what kinds of waste could be stored at WIPP, and how that waste was to be transported. It also authorized the federal government to pay New Mexico $20 million a year for 14 years. But perhaps the most important part of the new law granted the EPA authority to set standards for the management and disposal of waste at WIPP, addressing concerns that the Energy Department could not be trusted to "self-regulate."

In October 1993, the Energy Department—now under EPA oversight—announced an end to efforts to proceed with a WIPP "test phase." In 1995, Idaho and the Energy Department announced an agreement that required waste shipments from Idaho to begin by April 1999, and for 65,000 cubic meters of transuranic waste to be shipped to WIPP or another disposal site by no later than the end of 2018.

WIPP won EPA approval in May 1998 (Federal Register, 1998). This success can largely be credited to Clinton administration Energy Secretary Hazel O'Leary and her Deputy Chief of Staff and Chief Environmental Counsel Dan Reicher, who was very aware of the project's checkered history. He'd been a Natural Resource Defense Council attorney on the 1991 litigation that stopped WIPP's "test phase," and he understood that independent verification of the project's safety would be key to garnering state and public approval. "My view when it comes to controversial facilities like this is, take your time," Reicher said. "We're talking thousands and thousands of years. Take your time with the process, with the science, with analysis. Part of what we added to this was, we did take more time, because there were all sorts of political pressures from various states, but there really was no rush" (McCutcheon, 2002: 171).

Polling data supports this belief. Only 26 percent of New Mexicans supported WIPP in 1980, but by 1998 approval had grown to 49 percent, with 46 percent in opposition (McCutcheon, 2002). As Rip Anderson, who had long worked on the WIPP project as a scientist at Sandia National Laboratories in Albuquerque, noted, "Before WIPP opened, people

needed to be assured and educated that every aspect was completely safe" (Cravens, 2007: 329).

Part of that assurance and education came from a group organized in 1978. Given the early controversy over WIPP's purpose, a lack of scientific clarity about what the project would entail, and a question as to how the facility would be deemed safe enough to handle its mission, the Energy Department formed the Environmental Evaluation Group (EEG). The EEG—a state and federally funded, quasi-independent scientific evaluation group—would prove valuable as the project moved forward, its third-party scientists providing the public with a degree of trustworthy expertise that the Energy Department, because of its vested interest in the project, could not.

The state made a last-ditch legal effort to block WIPP's opening in 1999. But the federal courts sided with the Energy Department and the EPA. The ruling removed the final roadblock for WIPP, allowing Energy Secretary Bill Richardson—who had successfully fought for independent EPA environmental oversight of the project as a congressman—to send the first shipment of waste to the repository from Los Alamos on March 25, 1999. "As an issue, WIPP faded after the EPA [certification], and I am convinced it's not a very important political issue or environmental issue in New Mexico," Richardson said (McCutcheon, 2002: 137). The fact that Richardson would later be elected governor of New Mexico by the largest margin in the state's history supports this political calculus.

As of July 2011, WIPP had received 9,776 shipments and more than 76,000 cubic meters of waste (Washington TRU Solutions LLC, 2011). The lion's share of waste shipments to WIPP have come from the Idaho National Laboratory, the Rocky Flats Site, the Savannah River Site in South Carolina, and the Los Alamos National Laboratory.

Lessons learned and suggestions for other sites

Had the Energy Department not abandoned its on-again/off-again plans to dispose of high-level waste (as opposed to solely defense-related, transuranic waste) in WIPP, the facility would likely not be the success it is today. Nevertheless, the WIPP permitting process still holds myriad lessons that could inform and improve efforts to create spent fuel repositories in Canada, Sweden, Finland, France, South Korea, Japan, China, and, yes, the United States. The following recommendations are based to a large degree on democratic processes, and therefore many may be more applicable to Western-style democracies than to China.

Local support is essential

"From the start, support in Carlsbad that was rooted in economic anxiety gave an essential impetus to the project" (McCutcheon, 2002: 194). Local support for WIPP helped push the project along at several key junctures when controversies in Santa Fe or Washington threatened to derail it. According to the US Census Bureau, New Mexico has the nation's fifth highest rate of people living in poverty. New Mexico's economy is also highly reliant on federal government spending, especially nuclear weapon development, ranking number

one in the nation for federal spending per federal tax dollar (The Tax Foundation, 2007). Despite the high rate of poverty overall, this federal spending creates pockets of prosperity, especially in Los Alamos County (ranked number one in New Mexico and 18th in the nation for per capita income) and, to a lesser extent, in Carlsbad's Eddy County (New Mexico's ninth highest per capita income since WIPP was established). Therefore, WIPP's local boosters had good reason to see the project as an economic bonanza for the area. In an area with relatively disadvantaged and unstable economic prospects, one of the best and most proven methods of economic development was government spending. One of the key reasons for the failure to create a waste storage facility at Yucca Mountain is the lack of this local support. As former EEG member Lokesh Chaturvedi put it: "The primary lesson from the cancellation of the Yucca Mountain project is that public support for complicated large projects is paramount" (Chaturvedi, 2010: 2).

Applicants must be transparent and trustworthy

Time and again in its efforts to open WIPP, the Energy Department put expediency ahead of honest, transparent dealings with state officials. This fostered an air of distrust that left the state and its residents concerned about whether the promises would be kept. This credibility gap led directly to state lawsuits and adversarial relationships that likely added years to the approval process.

Don't underestimate the time required

South Korea, Japan, and to a lesser extent China all appear to be proceeding with plans to reprocess spent nuclear fuel—rather than dispose of it—in the mistaken belief that it will buy them time to address the waste problem at a later date. Unfortunately, this short-sightedness is robbing them of the time needed to fully address the complex and time-consuming issue of creating a nuclear waste repository site. Reprocessing or no, one thing is certain: Each country will ultimately need to find a way to dispose of its waste. As Chaturvedi stated to the Blue Ribbon Commission on America's Nuclear Future on July 7, 2010, "Geological repository or repositories will be needed to dispose spent nuclear fuel and defense high-level waste even if large-scale reprocessing (plutonium producing or 'proliferation resistant') is undertaken, because the 'closed fuel cycle' remains a mirage" (Chaturvedi, 2010: 2).

South Korea has recently halted its public-consensus process in order to seek "expert opinion" first (Kang, 2010). Both are needed, but both could easily and productively proceed on parallel tracks. Given that the more limited WIPP facility took the better part of three decades to go from planning to approval, South Korea may want to act more efficiently. China, promisingly, appears to be taking a more well-thought-out approach, with a geologic repository slated to be operational by 2050 (Yun, 2010). But even this timeline may prove to be too aggressive if the politically and radioactively "hotter" issue of high-level waste is under consideration.

Forever is a long time. Don't skimp on the incentives

First in 1989 and then again in 1990, 1991, and 1994, local opposition forced the Korean Atomic Energy Research Institute to scrap plans for a series of proposed repositories (Park et al., 2010). These controversies led the South Korean government in 2005 to agree to a series of economic incentives and regulatory limits in exchange for local agreement on a low-level waste site in Gyeongju in the southeastern part of the country. Economic incentives and regulation may in fact be necessary concessions for any repository approval process. But the high cost of the facility's local economic incentives (almost $500 million at capacity) and construction costs ($1.5 billion) have the country's leaders worried about the potential costs for a disposal site for more highly radioactive material, and they have sought "other alternatives" (Park et al., 2010: 3). If the WIPP experience is any guide, these "other alternatives" will only end up costing taxpayers more money and further draw out a long and involved process.

The half-life of plutonium is 24,000 years; communities that host nuclear waste repositories will have to live with them essentially forever. The level of economic incentives offered by repository planners should therefore be commensurate with the extremely long duration of the commitment. South Korea appears to be short-changing radioactive waste host communities by not offering any infrastructure investments on top of other incentives. Not surprisingly, this has led to difficulties in getting local support for increased storage. However, Jungmin Kang has found that local populations could support additional storage "if their safety is assured and the local sites are properly compensated financially" (Kang, 2010: 20). As McCutcheon wrote of the WIPP experience: "Money, training and other forms of compensation are essential. The [Energy Department] did little early on to ensure New Mexico would receive such benefits and paid a political price" (McCutcheon, 2002: 195).

Public expectations have changed. Applicants must keep up

As geologist and Blue Ribbon Commission member Allison MacFarlane recently noted in a public presentation, the days of nuclear siting authorities following the "decide, announce, defend" tack are over (MacFarlane, 2010). Although the public during World War II and the Cold War may have been willing to accept "national security" as an unquestionable reason for the government to proceed with large-scale projects, citizens now expect multiple opportunities to review, question, and comment.

As New Mexico Environment Secretary Ron Curry noted in his testimony to the Blue Ribbon Commission last year, "These [public participation] processes give local communities a voice in decisions that can otherwise feel imposed on them by Washington" (Curry, 2010). Unfortunately, the United States did not heed this lesson at Yucca Mountain.

Exclude NGOs at your own peril

Transparent public processes also give ample opportunities for environmental groups and other nongovernmental

organizations (NGOs) to participate and often improve governmental proposals. Don Hancock of the Southwest Research and Information Center has been involved with opposition and criticism of the WIPP project since the 1970s. In response to repeated questioning from Hancock about the scientific validity the WIPP project, the Department of Energy often ignored him or tried to limit his participation. This only prompted more questioning from Hancock and promulgated an air of scientific uncertainty around WIPP. Since then, state regulators in particular have welcomed Hancock into permitting decisions at early points in the process. While this does not mean that there will be consensus, it does create a less adversarial (and often shorter) process. As Curry has said, "While many members of the public may never agree to support nuclear waste disposal, a public and transparent process allows for a valuable exchange of information that fosters a more trusting relationship among the various interests" (Curry, 2010).

Independent oversight and authority provide reassurance

In creating and funding the Environmental Evaluation Group, the Energy Department smartly realized the limitations of its own scientific trustworthiness with the public and sought to set up a third party to settle disputes. Complicated approval processes with incredibly long time horizons (10,000 years in the case of WIPP) will inevitably result in significant scientific uncertainty. Groups like the EEG help give the public a degree of comfort that any scientific conclusions reached are the best, most impartial conclusions available—and not simply the most expedient.

State veto powers and abilities for independent regulatory authority provide an additional level of comfort. Curry noted this in his Blue Ribbon Commission testimony: "Independent and outside regulatory oversight and enforcement is vital to ameliorating the public's justifiable and entirely reasonable concern that the federal government can't be trusted with this task" (Curry, 2010). Curry's testimony is colored by the fact that the state's battles have continued in recent years as the Energy Department has unsuccessfully attempted to expand WIPP's mission to include high-level tank sludges from the Hanford Site in Washington state and commercial waste left over from its own failed reprocessing efforts at West Valley in New York (Hancock, 2010). This further highlights the need for the local regulatory authority to go beyond one-time-only veto power and to include ongoing oversight and enforcement capabilities.

Embrace the politics

In discussing the approval process for Yucca Mountain, MacFarlane has noted, "It is as much a political process as a technical process" (2010). And journalists Donald Barlett and James Steele have observed, "With the possible exception of the income tax, no other modern-day issue is so firmly mired in Washington politics as that of nuclear waste" (McCutcheon, 2002: 5). Both statements are undoubtedly true, but the link between nuclear waste policy and politics is not necessarily a negative. If wielded effectively, this political element can give local communities

another avenue for exerting control over siting and approval processes. Governor Andrus illustrated this brilliantly as he simply invented the crisis he needed to grab the Energy Department's attention. Japanese nuclear expert Masa Takubo recognizes and encourages this power: "Members of the Diet should also be more involved in the policy process and held accountable for the decisions made concerning (waste) reprocessing" (Takubo, 2008: 89). Such a move, if implemented, could help better educate the Japanese populace about nuclear waste plans and give them the ability to more effectively influence this policy.

Breaking the "Groundhog Day" cycle

Too often, when government officials are faced with complex, controversial, multistage approval processes, they overemphasize the uniqueness of their particular situation and neglect to learn from similar efforts in other parts of the country or world. This is a mistake: The WIPP experience—and some similar efforts in Europe and Asia—show that these situations have more in common than not.

MacFarlane recently commented, "There is nothing new with nuclear waste. History keeps repeating itself, like *Groundhog Day*" (2010). In the 1993 film, Bill Murray is doomed to continue reliving the same day until he breaks the cycle by learning to love. While no nation will learn to love nuclear waste, all nations have a responsibility to learn from past experiences to improve the repository process and its chances for success. Applicants and regulators need to learn to love the public approval process if they ever hope to break the nuclear waste impasse. It is only by accepting this process in its entirety—getting the public and nongovernmental organizations to the table early and often, submitting to strong local regulatory authorities, and accepting politics as inevitable and possibly useful—that society can move toward solving the nuclear waste issue.

References

Chaturvedi L (2010) *Disposal Subcommittee of the Blue Ribbon Commission on America's Nuclear Future*. Text of an invited presentation, 7 July.

Cravens G (2007) *Power to Save the World*. New York: Knopf.

Curry R (2010) *Blue Ribbon Commission on America's Nuclear Future. Summary of Statement*. 7 July. Available at: http://www.brc.gov/sites/default/files/meetings/attachments/secretarycurryblue_ribbonsummary.pdf.

Federal Register (1998) Vol. 63, May 18: 27354–27406.

Hancock D (2010) A perspective on the continuing WIPP experience. 7 July.

Kang J (2010) Spent fuel storage in South Korea. 11 October.

McCutcheon C (2002) *Nuclear Reactions*. Albuquerque, NM: University of New Mexico Press.

MacFarlane A (2010) *STEP Presentation*. Princeton University, 27 September.

National Academy of Sciences (1957) The disposal of radioactive waste on land. Available at: http://www.nap.edu/openbook.php?record_id=10294.

Park S, Pomper MA, and Scheinman L (2010) *The Domestic and International Politics of Spent Nuclear Fuel in South Korea: Are We Approaching Meltdown?* KEI Academic Paper Series, March.

Public Law 96-164 (1979) Section 213. Available at: www.cq.com/graphics/sal/96/sal96-164.pdf.

Takubo M (2008) Wake up, stop dreaming: Reassessing Japan's reprocessing program. *Nonproliferation Review* 15(1): 71–94.

Taylor B, Kinsella WJ, Depoe SP, and Metzler MS (2007) *Nuclear Legacies*. Lanham, MD: Lexington Books.

The Tax Foundation (2007) Available at: http://www.taxfoundation.org/research/show/22685.html.
Truman H (1947) Speech to Joint Session of Congress. 12 March.
US Census (1910) Available at: http://censtats.census.gov/cgi-bin/usac/usacomp.pl.
US Census (1920) Available at: http://censtats.census.gov/cgi-bin/usac/usacomp.pl.
Washington TRU Solutions LLC (2011) Available at: http://www.trusolutionsnm.com/WTS_Data.pdf.
Yun Z (2010) China's spent fuel management and fuel cycle scenarios. Available at: http://belfercenter.ksg.harvard.edu/publication/20230/chinas_spent_fuel_management_and_fuel_cycle_scenarios.html.

Author biography

Jon Goldstein recently completed a Master's degree in Public Policy with a certificate in Science, Technology, and Environmental Policy from Princeton University's Woodrow Wilson School of Public and International Affairs. Formerly, Goldstein served as a member of New Mexico Governor Bill Richardson's administration as cabinet secretary for energy, minerals, and natural resources; as deputy cabinet secretary of the New Mexico Environment Department, where he was elected chair of the Water Quality Control Commission and Mining Commission; and as New Mexico's state liaison with the US Nuclear Regulatory Commission.

From: hplgroot@kcbx.net
Sent: Thursday, October 27, 2016 5:04 PM
To: Consent Based Siting
Subject: Response to IPC

As a Clinical Psychologist and Social Scientist I find your "Consent based Siting" efforts an embarrassment to social science and the public at large. Have you employed any real scientists, independent ones, to design this project? Who are they? Are they respected in their field? Have they published? Have they surveyed public sentiment on matters of importance?

Isn't the question of what to do with long-lasting nuclear waste important enough to ensure that the real public opinion is established, and that the best possible long-term care is ensured?

Henriette Groot, PhD

From: KarenD Hadden [karendhadden@gmail.com]
Sent: Sunday, October 30, 2016 8:40 PM
To: Consent Based Siting
Subject: SEED Coalition comments: RE: Consent-Based Siting Summary of Public Input Draft Report
Attachments: SEED Coalition Comments to DOE - RE- Consent Based Siting Report - Oct. 2016.docx

Dear DOE,

Here are our comments regarding the Consent-Based Siting: Designing a Consent-Based Siting Process Summary of Public Input Draft Report Sept. 15, 2016.

Please reply to let me know that these comments have been received. Please include me on any email notices regarding the ongoing DOE Consent-Based Siting Process.

Thank you,

Karen Hadden
SEED Coalition
605 Carismatic Lane
Austin, TX 78748

karendhadden@gmail.com

512-797-8481

SEED Coalition and No Nuclear Waste Aqui Comments – Oct. 30, 2016

In Response to Draft Report: Designing A Consent-Based Siting Process, Summary of Public Input

Dear U.S. Department of Energy,

These comments are being submitted on behalf of the Sustainable Energy and Economic Development (SEED) Coalition, a non-profit environmental organization based in Texas, with 2500 members, and the No Nuclear Waste Aqui network, which includes individuals and organizations in Texas and New Mexico. Several of our members attended the Tempe meeting, at great expense. Everyone had to fly to the meeting since it was too far to drive. It's 743 miles to Tempe from Andrews, Texas. Former State Rep. Lon Burnam from Ft. Worth, Humberto Acosta from Andrews, Rose Gardner from Eunice and Noel Marquez from Artesia, NM, and I joined others from New Mexico at the Tempe meeting. I was also able to attend the Minneapolis meeting and listened to several other meetings through internet.

We stand by and re-emphasize the points made in our previous comments. Now having read Designing a Consent-Based Siting Process - Summary of Public Input Draft Report, we remain more concerned than ever about the DOE Consent Based Siting Process.

#1) It is simply the wrong way to approach siting a nuclear facility of any kind. **Science and only science should come first, extensive research that tells us what is the safest site for permanent storage of waste.**

A large reason for the failure of Yucca Mountain was that the decision was based on politics, not science. Now DOE is trying to do the same thing again.

It is massive ENVIRONMENTAL INJUSTICE to target largely Hispanic communities in Texas and New Mexico that are unable to defend themselves against this most serious onslaught.

#2) Texas and New Mexico are being ganged up on by the DOE. Holding hearings all around the country, while avoiding our states like the plague is unconscionable. Could you not find us on the map? This incredible glaring omission speaks volumes about the fact that DOE is giving lip service but is totally insincere about real community involvement. It's obvious and well-known that Texas/ New Mexico sites are the leading sites being considered for Consolidated Interim Storage. WCS submitted their application in April and DOE representatives knew this, yet there was a pretense that the siting process was being done in a vacuum. What massive hypocrisy!

It appears that DOE was trying to get other states to agree collectively to dump on Texas/ New Mexico and that DOE was painting the false picture that consent has been given here. A vote by Andrews County Commissioners does NOT represent consent. Andrews residents have not been in favor of hosting high-level radioactive waste when

asked, and many did not know that County Commissioners had voted.

#3) Our viewpoints were not adequately relayed or taken into consideration in the Summary of Public Input. The DOE is clearly not hearing the voices of those most concerned, most opposed and most at risk.

#4) No mention was made in the Summary Report that Texas Legislators submitted comments in opposition to the DOE Consent-Based Siting approach and the targeting of Texas/ New Mexico for high-level radioactive waste storage.

#5) Comments solicited throughout the country during meeting process have been generated under the pretense that there is no targeted region and that an inclusive process would actually be followed. **The exact opposite of these supposed goals is already happening. Comments generated under this pretense must not be used for the purpose of siting a consolidated waste site in our backyard.**

A videotape of Secretary Moniz played at Consent-Based Siting meetings featured him saying that no site had been selected. **No site has been licensed, but Secretary Moniz failed to acknowledge that the Southwest region has been targeted, that a license application has been submitted to the NRC by WCS, and that an application by Eddy Lea Energy Alliance for a New Mexico site is anticipated soon. For the sake of honesty and transparency, DOE officials at the meetings should have clarified or updated Moniz' statements at the start of each meeting, so people would know what is really at stake. It took citizen participation to even raise the issue of the WCS application, as if the situation didn't even exist. None of this important was discussed in the Summary of Public Input, although we clearly raised this issue orally and in written comments.**

#6) **It appears that the DOE did not hear clearly what many commenters were trying to get across. There is no such thing as consent when no one knows what they're being asked to consent to, such as radiation release risks, potential accident and terrorist threats, transportation routes, guarantees that waste would not be dumped forever at a consolidated storage site, etc.**

Consent must be informed consent, and nothing close to it is underway.

Additional Comments:
Decommissioning nuclear power plants should involve storing the waste onsite, or as close as possible, in aboveground, monitored, retrievable hardened on-site storage facilities and each site must become the repository for the waste that was produced there. The construction and monitoring of these waste storage facilities will provide a new sector of job opportunities as well as be the most cost effective option for taxpayers, both in the short and long term.

No long-term radioactive waste disposal has been found within the US, because there is no good answer. DOE has spent too many decades in denial of this enduring and obvious truth and it now must be immediately addressed head-on, honestly and logically

– using science, not political pressure.

WE DO NOT CONSENT: Texas and New Mexico DO NOT WANT HIGH-LEVEL RADIOACTIVE WASTE!
No soft words, no listening attitude or sympathetic voices at the DOE can make the plan to dump the nation's nuclear waste on the Texas / New Mexico border region acceptable.

We are not a wasteland. We are not a dumping ground and we DO NOT CONSENT to having high-level radioactive waste dumped in Texas or New Mexico. We oppose transport of this waste on our railways, highways or waterways for this purpose.

The DOE's efforts to minimize opposition, to appear to be understanding and listening, and to use the guise of "consent" to gather support from other states for shipping off their radioactive waste is deplorable and deceptive. It is a thinly veiled effort to build alignment to dump it on us.

Texas and New Mexico are Radioactive Waste Targets
Everyone involved in hosting DOE Consent-Based Siting meetings knows and has known for a long time that the Texas/New Mexico region is targeted for consolidated storage of high-level radioactive waste, and that references to the region were included in the 2012 report of the Blue Ribbon Commission on America's Nuclear Future.

Yet there has been an outrageous basic pretense at the heart of all of the DOE Consent-Based Siting meetings. Statements such as "we haven't picked a site," are not really true. Transparency has been lacking about this very basic fact. Our region is definitely being targeted and this must be acknowledged by the DOE, minus claims that we want the waste. WCS' consolidated interim storage application was submitted to the NRC on April 28, 2016. Many pre-application meetings were held, yet throughout the series of Consent-Based Hearing meetings DOE officials ignored the fact that the licensing process is underway, acted as if NRC actions are none of their business (WHAT?) and tried to make a case that isn't relevant. The license application process is happening and is 100% relevant to the DOE's "Consent-Based Siting" concept.

DOE has already spent a great deal of time and money to suck people into talking about how "consent" should be obtained, as if such a process would be ready in time to impact a real siting process and would actually be followed. **It's already way past the point where the potential host communities should be asked for input. Getting people to talk about "consent" as if it were real and any community would ever want radioactive waste is a cover-up for the real goal of aligning communities to dump on another region.**

As mentioned earlier, the NRC license application process is already underway for WCS, and another application will be submitted soon by ELEA in New Mexico.

Discussion of "consent" is already a farce for these targeted communities. Licensing could potentially be completed before the "consent" process is finalized, eliminating any

real local opportunity to give or deny consent. The DOE will soon be using pressure tactics based on the DOE Consent-Based Siting effort to generate national pressure.

Statements made at some meetings gave the false impression that Texans wants radioactive waste - to which we strongly object. There was a resolution passed by Andrews County in 2015 supporting WCS' efforts for consolidated storage, but this single vote does not necessarily represent the voice of the local people, many of whom had no idea such a vote was to take place.

Had DOE held even a single public meeting in Texas or New Mexico, they might have learned that many people do not agree with the County Commissioners and are opposed to radioactive waste storage or transport for the purpose of storage.

They would have heard many voices saying that we DO NOT CONSENT in the states most targeted for nuclear dumping.

In fact, the Texas Democratic Party passed a resolution and included language in the 2016 Party Platform that opposes consolidated high-level radioactive waste storage and transport through the state for this purpose. This represents many thousands of voices, not just a few voices in a county that stands to benefit financially by storing high-level waste.

Those most at risk for impacts have been disregarded in the DOE siting process so far. There was no inclusiveness and no conversations with the community here at ground zero, making a mockery of the so-called "consent process."

Based on the "Near-term steps for the consent-based siting initiative" the DOE plans to use input from these non-Texas/ New Mexico meetings for "engaging with potential host communities" and "working with "potential host communities." **It appears that the only conversations with Texas and New Mexico will be those yet to come when DOE tries to stuff consent to radioactive waste dumping down the throats of those who never had a voice in the first place and were never asked for input.**

DOE's failure to schedule even a single meeting in either state shows contempt and utter disregard for those most likely to get dumped on. After a meeting in Washington, D.C., eight meetings were held elsewhere around the country, in in Boston, Denver, Sacramento, Atlanta, Chicago, Boise, Minneapolis and Tempe. Is the DOE's meeting process an effort to get people elsewhere to gang up against our region and then feel good about sending their waste our way because there is supposedly consent? While extensive lip service has been given to being inclusive and involving people early on in the process, the exact opposite is already happening. Rules and policies based on this "consent-based siting" process and the meetings held are likely to be unfair, inappropriate and designed to lead to radioactive waste dumping in our region.

This map of locations for DOE meetings tells the whole story. The big gaping hole where no meetings were held includes Texas and New Mexico. We are willing to provide a better map as perhaps the agency had a hard time finding us. There was no

good answer when Mr. Kotec was asked at the Tempe meeting why these locations were chosen, and why no meeting was held in Texas or New Mexico.

No "Consent" to Radioactive Waste / Environmental Injustice

One speaker at the Tempe meeting pointed out that no one wants radioactive waste in their backyard. The federal government knows this. In 2012, the Blue Ribbon Commission on America's Nuclear Future came out with a plan to get communities to "volunteer" to take dangerous radioactive waste from around the country.

There is really no such thing as "consent" when it comes to radioactive waste storage. No one wants it. "Consent" can only be forced and coerced, obtained through bribes and political pressure. Manufactured consent is not real consent and no community should be conned into needlessly taking on this deadly legacy.

We agree with Fairewinds Energy Education comments "**that such a process (DOE's) is biased against communities struggling financially due to factory closings and the global economy. Choosing an atomic waste dump is tempting to towns and villages so anxious to increase short-term income and economic survival that they are willing to sacrifice long-term environmental damage in return for that income. At its heart, the *consent based process* is an environmental justice violation as well as a DOE method to avoid finding an appropriate scientifically viable site to dump by foisting it on impoverished citizens who will not mount a protest."**

Dumping radioactive waste on largely Hispanic communities with few resources to fight back would be extreme environmental injustice. Many local people have only recently become aware of the plans to dump radioactive waste on them and are beginning to fight back.

The largely Hispanic communities in the region, such as Andrews, Texas and Eunice, New Mexico, don't benefit from nuclear energy produced in other regions around the country. There is no justice in burdening them with having cancer-causing radioactive waste stored in their backyard, posing threats to their health and safety. Some attendees at the Tempe meeting were quite unhappy about comments to the effect that it is their patriotic duty to do so. It is not.

Over 2,000 people in Texas and New Mexico have signed petitions saying that they DO NOT CONSENT to having radioactive waste from the nation's nuclear reactors stored in their backyard.

We ask that DOE refrain from portraying people in Texas or New Mexico as wanting to accept radioactive waste. **There has been no vote in any public election in any potential host county.**

Eunice, New Mexico is the city closest to the site where WCS wants to consolidate high-level radioactive waste. Rose Gardner lives in Eunice, and had the following to say;

> "On July 4, 2016 I went and collected nearly 80 signatures at the Eunice NM Park 4th of July event. It was very easy, my petition was for a NO CONSENT to high-level waste in Texas and NM. I collected these signatures in less than 2 hours. Would you like me to continue and collect signatures or will you come to Eunice NM and see how the community feels about your siting program. We oppose the transportation of high-level nuclear waste and the interim storage of this waste. It is senseless, people do not want it here."

It reads: "**We support… halting the plan to import high-level radioactive waste for consolidated storage in Texas due to risks of water contamination, security concerns and transportation accidents, and we oppose transport of high-level radioactive waste on our highways or railways."**

The number of voters in the Democratic Primary in 2016 was 1,435,895, so over a million people are represented by this party platform, people from throughout the state and not just in Andrews County, where five people whose county stood to make a profit signed a resolution.

Four Texas Senators are sending comments to you regarding this important issue as well, including Senators Whitmire, Menendez, Watson and Rodriguez. They represent Houston, San Antonio, Austin and El Paso.

No Financial Bribes to influence "Volunteer" Communities

The financial incentives discussed by DOE for "volunteer host communities" should not be sought from Congress or utilized at all. It is inappropriate to use public funds to "help people understand" the risks. Such funding would no doubt end up being used for propaganda minimizing the reasonable and justifiable concerns people that people should have regarding the dangers of radioactive waste, health risks and risks of contamination to their land and water, and would not be a source of reliable

information.

In short, these incentives would be nothing but a bribe. Statements made by various people at DOE meetings that local people would need resources to help them "understand" radioactive waste issues and not be afraid. This is insulting and degrading. The communities most likely to get dumped on are largely Hispanic and not wealthy. They are plenty smart and increasingly aware that the radioactive waste that could soon be dumped on their community can cause cancer, genetic damage and deaths. They know that accidents, leaks or terrorist actions could lead to contamination of the homes, land and water. They are also smart enough to know when they are being lied to and bullied. They do understand that they're being targeted and are asking questions such as, "If this radioactive waste is so safe, why not keep it right where it is? And since when is it the patriotic duty of people here in Texas/ and New Mexico to be the nation's nuclear waste dumping ground?"

Consolidated Storage is Not Necessary

There is no need to consolidate radioactive waste for the purpose of storage. Any shipment of this cancer-causing waste should happen only once, and only to a permanent repository, if sound science can identify a site that might be able to isolate waste safely for over 250,000 years. The Nuclear Regulatory Commission has previously said that the least risky option is to keep the waste stored securely at or close to the site of generation, and most nuclear reactor sites now have ISFSI licenses that allow dry cask storage onsite.

Additional specific answers

1) How can the Department ensure that the process for selecting a site is fair?

There has been nothing fair so far about the Consent-Based Siting meetings, so it is hard to conceive of any way that the process can become fair. There might have been a shot at fairness if DOE had hosted the first meetings in Texas or New Mexico, but the targeted states were completely disregarded.

Consent-based" siting makes no sense to begin with. The decision of a site for high-level radioactive waste should not be based on political will in the first place, but on years of scientific research. The decision should be based on sound science, not on a political determination regarding which community can be most easily coerced into "volunteering." The necessary scientific research has not been done. $15 billion was spent on Yucca Mountain but the site was still not adequate to isolate waste effectively for millions of years.

The decision to locate a repository in Nevada was a political one, not a science-based decision.

DOE is currently making a huge and potentially expensive mistake by following the same path once again, pursuing a political approach instead of one that is science-based.

2) What models and experience should the Department use in designing the process?
The 2012 report of the Blue Ribbon Commission on America's Nuclear Future suggested using the successful approaches used in Texas and New Mexico, where WCS has a low-level radioactive waste site and the WIPP site has been accepting TRU waste for 15 years.

The WIPP site accident with exploding waste barrels was much more serious than speakers at DOE meetings relayed, and 23 workers were exposed to radiation. Plutonium and Americium were tracked 26 miles away. This site was supposed to be the gold-star standard where nothing could go wrong. Until it did. Then everything seemed to go wrong all at once and reports found that the WIPP safety culture had eroded. It became worse during the time when the site was seeking to expand to take the high-level radioactive waste from commercial reactors around the country.

The BRC report references broad local and state support for the WIPP site. Janet Greenwald asked panelists at the Tempe meeting if they'd ever asked themselves why there didn't appear to be opposition to the WIPP site. No one responded, so she continued, letting panelists know that a lead opponent to the site was extensively harassed. Then her beloved horse was shot in the head.
Bill Addington was also harassed and had his lumberyard burned down when he opposed a low-level radioactive waste dump proposed for Sierra Blanca, Texas.
We do not recommend the approach of forcing "consent" by attacking opponents.

3) Who should be involved in the process for selecting a site, and what is their role?

If the plan to transport radioactive waste for consolidated storage does move forward, **people in any host county or in any county through which radioactive waste would be transported should be able to vote on whether or not to "consent," and not have state or local political leaders speak for them on this crucial health and safety issue. These are the people most at risk.**

Those living near aquifers that could become contaminated should be able to vote as well.

Interests that stand to benefit from high-level radioactive waste storage, such as the license applicant, contractors and utilities, should be prohibited from expending funds to influence the elections.

Consent should never be given based on the vote of County Commissioners in a single county, especially one that has the potential to profit from importing high-level radioactive waste.

Public officials should not speak for the people regarding this issue. They should speak for themselves through elections. This decision will have impacts for nearly all of eternity. Too often people feel that their government does not

represent their views. Campaign contributions and corporate deals should not outweigh the voice of the people.

4) What information and resources do you think would facilitate your participation?
Is this a serious question? How about reimbursement for the several thousand dollars spent so far by concerned citizens in Texas and New Mexico who had to travel to Tempe, Arizona to have their voices heard in person with the DOE since no meeting was held in either of our states.

5) What else should be considered? This question is addressed thoroughly in our General Comments.

As mentioned previously, the questions that should have been asked are as follows:

- Would your state or community consider consenting to having consolidated storage or permanent disposal of high-level radioactive waste? Are there prohibitions against it?
- Are citizens in your region opposed to high-level radioactive waste consolidated storage or disposal? Do political leaders voice support against the wishes of many people in the community?
- Is a Consent-Based Siting a valid or useful concept, or merely a way to once again base siting on political decisions instead of sound science?
- Should financial incentives funded by taxpayer dollars be utilized?
- Is there really such a thing as “Consent” when it comes to consolidated radioactive waste storage or permanent disposal? Is a “consent” process even advisable as opposed to scientifically researching the least risky approaches for storing and disposing of high-level radioactive waste?

In summation, we do not want high-level radioactive waste in Texas or New Mexico. We do not consent. DOE failed to come to Texas or New Mexico, showing utter disregard for the voices of people here and for the thousands of lives that may be impacted.

The DOE has previously stated that if a person is exposed to high-level radioactive waste without shielding, from a meter away, they will be immediately incapacitated and die within a week. This is from waste that has already been in spent fuel pools for ten years.

In a March 2014 report, the Texas Commission on Environmental Quality (TCEQ) acknowledged the vulnerability of radioactive waste to sabotage during transport, and that “consequences due to sabotage or accidents are also higher during transport since the waste may be near population centers.” We don’t need terrorist incidents in Dallas/ Ft. Worth, Houston, San Antonio or El Paso.

There would be accidents if this waste came to Texas. A previous DOE study calculated that the 53,000 truck shipments originally anticipated to go to Yucca Mountain (if transport was mainly by truck) would likely have resulted in 53 accidents. Train accidents were anticipated at a rate of 1 in 10,000 shipments. At least one train accident was expected to occur if transport was mainly by train. A West Texas train accident this summer involved a head-on collision of two trains that claimed three lives and it took over two weeks to clear the debris. Imagine if this train had been carrying high-level radioactive waste.

Importing high-level radioactive waste might further enrich the family of a Dallas billionaire, but millions of Texans and people along transport routes throughout the country would bear the financial and health risks of accidents or sabotage.

There is no good reason to transport this deadly waste across the country and we will fight like Texans and New Mexicans to protect our land, health and safety. Deaf Smith County was once considered a site for high-level radioactive waste before Yucca Mountain was chosen. Texans fought hard to defeat the proposal for our state and they will do so again.

I will close with one final thought about consent. Consent is a concept in many walks of life. If a young man wants to have sexual relations with a woman he loves, she would be the person to ask if she consented, not eight of his friends.

By the same token, it is not appropriate to ask people in eight other states about a consent issue that involves the targeted states of Texas and New Mexico.

Thank you for your consideration of these comments and your response would be appreciated.

Karen Hadden
Executive Director
Sustainable Energy & Economic Development (SEED) Coalition
605 Carismatic Lane, Austin,Texas 78748

512-797-8481 karendhadden@gmail.com


NO CONSENT!
NO to High-Level
Radioactive Waste!
NoNuclearWasteAqui.org

From: Bob J. Halstead [mailto:bhalstead@nuc.state.nv.us]
Sent: Thursday, October 27, 2016 5:34 PM
To: Consent Based Siting <consentbasedsiting@hq.doe.gov>
Cc: Shawnee J. Hughes <sjhughes@nuc.state.nv.us>; Maser, Paul <Alert> <pmaser@nuc.state.nv.us>; Griffith, Andrew <ANDREW.GRIFFITH@nuclear.energy.gov>; Bates, Melissa (HQ) <Melissa.Bates@Nuclear.Energy.gov>; Bickford, Erica <Erica.Bickford@Nuclear.Energy.Gov>
Subject: Comments on Draft Report - Designing a Consent-Based Siting Process: Summary of Public Input

Attached are comments submitted by the Nevada Agency for Nuclear Projects in response to the September 15, 2016 Federal Register notice.

Best, Bob

Robert J. Halstead
Executive Director
State of Nevada - Office of the Governor
Agency for Nuclear Projects
775.687.3744

BRIAN SANDOVAL
Governor

STATE OF NEVADA

ROBERT J HALSTEAD
Executive Director

OFFICE OF THE GOVERNOR
AGENCY FOR NUCLEAR PROJECTS
1761 E. College Parkway, Suite 118
Carson City, NV 89706-7954
Telephone (775) 687-3744 • Fax (775) 687-5277
E-mail: nwpo@nuc.state.nv.us

October 27, 2016

U.S. Department of Energy
Office of Nuclear Energy
Draft Consent-Based Siting Report
1000 Independence Ave, SW
Washington, DC 20585

These comments are submitted by the State of Nevada, Agency for Nuclear Projects, in response to the U.S. Department of Energy (DOE) Request for Public Comment on the draft report entitled: Designing a Consent-Based Siting Process: Summary of Public Input, published in the Federal Register, September 15, 2016.

As we stated in our previous letter dated July 28, 2016, DOE's new interest in consent-based siting does not change Nevada's opposition to Yucca Mountain. Governor Brian Sandoval has clearly stated that Nevada will not consent to storage or disposal of spent nuclear fuel or high-level nuclear waste at Yucca Mountain. This site is unsafe for commercial and defense high-level nuclear wastes, whether combined in one repository, or disposed separately. Nevada supports the development of a consent-based siting process for nuclear waste storage and disposal facilities to find workable alternatives to Yucca Mountain.

We appreciate the process that DOE has followed thus far to incorporate public input on designing a consent-based siting process for nuclear waste facilities. Our comments on the draft report today apply to the two tasks planned for December 2016, discussed on page 72 of the draft report.

In developing an initial draft of a consent-based siting process, DOE should be thinking now about the written consent agreement that will be required at the end of that process. We believe DOE should recommend that Congress enact a new statutory basis for binding written agreements between DOE (or any other program-managing entity) and state, local and tribal governments that consent to host nuclear waste storage and disposal facilities. We urge DOE to support the approach taken in S.1825, The Nuclear Waste Informed Consent Act, legislation introduced in the 114th Congress by Senator Harry Reid and Senator Dean Heller. We believe the Secretary of Energy should be required to obtain written consent from any potential host state and county, adjacent county impacted by transportation, and affected Indian tribe, before expending any funds from the Nuclear Waste Fund for repository construction.

In developing a draft report on siting considerations for interim storage and geologic disposal facilities, we believe that new federal legislation will be needed to affirm the regulatory basis for the siting, licensing, operation, and closure of nuclear waste storage and disposal facilities. Both the final report of the *Blue Ribbon Commission on America's Nuclear Future* (2012) and the Administration's *Strategy for Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (2013) state that an important early step in the siting process is establishment of generic repository safety standards. The DOE draft report should include a commitment to early consultation with the Nuclear Regulatory Commission and Environmental Protection Agency on the urgent need for safety standards and regulations to support a new repository siting process that relies on early public confidence to make informed consent possible from potential host jurisdictions and communities.

Public input since December 2015 has clearly identified nuclear waste transportation impacts as a major area of stakeholder concern in facility siting. Transportation impacts should be addressed in both in the draft consent-based siting process and in the draft report on siting considerations. We believe that new federal legislation will be needed to address the radiological impacts and social impacts of transporting spent nuclear fuel and high-level radioactive waste. The National Academy of Sciences (NAS) Committee on Transportation of Radioactive Waste documented these radiological and social impacts and recommended comprehensive transportation safety and security measures to address these impacts in their report: *Going the Distance? The Safe Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States* (2006). The NAS findings and recommendations were adopted and endorsed by the BRC in 2012. With or without new statutory requirements, DOE should make a clear commitment to implement the transportation safety and security measures recommended by the NAS and the BRC before the commencement of any shipments of spent nuclear fuel or high-level radioactive waste to consolidated interim storage or disposal facilities.

Respectfully,

Robert Halstead
Executive Director

BRIAN SANDOVAL
Governor

STATE OF NEVADA

ROBERT J HALSTEAD
Executive Director

OFFICE OF THE GOVERNOR
AGENCY FOR NUCLEAR PROJECTS
1761 E. College Parkway, Suite 118
Carson City, NV 89706-7954
Telephone (775) 687-3744 • Fax (775) 687-5277
E-mail: nwpo@nuc.state.nv.us

October 27, 2016

U.S. Department of Energy
Office of Nuclear Energy
Draft Consent-Based Siting Report
1000 Independence Ave, SW
Washington, DC 20585

These comments are submitted by the State of Nevada, Agency for Nuclear Projects, in response to the U.S. Department of Energy (DOE) Request for Public Comment on the draft report entitled: Designing a Consent-Based Siting Process: Summary of Public Input, published in the Federal Register, September 15, 2016.

As we stated in our previous letter dated July 28, 2016, DOE's new interest in consent-based siting does not change Nevada's opposition to Yucca Mountain. Governor Brian Sandoval has clearly stated that Nevada will not consent to storage or disposal of spent nuclear fuel or high-level nuclear waste at Yucca Mountain. This site is unsafe for commercial and defense high-level nuclear wastes, whether combined in one repository, or disposed separately. Nevada supports the development of a consent-based siting process for nuclear waste storage and disposal facilities to find workable alternatives to Yucca Mountain.

We appreciate the process that DOE has followed thus far to incorporate public input on designing a consent-based siting process for nuclear waste facilities. Our comments on the draft report today apply to the two tasks planned for December 2016, discussed on page 72 of the draft report.

In developing an initial draft of a consent-based siting process, DOE should be thinking now about the written consent agreement that will be required at the end of that process. We believe DOE should recommend that Congress enact a new statutory basis for binding written agreements between DOE (or any other program-managing entity) and state, local and tribal governments that consent to host nuclear waste storage and disposal facilities. We urge DOE to support the approach taken in S.1825, The Nuclear Waste Informed Consent Act, legislation introduced in the 114th Congress by Senator Harry Reid and Senator Dean Heller. We believe the Secretary of Energy should be required to obtain written consent from any potential host state and county, adjacent county impacted by transportation, and affected Indian tribe, before expending any funds from the Nuclear Waste Fund for repository construction.

In developing a draft report on siting considerations for interim storage and geologic disposal facilities, we believe that new federal legislation will be needed to affirm the regulatory basis for the siting, licensing, operation, and closure of nuclear waste storage and disposal facilities. Both the final report of the *Blue Ribbon Commission on America's Nuclear Future* (2012) and the Administration's *Strategy for Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (2013) state that an important early step in the siting process is establishment of generic repository safety standards. The DOE draft report should include a commitment to early consultation with the Nuclear Regulatory Commission and Environmental Protection Agency on the urgent need for safety standards and regulations to support a new repository siting process that relies on early public confidence to make informed consent possible from potential host jurisdictions and communities.

Public input since December 2015 has clearly identified nuclear waste transportation impacts as a major area of stakeholder concern in facility siting. Transportation impacts should be addressed in both in the draft consent-based siting process and in the draft report on siting considerations. We believe that new federal legislation will be needed to address the radiological impacts and social impacts of transporting spent nuclear fuel and high-level radioactive waste. The National Academy of Sciences (NAS) Committee on Transportation of Radioactive Waste documented these radiological and social impacts and recommended comprehensive transportation safety and security measures to address these impacts in their report: *Going the Distance? The Safe Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States* (2006). The NAS findings and recommendations were adopted and endorsed by the BRC in 2012. With or without new statutory requirements, DOE should make a clear commitment to implement the transportation safety and security measures recommended by the NAS and the BRC before the commencement of any shipments of spent nuclear fuel or high-level radioactive waste to consolidated interim storage or disposal facilities.

Respectfully,

Robert Halstead
Executive Director

From: Don Hancock [sricdon@earthlink.net]
Sent: Wednesday, October 26, 2016 1:56 PM
To: Consent Based Siting
Subject: Comments on Summary of Public Input
Attachments: ANA_Consent-Based_Comments_07-28-2016.pdf

Although the attached comments of the Alliance for Nuclear Accountability (ANA) were submitted on July 28, there don't appear to have been included in the Summary report or in the "Responses" received document.

Please include them in the "Final" Summary of Public Input report.

The September 15, 2016 Draft Report also should be supplemented to include:
* Appendix B - links to whatever summaries/notes were taken in the meetings listed in section B.2 Additional meetings by request, except for the June 3, 2016 meeting in Wiscasset, ME (transcript is on the DOE website).
* Appendix B - links to whatever summaries/notes were taken in the meetings listed in section B.3 Meetings and conferences.
* Appendix C - links to the CES&S annual surveys and any reports therefrom.
* Information about the ECAST project, which is mentioned on page 8 of the Draft Summary Report, but that information is not readily available on the DOE consent website.

Thank you.

Don Hancock
Southwest Research and Information Center
PO Box 4524
Albuquerque, NM 87196-4524

Alliance for Nuclear Accountability

July 28, 2016

The Alliance for Nuclear Accountability (ANA) is a national network of organizations working to address issues of nuclear weapons production and waste cleanup. http://www.ananuclear.org/ Many ANA groups are neighbors of Department of Energy (DOE) sites and are directly affected by operations and contamination from those sites. Thus, we have a long history of dealing directly with DOE and its contractors and the nuclear wastes that have been created from nuclear weapons research, development and production for more than 70 years.

ANA opposes the generation of more nuclear or hazardous wastes because of the current and future harm they may cause to human health and the environment. ANA also recognizes that current "modernization" plans, which ANA opposes, include continuing nuclear weapons production for decades to come, along with the resulting waste and contamination. Creating unknown amounts and types of contamination also prevents the development and implementation of a comprehensive program for all waste.

Despite the burden of past contamination and insufficient cleanup efforts, DOE sites are being targeted for expanded missions, including storage or disposal of commercial spent nuclear fuel. The new DOE strategy apparently also targets DOE sites for the defense high-level waste repository. ANA does not consent to such proposals.

ANA strongly opposes Yucca Mountain, which was not selected through a technically sound, publicly accepted process. Thus, we agree with the State of Nevada and others that time and money on that site and its licensing should cease. Nevada's non-consent to Yucca Mountain should be recognized and respected. In any consent process, it is also essential to respect non-consent.

Instead, ANA supports interim stabilization and isolation of high-level waste and spent fuel as close as possible to the point of origin in a manner that maximizes

worker, public, and environmental protection. Thus, ANA opposes consolidated commercial spent fuel storage away from reactor sites, which is **dangerous** because of the additional handling and transportation, **expensive** because it adds its own unneeded costs, and **unnecessary** because waste can remain at existing locations for decades. For commercial spent fuel, on-site storage should be improved through Hardened On-Site Storage (HOSS), and storage must remain the legal, financial, and moral responsibility of the nuclear utilities that have created and benefited from it.

For defense high-level waste, solidification of liquid high-level waste is required, and in the meantime, additional double-shelled tanks must be built now at Hanford, WA, to replace leaking tanks. Workers at DOE sites must be adequately protected from hazardous and radioactive materials. Whistleblowers should be rewarded and protected, and should no longer be punished or lose their jobs. Compensation for those contaminated and cleanup of past contamination must be the priority.

The current DOE “consent-based siting process” is premature and should be terminated. Consent is not the law of the land. Thus, no federal law requires, or even allows, that the administration, Congress or the Courts give any status to any "consent" agreement for nuclear waste facilities. DOE sites have never been chosen by consent, and when communities do not consent to continued nuclear weapons missions, they are ignored. Congress must enact legislation that defines how free, prior, and informed consent can occur, including what legal or constitutional constraints prevent future congresses from overriding consent agreements or withholding funding. New legislation must define whether DOE or some other agency is responsible for commercial spent fuel and high-level nuclear waste disposal.

Before any repository siting process can begin, there must be a public process to develop the new technical standards, including before DOE could proceed with a defense high-level waste repository. In addition, Congress must provide for state regulatory authority over nuclear waste storage and disposal that includes robust public information, participation and judicial review requirements.

Thank you for your careful consideration of our comments.

Jay Coghlan, President
ANA Board of Directors

Alliance for Nuclear Accountability Groups -
Beyond Nuclear
Colorado Coalition for the Prevention of Nuclear War
Concerned Citizens for Nuclear Safety
Fernald Residents for Environmental Safety and Health
Georgia WAND (Women's Action for New Directions)
Hanford Challenge
Heart of America Northwest
Institute for Energy and Environmental Research (IEER)
JustPeace
Lawyers Committee on Nuclear Policy
Miamisburg Environmental Safety and Health
Movement for Nuclear Safety
Nuclear Age Peace Foundation
Nuclear Watch South
Nuclear Watch New Mexico
Oak Ridge Environmental Peace Alliance
Peace Action
Peace Farm
PeaceWorks Kansas City
Physicians for Social Responsibility
Portsmouth/Piketon Residents for Environmental Safety and Security
PSR Kansas City
Psychologists for Social Responsibility
Rocky Mountain Peace and Justice Center
Savannah River Site Watch
Snake River Alliance
Southwest Research and Information Center
Tri-Valley CAREs (Communities Against a Radioactive Environment)
WAND (Women's Action for New Directions)
Western States Legal Foundation
Women's International League for Peace and Freedom

From: Helen Hays [hlhays@ccgmail.net]
Sent: Thursday, October 27, 2016 3:52 PM
To: Consent Based Siting
Subject: storage sites for high-level radioactive waste

Dear DOE,

I am opposed to centralized interim storage sites (also referred to as permanent parking lot dumps), as well as permanent burial dumps, for high-level radioactive waste/irradiated nuclear fuel. In fact, your organization should not be in charge of nuclear fuel management or policy setting, considering your failures and betrayals of the public's trust over the decades. Most importantly, Native American communities must not be forced to locate waste dumps in their domain.

Thank you for considering my ideas,
Helen Logan Hays

From: marigayl@netzero.net
Sent: Saturday, October 29, 2016 1:05 PM
To: Consent Based Siting
Subject: Comment on establishment of sites for storage of spent nuclear reactor fuel:

Comment on establishment of sites for storage of spent nuclear reactor fuel:

(due October 30)

As a resident of New Mexico, which contains sites being considered for storage of extremely deadly, super radioactive spent reactor fuel, I fervently object:

I object to the continuing use of nuclear power, with all its attendant deadly dangers and its near-eternal creation of inconceivably lethal pollutants. It is time to decommission all nuclear power plants, never build another such plant, and stop creating deadly spent reactor fuel for which the world has no safe place forevermore. As long as the sun shall shine, nuclear power is unneeded.

I object to the transportation of such extremely poisonous, explosive, anti-life substances through population centers along our nation's highways and railways. By setting these vile substances in motion, the proverbial mobile Chernobyl, exponentially more of the population would be endangered and far greater swaths of geography would be put in peril of being completely unlivable for eons of time.

I object to the scheme of "reprocessing" this spent fuel for the nefarious purpose of creating more nuclear weapon components, like plutonium, the deadliest substance ever to exist on earth. The world is already awash in such weapons, easily comprising enough destructive power to wipe out life on earth. Enough already with the insane nuclear arms race. Nuclear weapons must be banished. There should be a special level of hell reserved for all who profit from such evil inventions.

I object to the dumping of this ecocidal waste in the lands, communities and/or neighborhoods of the poor, the Native Americans, and all people of color. It is unconscionable and immoral that innocent people should suffer for the greed of insatiable corporate billionaires and merchants of death.

The only place to put this waste, lethal unto eternity, is as close as possible to where this vicious stuff was first created. That is, it must be stored on-site, near the nuclear power plants that produced it, in Hardened On-Site Storage (HOSS) containers, in such a way that through the centuries and millenia its presence can never be forgotten or fail to be attended to by those who come after this reckless, murderous version of humanity. Never should the lethal nuclear waste from nuclear power spent reactor fuel be transported along our nation's highways and railways through untold numbers of population centers. Has it even been tabulated how many lives could be wrecked by one little accident, one unfortunate spill? Over time the earth and its oceans and continents, though seemingly fixed in place, are continually in motion. There is no magic geological formation stable enough to hold nuclear reactor waste for as long as it remains deadly. No. No. No.

Marilyn Hoff
PO Box 295
El Prado, NM 87529

From: Steve Kaplan [stevebkaplan@centurylink.net]
Sent: Monday, October 31, 2016 3:58 PM
To: Consent Based Siting
Subject: Transport of Radioactive Waste

I am a Ph.D. physicist familiar with radioactive cycles.
I am also familiar with DOE facilities such as RHIC, NIF, NSNS and others;
I had been involved with developing ultra-fast transient digitizers
applicable to these facilities,
particularly NIF.

I also have reviewed the recommendations of physicists and engineers
trying to make sense
of DOE policy pertaining to the ever increasing load of waste.

Here are my requests:

1. There are too many sites storing (especially solid) concentrated
waste in densely-packed "wet"
storage pools. Indian Point, which I lived near, was one of these sites
-- the pool has been leaking
for decades, and one terrorist TOE missile on the top of that pool could
result in a 50-mile radius,
depending on wind, to be contaminated.

MOVE ALL SUCH FUEL TO ON-SITE hardened DRY-CASK STORAGE! EACH cask
should be ~25m from
each other (hexagonal-close-packed structure) to avoid more than one or
a few casks to be at risk
by missile.

2. STOP MAKING MORE FUEL -- in this day and age, you can see the
handwriting on the wall -- the
fuel cycle is heavily subsidized by my tax $$; the bottom line is that
any radioactive fuel cycle, including
Thorium (promoted by James Hansen as an alternative to fossil fuels) is
TOO EXPENSIVE, DANGEROUS,
and can be phased OUT.

3. Mobile transport of fuel is expensive, dangerous and EASILY derailed
by terrorist attack. Storage at
ANY of the mass storage sites recommended to Congress by DOE fail in
multiple ways to protect either
the fuel, the environment, or the public. All such sites so far
identified are not scientifically and geologically
suitable (remember when Yucca Mtn. was deemed DRY?), not socially
acceptable, and not environmentally just.
As an alternative, how about parking it under YOUR house?

4. Put more money in the pot for waste storage NOW! A new president may
be amenable to working with

Congress on this. Keep wet storage pools for intermediate steps or emergency maneuvers.

5. Finally, please consider getting your heads straight. You've been playing the wrong game for a long, long time.
Just look into how NIF was handled: I sat in the audience as the NIF head said he was ON TIME and WELL WITHIN BUDGET. Heads rolled within two months, and the cockroaches scattered instantly.

START WORKING FOR THE PUBLIC GOOD!

Steven B. Kaplan, Ph.D.
914.564.1836

From: Klineisfine@aol.com
Sent: Sunday, October 30, 2016 3:57 PM
To: Consent Based Siting
Subject: Comments - Designing a Consent-Based Siting Process: Summary of Public Input

There are lessons to be learned from Federal Regulations that apply to LLRW (10CFR61), particularly the Office of Nuclear Material and Safeguards' document "Regulating the Disposal of LLRW: A Guide to the NRC's 10CFR61" (U.S. Nuclear Regulatory Commission, "Guide to the U.S. NRC's 10CFR61," Office of Nuclear Materials Safety and Safeguards, NUREG/BR-0121, August 1989, pp .19, 25 & 26. http://pbadupws.nrc.gov/docs/ML1207/ML120720225.pdf) which contains, **"**Common sense siting requirements which address the natural characteristic of the site and other factors. NRC views the siting requirements as minimum...whether or not engineering enhancements are used. The requirements are primarily directed at aspects to be avoided.**"**

In this document, the NRC expresses, **"**Concerns about storage, including onsite storage, becoming defacto disposal; distraction of reactor management from the safe operation of the reactor...and the potential for package and waste disintegration.**"**

The document further states, **"**There is no way to guarantee that any disposal facility, for any waste, will not release...radioactivity. No structure or site can be guaranteed to contain...radioactive waste in perpetuity (given the fact) that facilities deteriorate and human institutions may not maintain complete control**."**

■ **"**Sites should be avoided where ...known natural resources...may negatively affect... performance objectives.**"** All U.S. nuclear power plants are light water reactors and are, therefore, located on potable or environmentally-sensitive bodies of water.

■ **"**A prospective site must be well-drained and free of flooding or frequent ponding.**"** Reactor sites are located in wetland flood plains.

■ **"**The site should be located far enough above the water table to prevent groundwater intrusion.**"** Shallow three to five foot borings have hit groundwater on reactor sites, and residents and businesses in the vicinity of reactors may rely on groundwater wells.

■ **"**Sites and areas where tectonic processes - such as faulting, folding, seismic activity, or volcanic activity - and surface geological processes - such as mass wasting, erosion, slumping, landsliding, or weathering - occur..must be avoided.**"** Reactor sites are subject to erosion and seismic activity.

Despite the fact that no nuclear power plant can meet siting requirements for LLRW, let alone, HLRW/spent fuel disposal/permanent storage**;** the inadequate NRC Rule and Generic Environmental Impact Statement (GEIS) regarding **"**Waste Confidence**"** which failed to comply with the National Environmental Policy Act (NEPA) and which, for the first time, acknowledges the possibility of permanent onsite "storage" at these completely unsuitable reactor sites**;** and the DC Circuit Court of Appeals 6/3/16 decision (USCA Case # 14-1210), **the reality is that this lethal waste remains at closed reactors and continues to irresponsibly pile up at operating reactors with no viable solution.**

Therefore, the DOE must admit that at the present time and for the least the immediate/intermediate future, **COMMERCIAL REACTOR SITES ARE DEFACTO HLRW/SPENT FUEL "DUMPS." THEREFORE, CONSENT BASED SITING MUST INCLUDE THE CONSENT OF PEOPLE LIVING WITHIN AT LEAST A 100 MILE RADIUS OF OPERATING AND CLOSED COMMERCIAL NUCLEAR POWER PLANTS.**

Thank you for your time and consideration.

Connie Kline

From: Bonnie Korman [bkorman@newmex.com]
Sent: Sunday, October 30, 2016 9:46 AM
To: Consent Based Siting
Subject: Comment on establishment of sites for storage of spent nuclear reactor fuel

U.S. Department of Energy:

We strongly object to all the proposed sites for storage of spent reactor fuel, including those in NEW MEXICO, our residence.

Currently, NM is dealing w/ the consequences of dangerous and volatile storage at the WIPP site in Carlsbad, NM. This deadly,

expensive problem originated at our lethal, prohibitedly expensive nuclear lab in Los Alamos, NM.

LANL itself is the locus of historic and ongoing contamination, toxicity, and disastrous, intractable storage problems.

The issue of transportation of these deadly substances is obvious to us— wrong, reckless. Making the dangers mobile compounds the

already extremely high, inevitable, threat of accidents of exposure to the public.

Northern NM, where 3 generations of our family are living, is irrevocably contaminated by Los Alamos nuclear activities, exacerbated in

recent times by 2 major forest fires on its borders, and, not incidentally, adjacent to a Pueblo Indian population of many hundreds of years.

It can never be 'cleaned up'.

We object in the strongest sense, to the creation of additional permanently lethal, toxic storage sites in New Mexico, or any other state

of the U.S, or foreign locality. We are currently suffering the abject failures of such a site at WIPP in southern NM.

The only solution, and not a happy one, but nothing about nuclear energy and weapons can be good for humans, or Earth, is permanent onsite

storage— HOSS.

As engaged and experienced citizens, and lifetime advocates for peace and humanitarianism, we implore you to bring the Department into

the 21st c., and our grandchildrens', and all humanity's future, by abandoning nuclear and fossil fuel energy, and applying the power, the

influence and the considerable treasure of the U.S. to safe, sustainable, renewable energy sources.

Thank you for your attention to our remarks on this vital issue.

Bonnie Korman and Robert Bishop
PO BOX 80
Taos, NM 87571

From: James C Kuhn (JCK) [james@jckeng.com]
Sent: Wednesday, September 21, 2016 4:49 PM
To: Consent Based Siting
Subject: Response to: Draft Summary of Public Input Report, dated Sept 15, 2016

Response to: Draft Summary of Public Input Report, dated Sept 15, 2016

One of your five questions in the original IPC was, "5. What else should be considered?"

I would have expected that the Summary of Public Input Report would have included substantial (perhaps 20%) content addressing answers to your fifth question. However, the only portion of your report that appeared to address your fifth question was part 4.10 of your report, "Additional Topics" and then that was well less than a page long.

I believe that the all waste products (SNF, HLW, excess weapons inventory, etc.) should be treated together and a national policy should be established of recycling/reprocessing (for example, into Mixed Oxide [MOX] fuel as an interim step) including final processing within Fast Neutron Reactors (FNR) in which the bulk of the waste product (long-lived actinides) could be permanently eliminated from the waste stream, and that which is left over would be a small fraction of the waste the DOE is currently faced with, and much less radiologically active. The siting process for final disposal of the waste after recycling would be far less painful than what you are now facing, and the use of domestic FNRs would ensure national security.

Programs to deal with the waste in this manner, such as the US Advanced Fuel Cycle Initiative (AFCI), were de-funded by the Obama Administration, yet your program and study will carry into successive administrations, and inclusion of alternative waste disposal topics within your report would serve future administrations and the American people well.

I hope that the final summary includes more discussions about these advanced alternatives rather than focusing on simple disposal that eventually would need to be addressed by future generations. Simple disposal is not proper stockpile stewardship.

Regards,

James C. Kuhn, P.E.
JCK Engineers, Inc.
438 E Katella Ave Ste 229
Orange CA 92867
tel 714.633.6210
fax 714.633.6270
http://www.jckeng.com

From: Gwen L [yardarice33@hotmail.com]
Sent: Friday, September 23, 2016 5:45 PM
To: Consent Based Siting
Subject: Consent Based Siting

To Whom It May Concern:
Given the persistent inadequacies that still plague Fukashima to this day, it only makes sense to just stop making this. There are enough other TRUE renewable energy sources that nuclear can be put aside permanently as a viable, long-term solution to any energy demand. Nuclear isn't "green" because it's simply too toxic to be considered under such a label. At the very least, please store irradiated nuclear fuel in HOSS dry casks, as safely and securely as possible, as close to the point of generation as possible, in a monitored, inspectable, retrievable manner.

Thank you for your time and consideration.
A concerned citizen,
Gwen in Dayton, OH

PILGRIM WATCH COMMENT CONSENT BASED SITING

Due to the government's failure to establish a repository, spent fuel is piling up in all the wrong places- locations, like Pilgrim here in Plymouth, threatened by rising sea levels, storms of increased intensity and frequency, vulnerability to terrorism and a location surrounded by dense populations. Therefore it is important to learn why siting failed in the past so that the same mistakes will not be repeated in a search for a permanent repository & consolidated site.

Lessons learned from past failure to site show that the government (1) failed to develop a process that gives states, host communities and parties with standing regulatory authority over health and safety issues at the site; and (**2) failed** to provide a process that would allow meaningful consent – that means informed consent.

1. **States must have regulatory authority- require Congress amend AEA**

Currently the state and local authorities are preempted by the Atomic Energy Act from almost all matters dealing with radiation health and safety- they belong to the federal government. This needs to change by changing federal laws-namely amending the Atomic Energy Act to allow states and the EPA to have authority. This authority probably would come under **Resource Conservation Recovery Act** (RCRA) and the Clean Water Act and other rules.

Why does this matter? Consent means that what you agreed to has to happen and communities are consenting to safe storage that will not harm their health, environment, safety or diminish their property values. Absent amending the AEA, states & local communities are left powerless so why would they consent?

A precedent is WIPP project in NM. Before WIPP was sited, New Mexico got RCRA authority and after the accident in 2014, New Mexico used its RCRA authority to put a hold on the permit until the site could be cleaned up and required the state to come in and do investigations before they would allow it to operate again.

So that example can serve as a model for having the federal government and a state work together by having the site governed by both federal and state regulations. Note that under these environmental laws there are citizen-suit provisions. So citizens can play an active role in ensuring that the laws are enforced.

2. **Meaningful Consent - consent must be informed**

Communities need to know what they are getting into before being asked for consent. Therefore the following has to be worked out & specified:

a. Specific technical criteria for site screening
b. Standards for site development/operations
c. Operating requirements for the site
d. Standards for radiation and environmental protection
e. Requirements for security
f. Financial & job packages
g. Financial assurances- liability
h. Provisions money to community to be able to conduct own assessments.

Examples:

a. Establish **site screening criteria** standards, such a hydrology, geology, seismic, population density, transportation access, environmental justice issues

b. Establish **standards for development of the site**, including:
   - base line radiological monitoring before the site is developed;
   - capability to **monitor canisters & replace defective/leaking casks** - casks coming to the site have thin (0.5") stainless steel canisters that may crack within 30 years with no current technology to inspect, repair or replace cracked canisters; and some of the casks were at reactor sites located on the ocean, subject to salt water corrosion;
   - monitoring equipment for the casks and protocol for reporting to state, local community and public.

c. Establish **standards for radiation and environmental protection**- such as the existing limits for drinking water in 40 CFR 141.66 & dose limits for fuel cycle facilities 40 CFR 190.00(a) including organ dose limits- and compliance based on the most susceptible, children according to Executive Order 13045. The NRC and EPA have their work to do to establish these standards.

d. **Standards security**: whether blast shields, earthen berms or a building over the casks to prevent line of sight targeting;

e. **Finances:** *financial package for* community including training emergency planning & number/type local jobs-union commitments

f. **Liability**- is the owner of the site a limited liability company? If so, assure "Mother Company" guarantees payment and when they run dry DOE commits to covering costs-not the state's taxpayers. Will a separate fund be set aside to be held by the state for added assurance?
g. **Establish funding for states, tribes, local governments, and other parties with** standing so that they can have the resources to investigate these issues on their own and come to their own conclusions about whether they might be willing to serve as a host. This must be part of the final package.
h. **Establish state/citizens advisory panel**- receive and review documents, advise the Governor, pertinent branches of government, local community and public, educate the public –panel adheres to open meeting requirements

3. Who Consents

a. **Governor-**one state or more if site on boundary
b. Tribe/Nation
c. Adjacent and or nearby areas heavily affected by transportation, socioeconomic & environmental impacts-establish method draw circle around site at certain radius-or abutting towns or adjacent state if site on boundary.

4. How Should Consent Be Given

a. One option is the decision of how consent is given is made by the host state (Governor/tribe) and impacted community (s)
b. Referendum
c. Those who oppose site and are directly impacted due to proximity site or main transportation route should be offered pre-proposal value property and moving costs.

5. Criteria established when specifically consent can be withdrawn

Prepared by,

Mary Lampert
Pilgrim Watch, director
148 Washington Street, Duxbury, MA 02332
Tel. 781-934-0389/Email: mary.lampert@comcast.net

From: Michel Lee [ciecplee@verizon.net]
Sent: Sunday, October 30, 2016 10:25 AM
To: Consent Based Siting
Subject: Comments of Michel Lee as citizen on "Consent-Based Siting"
Attachments: DOE. 2016. ML. Comments. re Consent-Based Siting (Oct 30 2016).doc

Dear DOE,

My personal comments as a citizen on “Consent-Based Siting” are attached.

Michel

Michel Lee, Esq.

October 30 2016

Re: “Consent-Based Siting”

U.S. Department of Energy:
Via email to: consentbasedsiting@hq.doe.gov

Dear Department of Energy:

I am an attorney and typically submit comments on policy issues on behalf of public interest nonprofit organizations. I drafted formal comments in this regard in response to the Department of Energy’s “Consent-Based Siting” proposal earlier this year.

This is the first time in my 30 year career I can recall being so outraged that I am protesting a policy on my own personal behalf.

The many environmental arguments against this proposal are on record, as are the industry arguments in its favor. I will not waste DOE staff time reiterating what has been repeatedly said.

I simply wish to note the following:

Human civilization has existed for 5,000 generations.

High level nuclear waste will remain toxic for 24,000 generations.

And now the DOE seeks “consent” and ”approval” so that the current commercial nuclear industry can continue to produce this poison.

The level of hubris here defies belief. Unfortunately the level of undue industry influence over policy does not.

Sincerely,

Michel Lee, Esq.
New York

From: Lennon, Michael J. [m.lennon2@miami.edu]
Sent: Friday, October 28, 2016 5:37 PM
To: Consent Based Siting
CC: Wester, Julia Nicole
Subject: Consent-Based Siting for Nuclear Waste
Attachments: Short Investigation 4 - Public Comment.docx

Public comment on https://www.regulations.gov/document?D=DOE-HQ-2016-0023-0001

Michael Lennon

Public Comment on Consent-Based Siting for Nuclear Waste Storage

Nuclear energy has long been heralded as the cure to our country's energy demand. Carbon based energy has yet to be dethroned, however the empirical evidence of its environmental impact threatens its long term viability. Solar and wind technologies struggle with efficiency and scaling issues, and are not yet viable for large scale application. The technology for nuclear energy has been proven for decades, and it already accounts for 22% of electric power generation. "USEIA" However, production of nuclear energy has stagnated at the hands of issues external to the plants. As industries and economies shift towards all-electric based power, it is time for a nuclear renaissance to wane off our reliance on carbon.

The strongest hindrance to the expansion of nuclear power is in the policies concerning waste storage. Currently, no mass storage site exists for spent fuel rods and other high level radioactive waste, leaving plants with dwindling on-site storage. Public opinion does not oppose nuclear power, with many surveys showing a positive acceptance to the usage of nuclear power. "Dunlap" However, many citizens have concerns about nuclear waste storage, the one last tether holding down nuclear energy from cleanly satisfying this nation's energy demands. With the public's approval to a comprehensive waste storage plan, the country can begin the transition to nuclear power, following the path France set in just over a decade's worth of time.

The public should have facts clearly presented to them, free of bias, to educate them on their decision. Storage of such potently dangerous material should not be taken lightly, and as a judge reviews the facts before reaching a decision, the public should know what they are signing in to

or out of. Speaking of lightly, transportation of extremely dense radioactive waste from all across the country to one storage site is no small task. While the local communities must accustom themselves to permanent storage, many more communities will have radioactive material regularly passing through en route to storage. Current expeditions require custom convoys to transport hundreds of thousands of pounds of waste, imposing the material's presence on communities. One solution is to limit shipment size, lowering the hazard and fanfare on the route.

As for where the material is going, the US government should take a long look into the future of its energy and environment. While nuclear may have sharp growing pains, the initial cost of establishing proper infrastructure will reap financial and environmental benefits in the long term. Nuclear is a carbon-neutral energy solution which internalizes all of its externalities; its environmental effects are all accounted for in its price and production. "World-Nuclear" The government should consider buying out the land use for the waste storage, as the local governments can profit off the market use value of their land to the waste storage. Yucca Mountain has been an expensive, highly debated debacle which can finally be righted with a proper storage facility and proper market value buyouts to the local governments for usage of the land. Other locations should be considered as a fresh start, however Yucca Mountain has a lot off documented research supporting its viability as a long term storage site.

Nuclear energy can have a very positive impact on our future if we properly account for its drawbacks and invest into its long term viability. If facts cannot persuade people to allow for its

storage locally, then incentives can at least ease the pain from swallowing the pill, which will ultimately lead our country down an energy independent and environmentally friendly path.

Works Cited

"Radioactive Waste Management." Radioactive Waste Management. World Nuclear, 16 Sept. 2016. Web. 28 Oct. 2016. <http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-wastes/radioactive-waste-management.aspx>.

Dunlap, Riley E., Michael E. Kraft, and Eugene A. Rosa. "Public reactions to nuclear waste: Citizens' views of repository siting." Most of the chapters in this book are revised and updated versions of papers presented at the 1989 annual meeting of the American Association for the Advancement of Science in San Francisco, CA.. Duke University Press, 1993.

"US Nuclear Power Policy." US Nuclear Power Policy. World Nuclear, 1 July 2016. Web. 28 Oct. 2016. <http://www.world-nuclear.org/information-library/country-profiles/countries-t-z/usa-nuclear-power-policy.aspx>.

"U.S. Energy Information Administration - EIA - Independent Statistics and Analysis." EIA's Energy in Brief: What Are the Major Sources and Users of Energy in the United States? N.p., 29 Dec. 2015. Web. 28 Oct. 2016. <http://www.eia.gov/energy_in_brief/article/major_energy_sources_and_users.cfm>.

From: Ellen McConnell [cats4all@optonline.net]
Sent: Friday, October 28, 2016 10:38 AM
To: Consent Based Siting
Subject: waste

PLEASE listen to the public.NO waste anywhere, anytime.
The DOE has not been listening.
WHY?
EMcC

From: Melchior, Dan [Dan.Melchior@parsons.com]
Sent: Friday, October 28, 2016 6:39 AM
To: Consent Based Siting
CC: Griffith, Andrew
Subject: Comments to Draft Document on the Public Meetings

Dear Sir or Madam,

I greatly appreciate the work that went into assembling the subject document. It is clear to me that the information collected sets a tone of frustration within the public and many salient points are raised about the process.

There are many crucial things missing from this document that would set the tone as to why we are today at this stage. First, very few in the audience were aware of the details of the Nuclear Waste Policy Act much less the standards by which NRC and EPA would assess a permit application. I highly recommend that this information be included in this document so that all can read these two important pieces of information. Commenter's also requested information on siting requirements. These too are contained in the subject documents I cited.

What is really a huge issue in this remains the loss of critical knowledge after Senators Johnson and Stennis forced the Yucca site into selection. Without all the historical data being available there is no way this process will ever get off the ground. We will have a perpetual do-loop unless communities even know whether they have geologic systems capable of holding waste.

I implore the Department to start to release these old documents into the public. They may be debated on their merits as science and engineering has changed over the past 30 years but the basics remain the same. Sometimes the obvious needs to be addressed to avoid larger delays. In particular, the "Environmental Assessments (EA's) done in the mid-late 80's are a wealth of basic knowledge that would enable communities to understand whether they can host a repository.

Thank you,

Dan

Dan Melchior, Ph.D.
Vice President
Parsons Federal Group
100 "M" Street, SE
Washington, DC 20003
(703) 628-8133

From: Leon Neihouse [neihouse@gwi.net]
Sent: Thursday, October 06, 2016 4:39 AM
To: Consent Based Siting
Subject: Request for Consideration

United States Department of Energy
Consent Based Siting

I have followed the spent nuclear fuel (SNF) discussion throughout the Blue Ribbon Commission on America's Nuclear Future and the consent based siting approach with which you are currently involved.

Then I was working for the now terminated Dirigo Energy Institute (DEI); now I am employed by Dirigo Energy International, Inc. which uses the same acronym.

The DEI position has always been that the chances are diminishingly small of getting perpetual and universal consent to place nuclear wastes in someone's back yard.

In that all locations in all States of the Union are in someone's back yard, the DEI quest is to set up for consolidated interim storage on an uninhabited island.

Two nearby USA owned islands that meet this requirement are Navassa Island and San Miguel Island.

All of the spent nuclear fuel in the USA now, and all that will be created in the near future, can be placed on these two islands.

Transportation could be by ship, barge, and/or air.

- There is precedent for ship/barge water transfer: SNF was shipped from Japan to England in this manner until Japan developed a reprocessing ability and the United States shipped SNF by barge from the shutdown Shoreham plant on Long Island to another reactor site.
- The United States Nuclear Regulatory Commission relies on calculations to show that canisters storing SNF in an open environment will survive a crash with an airplane without releasing radiation to the environment. This being the case, the obverse should also be true, i.e., if a transport plane were carrying appropriately protected SNF then a crash landing should release no radioactivity. The cutting edge of transport plane capacity is in the 150-ton range, which should provide the ability to air lift SNF to airfields at Guantanamo Bay in Cuba and to one or more on the West coast with easy access for subsequent ship/barge transfer to Navassa Island and San Miguel Island.

This approach is introduced on the REB page of an aegis-dei dot net web site.

I respectfully request that this email be included in your final report and that DEI be provided the opportunity to submit an application to set up a consolidated interim storage site at both locations.

Sincerely,

Leon Neihouse
Manager: Franchise Operations
Dirigo Energy International, Inc.
Maine Office
24 Oak Grove Avenue
Bath, Maine 04530

From: Allison Ostrer [aostrer@hotmail.com]
Sent: Saturday, October 29, 2016 8:07 AM
To: Consent Based Siting
Subject: Shut down nuclear power to stop waste

Dear DOE;

I do not consent to DOE rushing into de facto permanent parking lot dumps (so-called "centralized" or "consolidated interim storage"), in order to expedite the transfer of title and liability from the nuclear utilities that profited from the generation of high-level radioactive waste, onto the backs of taxpayers.

No do I consent to radioactive waste barge shipments on the lakes and rivers of this country, the fresh drinking water supply for countless millions, nor on the seacoasts. In addition to a disastrous radioactive release if the shipping container is breached, infiltrating water could spark a nuclear chain reaction, if a critical mass forms, due to the fissile U-235 and Pu-239 still present in the waste.

Shut down all US nuclear reactors immediately to stop producing waste.

Allison Ostrer
Seattle, WA

From: Judi Poulson [judpeace@gmail.com]
Sent: Thursday, September 22, 2016 1:27 PM
To: Consent Based Siting
Subject: waste dumps

Generating nuclear waste without the public consent is a terrible idea.
Especially targeting Native American sites. Shameful!
Please don't do it.
Thanks
Judi Poulson
1881 Knollwood Drive
Fairmont, MN 56031
USA

From: Judi Poulson [judpeace@gmail.com]
Sent: Thursday, October 27, 2016 4:16 PM
To: Consent Based Siting
Subject: Response to IPC

I am against senseless parking lot dumps of radioactive waste.
It can never be safe.
Thanks
Judi Poulson
1881 Kno

From: Judi Poulson [judpeace@gmail.com]
Sent: Thursday, October 27, 2016 4:16 PM
To: Consent Based Siting
Subject: Response to IPC

I am against senseless parking lot dumps of radioactive waste.
It can never be safe.
Thanks
Judi Poulson
1881 Knollwood Drive
Fairmont, MN 56031
USA
phone 507 235 5288

From: Philip Ratcliff [skazz999W@hotmail.com]
Sent: Thursday, October 27, 2016 4:09 PM
To: Consent Based Siting
Subject: Nuclear waste storage

To Whom It May Concern:

The ongoing process over nuclear waste storage elicits more public comments. My comment is, I favor the Yucca Mountain area as a waste site. This area was rejected, after its initial selection. I think that whatever the problem with Yucca Mountain, be it earth faults, or underground water, this can be remedied. Bury the waste in impermeable, crypt-like containers. Containers with concrete walls a few feet thick, reinforced with rebar, would withstand the elements indefinitely.
Another problem to consider, is how to warn future generations of the nuke waste, should these containers be unearthed in the distant future. Language becomes obsolete after around a thousand years. The containers should include designs that alerts future generations of the contents. Maybe something like a diagram of an atom, or a splitting atom, combined with a skull and bones, would work.
The temporary storage of spent nuclear fuel rods and other waste, has gone on for too long. The nuke waste should be trucked to Yucca Mountain as soon as possible. Thank you.

Philip Ratcliff
4665 Tragen Ct. SE
Salem OR 97302

From: N. Rice [hope247@sover.net]
Sent: Sunday, October 30, 2016 3:02 PM
To: Consent Based Siting
Subject: my comments RE: "consent-based siting"

To the U.S. Department of Energy:

I strongly object to the siting of high level radioactive waste at any "interim" nuclear storage locations around the U.S. whether at Yucca Mountain or in parking lot dumps. Just the transportation alone of that waste is far too dangerous to the hundreds or thousands of towns and cities near the routes of transport. To me, this is also an excuse to absolve the owners of closed nuclear plants from their responsibility to decommission those closed nuclear plants in a timely and safe manner.

It is also to my mind insane to assume that anyone would "consent" to such "interim" storage facilities. Any "consent" would inevitably involve some sort of bribe to the citizens in those areas.

Although there is not yet any long-term safe depository for high-level nuclear waste, I agree with hundreds of environmental groups in this country that that waste is best stored in hardened on-site storage (HOSS) dry casks near the nuclear plant locations until a safer storage method is found many years from now. Those dry casks are far preferable to "interim nuclear storage locations" with their attendant problems. They would also be far safer there than leaving the radioactive fuel rods in the fuel pools which are vulnerable to sabotage, to extreme weather conditions, and to pool leakage. Those pools, after all, were not designed for such long-term use.

In the meantime, DO NOT MAKE ANY MORE RADIOACTIVE WASTE at nuclear plants or by building more nuclear weapons, and DO NOT REPROCESS NUCLEAR WASTE MATERIALS. PLEASE be responsible to the people of this country and the world by not planning and implementing any interim locations.

This interim storage idea is very likely to end up contaminating our air, soil and water if implemented. It is your sacred duty to protect our health and safety, not further jeopardize it.

Nancy Rice
Vermont

From: Rosenblums(pol1) [pol1@rosenblums.us]
Sent: Saturday, October 29, 2016 1:04 PM
To: Consent Based Siting
Subject: Nobody wants a nuclear waste dump next door

When the DOE was conducting its aborted 1986 crystalline rock repository search in New England, 130 town meetings in New Hampshire took up the issue in warrant articles. Of those town meetings, 100 adopted the common language "to oppose the burial, storage, transportation and production of high-level nuclear waste" in the state of New Hampshire.
Yucca Mountain was the chosen site years ago and was thoroughly studied before being derailed by political machinations. A centralized, physically secured site is required for nuclear waste storage, which has thousands of years of toxicity. Storage in "parking lot" is not good enough no matter where it is. Please renounce this ill considered plan and bring Yucca Mountain back to the table.

Dr. Stephen S. Rosenblum. Ph.D. Nuclear Chemistry

From: James Servais [jimserv@gmail.com]
Sent: Friday, September 23, 2016 9:38 AM
To: Consent Based Siting
Subject: Consent-Based

Hello DOE,

I am writing to state my opposition to your proposed Consent-Based siting of nuclear waste.

Poor Native Americans are usually targeted and taken advantage of when it comes to dumping our nuclear waste. President Clinton declared an end to this environmental racism.

A better idea would be to get out of bed with the nuclear industry and move in the direction of reducing the production of rad-waste. We don't need nuclear. Renewables are cheaper, faster, cleaner, and more flexible than nuclear.

Leave what we have near where it is produced in dry cask. Save the empty liquid waste sites for future dry cask as needed. And stop trucking the stuff through the country side as if it were groceries. Accidents happen.

"Nuf said", as my Marine friend likes to say.

James D. Servais

From: CarpeDiemVoice@aol.com
Sent: Friday, October 28, 2016 5:42 AM
To: Consent Based Siting
Subject: radioactive waste dumping comment

I DO NOT CONSENT!

Leslie Sheridan
Publisher & Editor
The Carpe Diem Voice
707.995.1034
Linkedin Profile: http://www.linkedin.com/in/lesliemsheridan
Change.org Profile: www.Change.org/CarpeDiemVoice

From: Rusty Storbeck [rustys@cybermesa.com]
Sent: Thursday, October 27, 2016 4:12 PM
To: Consent Based Siting
Subject: Response to IPC

I do NOT consent to interim storage sites for nuclear waste: use HOSS dry casks.

I DO consent to putting a halt to the construction of nuclear power plants, which create the most dangerous waste mankind has ever produced and will ever produce.

I DO consent to putting a halt to the creation of nuclear weapons. The U.S. should vote YES to L.41: nuclear weapons must never be used, but having nuclear weapons means they might actually be used, purposely or accidentally.

I do NOT consent to reprocessing nuclear fuel: reprocessing only puts off what we must inevitably do: divorce ourselves from the use of all things nuclear.

Nuclear power and nuclear weapons are dangerous and expensive. The oil companies knew this years ago, and that's why they never got into the business.

I do NOT consent to hauling the waste from one place to another: if accidents happen--and they do--the consequences are tragic.

NO to centralized storage sites for nuclear waste.

Rusty Storbeck

Document Metadata:DOE-HQ-2016-0023-DRAFT-0011

Document Details

Docket ID:	DOE-HQ-2016-0023
Docket Title:	Designing a Consent-Based Siting Process *
Document File:	HTML
Docket Phase:	Notice
Phase Sequence:	1
Original Document ID:	DOE-HQ-2016-0023-DRAFT-0011
Current Document ID:	DOE-HQ-2016-0023-DRAFT-0011
Title:	Comment on FR Doc # 2016-22312
Number of Attachments:	0
Document Type:	PUBLIC SUBMISSIONS *
Document Subtype:	Public Comment
Comment on Document ID:	DOE-HQ-2016-0023-0001
Comment on Document Title:	Designing a Consent-Based Siting Process
Status:	Pending_Post
Received Date:	10/30/2016 *
Date Posted:	
Posting Restriction:	No restrictions
Submission Type:	API
Number of Submissions:	1 *

Document Optional Details

Status Set Date:	10/30/2016
Current Assignee:	Bacon, Cuttie (DOE)
Status Set By:	Public
Comment Start Date:	
Comment Due Date:	
Legacy ID:	
Tracking Number:	1k0-8srf-xg7d
Total Page Count Including Attachments:	1

Submitter Info

Comment:	Responding to your questions: (1)How can the Department ensure the process for selecting a site is fair? Make sure the process is in no way influenced by financial bias, either the low incomes of local stakeholders or the potential profits of outside commercial organizations. Include in the final report a statistical analysis of all comments on this draft report, as well as a statistical analysis of the individual and aggregate response to a consent process. (2)What models and experience should the Department use in designing the process? The engineering on which the eventual design would be based must explicitly address human factors, especially operational factors. (3)Who should be involved in the process for selecting a site, and what is their role? The willing consent of those residing nearest a proposed site should be required, and such residents should have veto power. (4)What information and resources do you think would facilitate your participation? Accessible descriptions of geology and all relevant operational procedures, that is, accessible to high school graduates. and (5)What else should be considered? Requiring waste producers to adequately insure safety by paying such insurance premiums as are necessary to secure consent. *
First Name:	muriel *
Middle Name:	
Last Name:	strand *
Mailing Address:	PO Box 5625 *
Mailing Address 2:	PO Box 5625 *
City:	sacramento *
Country:	United States
State or Province:	California
ZIP/Postal Code:	95817 *
Email Address:	auntym@earthlink.net
Phone Number:	916-457-7141
Fax Number:	
Organization Name:	
Submitter's Representative:	
Government Agency Type:	
Government Agency:	
Cover Page:	

From: Susu Jeffrey [SUSUJEFFREY@msn.com]
Sent: Thursday, October 27, 2016 6:02 PM
To: Consent Based Siting
Subject: Comment on Consent-Based Siting of Nuclear Waste

Susu Jeffrey

1063 Antoinette Avenue
Minneapolis MN 55405-2102
612-396-6966

To: consentbasedsiting@hq.doe.gov <consentbasedsiting@hq.doe.gov>;

Dear Department of Energy,

It is surprising that the DOE is desperately asking citizens if it can contaminate our neighborhoods with "the peaceful atom." No.

We were not asked in the siting of radioactive nuclear installations in the first place. I have buried both my siblings from cancer and DOE has the nerve to ask me to okay the newest solution—paying communities to poison themselves. No.

Here in Minneapolis we are in the nuclear shadow of three N-power plants. It is clear that there is no practical plan to move the accumulated waste sitting on the Mississippi River floodplain. What kind of magical thinking is DOE perpetrating on the public? Like snail slime, moving such waste leaves a toxic trail.

While DOE continues to generate toxic radioactive waste DOE lacks any credibility in trying to handle more waste. Stop producing radioactive waste immediately. That is the first step.

Sincerely,
Susu Jeffrey

From: Tracy Terry [TTerry@bipartisanpolicy.org]
Sent: Sunday, October 30, 2016 1:18 PM
To: Consent Based Siting
Subject: BPC Staff Comments
Attachments: BPC Staff Comments on Consent-Based Siting 1.pdf

Please find attached comments on consent-based siting from the Bipartisan Policy Center Energy Project staff.

We very much appreciate the work the Department has undertaken on this important topic, as well as the opportunity to submit comments. We hope that you will find these comments valuable to your continued work on nuclear waste.

Best,
Tracy Terry

Tracy Terry
Director | Energy | Bipartisan Policy Center
(202) 204-2411 | bipartisanpolicy.org

Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Request for Public Comment on the Draft Report Entitled Designing a Consent-Based Siting Process: Summary of Public Input

Dear Madam or Sir:

We are writing to you on behalf of the staff of the Bipartisan Policy Center's Energy Project to share our views on consent-based participation in the siting of nuclear waste facilities—in particular, lessons learned from the history of siting of non-nuclear, "undesirable" facilities.

Since the 1980s, the process by which noxious facilities are sited has become highly controversial. The traditional "Decide, Announce, Defend" approach can often result in failure to site a facility, and nuclear waste installations are no exception.

There are however, promising strategies to help solve our current paralysis, one of which is "consent-based" siting. While this concept has gained the attention of national policy makers in the nuclear arena, the mechanics and underlying principles behind consent-based siting remain unclear to many. Research into past experiences of siting various facilities has resulted in the development of a proven siting methodology: the Facility Siting Credo. Of course, there is always the risk that a facility will not be sited. However, by following the principles outlined in the Facility Siting Credo, the likelihood of siting success is maximized.

Provided below is a summary of the Facility Siting Credo. We hope the Department will find this information useful in its continued work on consent-based siting for nuclear waste facilities. We appreciate the Department's work on this important topic, and look forward to working with you.

Sincerely,
Bipartisan Policy Center Energy Project Staff

The Facility Siting Credo

The Facility Siting Credo represents a shared process among all stakeholders requiring sustained degrees of transparency and collective problem solving in the face of uncertainty. This is a process for which project proponents need to be sufficiently prepared—both in temperament and skillset. Accordingly, implementation of consent-based siting calls for project leadership that is flexible and adaptive, and that thrives in the nuanced world of conflict resolution, interest alignment, and stakeholder engagement.

By combining a more thorough understanding of the facility siting process with a sufficiently resourced and skilled management structure, the United States can move its nuclear waste program away from a past mired in mistrust towards a more promising future.

Facility siting may be viewed as a largely successful undertaking up until the mid-1980s, after which siting processes became increasingly confrontational and prone to protracted delays and litigation.[*] In response to the growing controversy surrounding the siting of "locally unwanted land use" projects, (LULUs), the National Workshop on Facility Siting (Workshop) was convened and sponsored by the MIT Hazardous Substances Management Program, the MIT-Harvard Public Disputes Program and the University of Pennsylvania's Wharton Risk and Decision Processes Center. The Workshop, which took place in October 1989 at MIT and February 1990 at the Wharton School, brought together academic researchers, public officials and private-sector representatives, all of whom had studied or participated in a variety of LULU facility siting projects—both successful and unsuccessful. The Workshop reexamined siting theory, tested the limits of these theories on specific case studies, and evaluated a new set of siting principles. This multi-stakeholder collaboration produced the Facility Siting Credo (Credo), which seeks to address issues and controversies surrounding the siting of facilities that have a sizeable public benefit but may be perceived as noxious or undesirable by a host community or state.

Reflecting on the sensitivities and unique nature of the facility siting process, the Credo is not a prescriptive, operational manual but a series of recommendations that support fair siting procedures, as well as outcomes that satisfy equity and benefit-cost considerations. Accordingly, the Credo's objectives are to: "…engender trust among the affected groups by dealing with our differences in a fashion that produces fairer, wiser and more efficient siting results than is currently the norm."[1]

The Credo contains fourteen elements, categorized as either Procedural Steps or Desired Outcomes. Each of these elements is summarized below.

[*] As used here, the term "successful" indicates that the proposed facility was constructed. It does not imply that the host community did, or did not, feel that its needs were addressed during the siting process.

Procedural Steps

Institute a Broad Based Participatory Process

All parties must have the ability to be fully informed and to participate effectively in key process decisions. Participation is enhanced with the provision of financial resources (grants) to local stakeholders to facilitate a fully informed public. In parallel, "joint fact finding" is often deployed to collectively develop information regarding project need, risks, costs and benefits in conjunction with a neutral third party—or non-partisan mediating institution—to ensure that information is effectively created and shared.

Implementation Considerations

- It would be a mistake to assume that such a participatory process amounts to a small number of additional meetings at the back end of the project. Rather, a "broad based and participatory process" mandates a form of working *partnership* with project stakeholders. Such a shared outcome requires the adoption of new engagement models for all project stakeholders when compared to traditional Decide, Announce, Defend methods. This process envisions multiple structured opportunities for sustained and meaningful dialogue amongst all project stakeholders under the direction of a professional facilitator.
- Furthermore, the practice of joint fact-finding is explicit in the assumption that all the "facts" have yet to be defined and that they are best developed collaboratively through a structured and mediated process.
- At first glance, such a labor intensive undertaking may seem cumbersome and inefficient to project proponents who are used to more hierarchical engagement efforts. As previously discussed, however, this form of structure collaboration has a greater chance of producing robust and enduring results than more traditional Decide, Announce, Defend strategies.

Seek Consensus

Consensus requires committed efforts to address the numerous values, concerns and desires of the affected parties. Technical expertise is subject to independent (some would say vigorous) review in a public forum augmented by the incorporation of local or indigenous knowledge regarding siting particulars. Framing the facility siting process as an effort to create consensus helps build public confidence and process legitimacy.

Implementation Considerations

- Consensus is not to be confused with unanimity. There is every likelihood that, at the end of a consensus-seeking process, there are those who will remain wholly dissatisfied with the decision. While opponents may not formally approve of the final outcome, by engaging in a process that sought consensus, it is hoped that those

opposed may at least attest to the fairness and transparency of the decision-making process.

Work to Develop Trust

The absence of a sufficient level of trust is one of the major impediments to achieving siting consensus. Also recall that, "trust is a byproduct of actions that are received as trustworthy."[2] Methods to build trust include a commitment to responsiveness, an admission of past mistakes, and an identification of specific programs that will prevent these mistakes or omissions from reoccurring.

Implementation Considerations

- A project proponent's simple act of following through on commitments will serve to build public confidence. In addition, an independent and sufficiently resourced multi-stakeholder advisory board that provides input into facility siting process design and implementation may help to build trust and ensure that stakeholder issues and concerns are well represented. Prior to committing to the formation of an advisory board or specific organizational behaviors (i.e. responsiveness), it is in the best interests of project proponents to ensure that such commitments have sufficient backing from senior management to ensure implementation.
- The admission of past mistakes, as a means to reduce tension between stakeholders, was also suggested as a trust building mechanism. While such an action has a potential benefit to the overall siting program, the legal liabilities associated with this admission would require careful consideration.

Seek Acceptable Sites Through a Volunteer Process

Encourage voluntary submissions of interest with a clear understanding that such interest is not irreversible and that the submissions will be subject to clearly defined evaluation criteria. Such an effort generally assumes that potential new revenues (taxes and economic development opportunities) will be realized by the host community.

There are those who suggest that a volunteer process carries with it strong ethical concerns. For example, if the local decision-making process calls for a majority vote, those small number of residents who live closest to the facility face the prospect of being outnumbered by the majority who reside a greater distance away. If instead the determination is made by local officials, those citizens who hold the least amount of political power are subject to the decisions of their more influential representatives.

Implementation Considerations

- Recall that those who advocate from a distributive justice perspective strongly object to a voluntary siting process for fear of environmental justice concerns.

- In addition, there are many unanswered questions with respect to volunteers and a submission process including, but not limited to: Who volunteers and on what basis? What is the required level of authority? What level of commitment is implied with volunteering? Are there self-directed exits from the process?

Set Realistic Timetables

From the perspective of project proponents, there is a tendency to want to expedite the siting and permitting process. Host communities have considerable interest in vetting the full range of project options and evaluating technical evidence in an open and transparent manner. If project proponents press for accelerated project completion, potential host communities will generally resist and have many legal and political means available to them to delay or stop projects that they feel may be aggressively scheduled. In light of the initial Credo component (again, a Broad Based Participatory Process), the initial facility siting schedule may need to be revisited and perhaps extended.

Implementation Considerations

- A cardinal principle of multi-stakeholder dialogues is expectation management. Again, project proponents may have developed draft milestone and schedule proposals but these should be vetted and agreed upon by key project stakeholders as part of the overall engagement effort. In this context, project proponents are well served by considering the motto "sometimes it is best to go slow to go fast."

Consider a Competitive Siting Process

In the event that there are multiple parties interested in hosting a facility, project proponents may consider a competitive site selection process whereby potential hosts have the opportunity to propose benefit or incentive packages that may be later negotiated with project sponsors. Having multiple sites compete to host a facility reduces stigma as no particular community feels that they have been singled out to host an installation that is undesirable to other communities. Furthermore, such an approach promotes more productive negotiations with respect to possible incentive or compensation packages. Competitive siting processes have been used in the siting of prisons and other similar facilities.

Implementation Considerations

- Prior to the initiation of a competitive process, project proponents will likely have conceptual plans as to how such a process may be implemented. However, in keeping with the initial recommendation of a "Broad Based Participatory Process" one of the initial topics for possible consideration by a joint fact-finding process would likely be detailed criteria and procedures for this competitive effort.

- Throughout such a competition, transparency is a paramount concern to ensure that the final outcome is viewed as fair and reasonable to all involved.

Keep Multiple Options Open At All Times

There is an understandable tendency, on behalf of project proponents, to expeditiously down-select and arrive at a final preferred host. Rather, the principle behind "Keep Multiple Options Open" cautions against doing so to prevent the final host community from feeling discriminated against if it is the only candidate left for consideration. Such a perception may serve to derail compensation negotiations.

On a related front, this component speaks to tempering the desire to define a conclusive solution. Often times, in the course of public deliberation, alternative solutions emerge and may be worthy of further consideration. Refusing to accept or acknowledge such solutions can work to reduce trust and confidence in the overall process.

Implementation Considerations

- In some instances, developers have submitted simultaneous permit approvals (for the same facility) in two different locales. While duplicative in effort, this tactic was used emphasize the importance of fairness and to help prevent any one community from feeling unduly burdened.

Desired Outcomes

Achieve Agreement that the Status Quo is Unacceptable

"Need is the pivotal question in any siting process."[3] Without first determining that a problem exists, it will be extremely difficult to secure the support (or consent) from a host community to site a facility designed to address the project need. In parallel, the consequences of a "no action" option are also fundamental to achieving consensus that the *status quo* is not sustainable.

Implementation Considerations

- "How" project need is determined is as important as "what" that need may be. Far from being a sterile and objective process, need-determination is replete with assumptions and judgements about present and future conditions. Given the uncertainty inherent in any need-determination process, opponents are likely to find ample opportunity to build support for their cause if they feel excluded from participating in the process. A simple declaration of project need augmented by a "just trust us" statement from project proponents is not a recommended strategy. Again, the components of a Broad Based Participatory Process provide an excellent forum and structure for the collaborative determination of project need.

Choose the Solution that Best Addresses the Problem

This outcome follows directly from the collaborative determination of project need. Again, securing consent is best achieved if stakeholders support both the problem definition *and* the proposed solution.

Implementation Considerations

- Recall that the focus of the Credo is on the behavior of project proponents and how this may be modified to build process trust and credibility. Having determined the project need but then short-circuiting dialogue around developing a solution will only serve to weaken the entire process. Accordingly, it is important to ensure that sufficient time and resources are dedicated to a collaborative discussion of proposed solutions.

Guarantee that Strong Safety Standards Will Be Met

It is unreasonable to expect any community to host a LULU that would expose its residents to unwarranted levels of risk. As such, a commitment on behalf of project proponents to uphold stringent health and safety standards is a fundamental pre-requisite.

Implementation Considerations

- While the adherence to safety standards is understandably an important component to the Credo, how those standards are enforced, and by whom, is also worthy of discussion. While the erosion of trust between public stakeholders and government officials is well recognized, it may be easier to appreciate this dynamic when those regulatory officials are stationed great distances (hundreds if not thousands of miles) from the community in question. If, however, those sufficiently-authorized officials were based in close proximity to the host community it would be reasonable to assume increased levels of trust between the parties may be realized.

Use Contingent Agreements

To increase public confidence in the operation of a facility, the use of contingent agreements should be considered. These agreements define courses of action to be taken in the event of an accident, release, or other unforeseen occurrence that has the potential to influence the integrity of facility operation. Contingent agreements may also include compensation mechanisms or other terms to hold local stakeholders harmless in the event of a component or system failure.

Implementation Considerations

- Contingent agreements emphasize immediate local action as opposed to federal (and arguably more bureaucratic) responses. From the perspective of a project developer, this regulatory duality may be viewed as a source of project risk or uncertainty.

Accordingly, care should be taken to minimize this uncertainty by defining, in advance and to the degree possible, the specifics that would warrant local action.

Work for Geographic Fairness

Siting facilities in consideration of an equitable geographic arrangement is a technique to address the principle of distributive justice referenced in the discussion of fairness. Advocates of the distributive justice belief system believe that this approach leads to siting of LULUs within disadvantaged communities. Rather, distributive justice proponents would argue for burdens and costs to be spread equally over the whole population.

Implementation Considerations

- To the extent practical, and in consideration of regulatory or process constraints, engage with stakeholders across the geographic spectrum both in problem definition and solution development. Such an approach develops the foundation for voluntary submissions from geographically disperse respondents. Furthermore, this consideration may also be incorporated into final site selection criteria provided it is part of a collaborative decision-making process.

Fully Address All Negative Aspects of the Facility

In the event that negative impacts cannot be fully prevented or sufficiently mitigated, compensation may be negotiated in the form of property value guarantees or other arrangements.

Implementation Considerations

- While the burden for this task, as with all the others in the Credo, falls squarely on the shoulders of the project proponent, the definition of "negative aspects" (and their accepted mitigation measures) is one of the elements of the Credo that requires the most public input. In addition, care should be taken to ensure that mitigation is implemented equally across all potential host communities to maintain fairness standards.

Make the Host Community Better Off

As discussed previously, the feeling by host communities that facility costs exceed local benefits is a key contributor to the NIMBY dynamic. To rectify this apparent imbalance, compensation if often used.

If managed properly, compensation programs seek to make facility siting a "positive sum game"[4] where all project stakeholders (developers, host communities and other key stakeholders) may derive a net benefit from the project. Local community benefits may be in the form of tax abatements or neighborhood improvements and are generally addressed as part of the competitive siting process.

However, the issue of compensation and payments to host communities is not without significant controversy. First, there is the notion that compensation may be used to weaken site selection, environmental, and other performance standards. Such a concern was expressed by Senator Richard Bryan of Nevada in the early days of the U.S. nuclear waste repository program:

> *The framers of the NWPA realized that, in order for any state ever to be able to accept a repository, a situation must be created whereby the leaders and citizens in that state are able to see and believe that the site selected was the product of an impeccable, scientifically objective screening process. No amount of compensation or federal "incentives" can ever substitute for safety and technical suitability in the site selection effort.*[5]

In parallel, there are those who argue that economically disadvantaged communities are under increased pressure to accept LULUs as their desire for economic opportunities may impair their decision making process. Or consider the situation where a potential host community exhibits a strong commitment to the public good. In this case, the presence of compensation may hinder public support for the siting of a LULU due to the fact that monetary compensation "crowds out" citizen's intrinsic motivation or civic duty.[6] Still others have raised the question as to whether or not it is inequitable to have only economically disadvantaged communities participate in the voluntary site selection process:

> *Namely, it might be the case that poor communities are more apt to examine the facility objectively, since they must go beyond their initial visceral rejection of nuclear waste and consider whether or not the proposed facility is a safe and appropriate solution to the problem. In other words, offers from poor communities might be better informed than are the decisions of wealthier communities not to host the facility.*[7]

Implementation Considerations

- While some would see the issue of compensation as nothing but an impenetrable ethical quagmire, there are others who view the issue as "not as tricky as it might seem."[8] One key is the clear differentiation between a bribe and a form of benefit sharing. One common example of this benefit-sharing approach are Community Benefit Agreements (CBAs), in which particular projects are supported provided they bring opportunities to local workers and communities.[9] Examples of successful CBAs include development projects in San Francisco, Los Angeles, Pittsburgh and New York. Clearly, CBAs for large-scale commercial or residential developments are very different from hazardous or nuclear waste management facilities, but there is a degree of congruency in the underlying logic and applicability.

- Again, as with other complex issues surrounding facility siting, the determination of an equitable, effective and enduring compensation program is best resolved by those key project stakeholders who have the most at stake as part of the aforementioned "Broad Based Participatory Process."

---

[1] Kunreuther, Howard, Lawrence Susskind, and Thomas Aarts. "The facility siting credo: Guidelines for an effective facility siting process." Environmental Impact Assessment Review (1991).

[2] Laws, David, and Lawrence Susskind. "Changing perspectives on the facility siting process." Maine Policy Review 1, no. 1 (1991): 29-44.

[3] Ibid.

[4] Lesbirel, S. Hayden, and Daigee Shaw. "Facility siting: issues and perspectives." Challenges and Issues in Facility Siting (2000).

[5] Bryan, Richard H. "The politics and promises of nuclear waste disposal: The view from Nevada." Environment: Science and Policy for Sustainable Development 29, no. 8 (1987): 14-38.

[6] Ibid.

[7] Easterling, D., and Howard Kunreuther. The Dilemma of Siting a High-Level Nuclear Waste Repository. Springer Science & Business Media, 1995.

[8] Larry Susskind, "Overcoming the Not-In-My-Backyard (NIMBY) Syndrome," *The Consensus Building Approach* (blog), http://theconsensusbuildingapproach.blogspot.com/2010/08/overcoming-not-in-my-backyard-nimby.html

[9] Ibid.

From: Tracy Terry [TTerry@bipartisanpolicy.org]
Sent: Friday, October 28, 2016 12:22 PM
To: Consent Based Siting
Subject: BPC Comments on Consent Based Siting
Attachments: BPC Report on Consent Based Siting.pdf; BPC Report on Consent Based Siting - Cover Letter.pdf

Please find attached a recent report from the Bipartisan Policy Center's Nuclear Waste Council—*Moving Forward on Consent-Based Siting for Nuclear Waste Facilities*, along with a cover letter from the Council's Co-Chairs, Norm Dix, former U.S. Representative from Washington and now Senior Policy Advisor, Van Ness Feldman LLP, and Sonny Perdue, former Governor of Georgia and Founding Partner, Perdue Partners LLC.

We very much appreciate the work the Department has undertaken on this important topic, as well as the opportunity to submit comments. We hope that you will find our report valuable to your continued work on nuclear waste.

Best,
Tracy Terry

Tracy Terry
Director | Energy | Bipartisan Policy Center
(202) 204-2411 | bipartisanpolicy.org

Moving Forward with Consent-Based Siting for Nuclear Waste Facilities

Recommendations of the BPC Nuclear Waste Council

September 2016

BIPARTISAN POLICY CENTER

ACKNOWLEDGMENTS

Supported by grants from The William and Flora Hewlett Foundation, The Carnegie Institution for Science, The Alfred P. Sloan Foundation, and The MacArthur Foundation.

DISCLAIMER

The findings and recommendations expressed herein do not necessarily represent the views or opinions of the Bipartisan Policy Center's founders or its board of directors.

Nuclear Waste Council Members

Norm Dicks, Co-Chair
Former U.S. Representative from Washington
Senior Policy Advisor, Van Ness Feldman LLP

Sonny Perdue, Co-Chair
Former Governor of Georgia
Founding Partner, Perdue Partners LLC

Vicky A. Bailey
Former Member, Federal Energy Regulatory Commission
Former Member, Blue Ribbon Commission on America's Nuclear Future

Frances Beinecke
Former President, Natural Resources Defense Council

David Blee
Executive Director, U.S. Nuclear Infrastructure Council

Peter Bradford
Adjunct Professor, Vermont Law School
Former Member, Nuclear Regulatory Commission

Alex Flint
Senior Vice President of Governmental Affairs, Nuclear Energy Institute

Beatrice Brailsford
Nuclear Program Director, Snake River Alliance

Richard A. Meserve
President, Carnegie Institution for Science
Former Chairman, Nuclear Regulatory Commission

Phil Sharp
Former President, Resources for the Future
Former Member, Blue Ribbon Commission on America's Nuclear Future

David Wright
Former President, National Association of Regulatory Utility Commissioners
Former Chairman, South Carolina Public Service Commission

Staff

Tracy Terry
Director of the Energy Project

Samuel Brinton
Senior Policy Analyst

Table of Contents

Introduction

For decades, the United States has been grappling with the problem of what to do with the tens of thousands of tons of spent nuclear fuel and high-level radioactive waste generated by the nation's commercial nuclear power industry and defense programs. Despite many efforts by the executive branch, Congress, industry, citizen groups and others—and despite the expenditure of billions of dollars, the United States still has no workable, long-term plan for permanently disposing of these wastes. Meanwhile, the federal government's financial liability for failing to meet its contractual obligation to accept spent fuel from the nation's commercial nuclear power reactors—a liability that is already in the billions of dollars—increases with every year of continued paralysis and delay.

Launched by the Bipartisan Policy Center in 2014, the Nuclear Waste Council seeks to expand national and regional conversations on nuclear waste and to develop policy options that ultimately could lead to an implementable nuclear waste strategy. In the first phase of its work, the council convened five regional meetings across the United States. Each meeting included a private discussion among key stakeholders, chosen for their broad representation and varying perspectives on the nuclear waste issue, and a public event that provided an opportunity to hear local and regional concerns. The objective of these meetings was to identify barriers to solving the nuclear waste problem and explore options for overcoming these barriers.[1] Each meeting also provided an opportunity to focus on specific topics of

particular interest to local groups and the host region (for example, stranded spent fuel in California and New England; the management of defense waste in the Southeast and Northwest; and waste transportation issues in the Midwest).

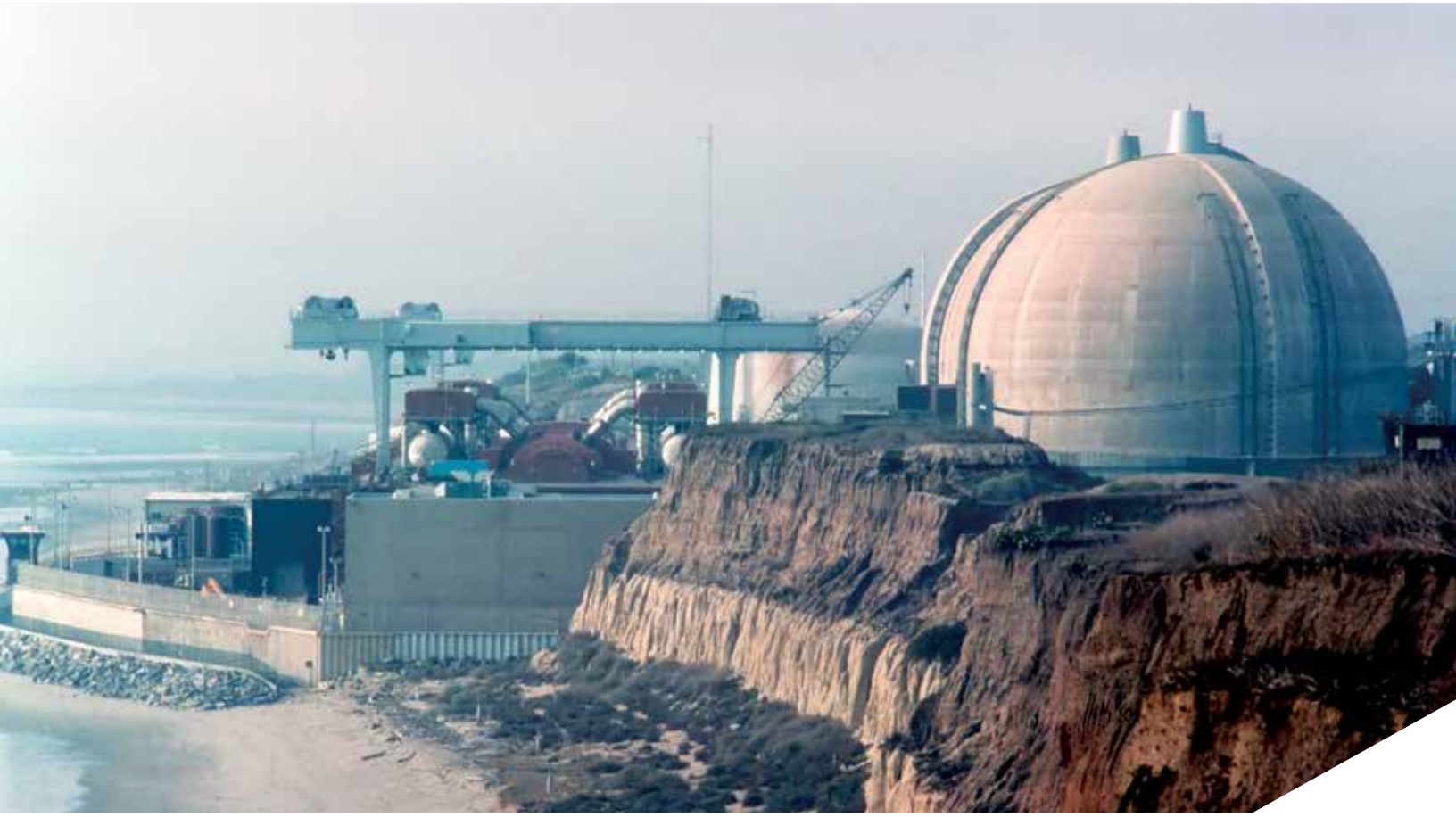
This report is the culmination of the second phase of the council's activities. It provides an update on recent developments in the nuclear waste policy arena, including relevant legislative proposals, court decisions, and current federal efforts to launch a new consent-based siting process. This report also summarizes insights from experience with other hard-to-site facilities; results from a survey, conducted by BPC, that was designed to solicit the views of state officials on a range of issues related to siting nuclear waste facilities; and input from a regional stakeholder meeting with members of communities that are considering hosting new private nuclear waste management facilities. The report concludes with recommendations intended to help advance a new approach to siting nuclear waste facilities and spur renewed efforts by all parties to find durable solutions for managing and safely disposing of these materials.

It is important to note at the outset that the council did not debate and has not taken a position or developed a recommendation on whether or how to proceed with efforts to license a geologic nuclear waste repository at Yucca Mountain. Some members of the council take the position that the Yucca Mountain licensing process should go forward, even though it is not consent-based. Other members have reached the same conclusion as the Obama administration: that the Yucca Mountain site and licensing process are unworkable and that a new strategy is needed to identify and develop a permanent geologic repository for spent nuclear fuel and high-level radioactive waste.

As a group, the council concurs with the Blue Ribbon Commission on America's Nuclear Future that a fundamental overhaul of the U.S. nuclear waste management program is required and that a different approach should be taken to site future waste management facilities, regardless of the fate of Yucca Mountain. The nation's existing inventory of spent nuclear fuel and high-level radioactive waste already exceeds the quantity that could be disposed of at Yucca Mountain under current statutory limits. And other critical elements of a robust, integrated waste management system—including facilities for the consolidated storage and transport of these materials—will face similar siting challenges in any case. Most importantly, no resolution of the Yucca Mountain controversy will erase the record of management failures and the loss of trust that have brought the nuclear waste program to its current state.

For all of these reasons, we believe a new path forward is needed. This will not be possible without congressional action on legislation that changes the current regulatory and statutory framework for managing and disposing of nuclear waste in the United States.

Background and Context



The history of the U.S. nuclear waste management program is a long and troubled one.[2] Congress first attempted to define a path for the long-term disposition of nuclear waste more than a generation ago, with the passage of the Nuclear Waste Policy Act of 1982. Thirty years later, for various reasons, the path forward is uncertain. Despite a robust scientific consensus that disposal in a deep geologic repository is the best practical option for isolating spent nuclear fuel and high-level radioactive waste over very long timescales, and despite broad agreement that future generations should not be burdened with the task of cleaning up these wastes, prospects for successfully constructing and opening a geologic disposal repository in the United States appear no better than they were decades ago.

Today, utilities are storing approximately 72,000 tons of spent nuclear fuel from the operation of commercial nuclear power plants at over 100 reactors across the nation. Roughly two-thirds of this spent fuel is being held in concrete pools, submerged in water. The remainder, roughly one-third of the inventory, has been moved to dry storage—typically in large casks or canisters—on site.[3] Continued operation of the current fleet of reactors is expected to generate an additional 70,000 metric tons of spent fuel for a total of approximately 140,000 metric tons. (By contrast, the quantity of waste that may be stored at the first deep geological repository is limited by statute to 70,000 metric tons.) The construction and operation of new nuclear power plants will generate more nuclear waste.

In addition, the U.S. Department of Energy (DOE) manages roughly 90 million gallons of high-level radioactive waste in the form of liquids, sludges, and solids generated by defense nuclear activities. Most of this material is being stored at former DOE nuclear weapons sites, including the Hanford Site and the Savannah River Site (in Washington State and South Carolina, respectively), at Idaho National Laboratory in Idaho, and at the West Valley Demonstration Project site in New York State.[4] DOE is in the process of vitrifying some of this waste into glass form as part of cleanup activities underway at several of its former weapons sites.

Pursuant to the 1982 Nuclear Waste Policy Act, DOE entered into contracts with nuclear utilities that obligated the federal government to begin removing spent fuel from commercial reactor sites in 1998. The same legislation also established a funding mechanism, in the form of the Nuclear Waste Fund, which is supported by a small fee on each kilowatt-hour of nuclear-generated electricity, to pay for the federal government's management of commercial spent fuel. This arrangement has all but broken down as progress toward licensing a permanent geologic repository has stalled. Utilities have begun suing the federal government to recover costs associated with storing spent fuel at reactor sites long past the time when DOE was supposed to have begun removing this material, and the courts have ordered that further collection of Nuclear Waste Fund fees be suspended in light of the current lack of progress in the federal government's waste management program.

Two events in particular stand out as important turning points in the contentious record of U.S. waste management efforts to date. The first was the initial decision by Congress, in the Nuclear Waste Policy Act Amendments of 1987, to designate Yucca Mountain in Nevada as the only site to be considered for the nation's first permanent disposal repository. This decision itself was prompted by the difficulties and political opposition encountered in early efforts, under the original 1982 legislation, to identify two potential repository sites.[5] The years of protracted political, legal and regulatory contention that followed (see text box on p.17) led to a second highly consequential development: the Obama administration's decision, in 2010, to stop work on the Yucca Mountain repository, based on a judgment that the project was "unworkable" in light of the ongoing and strongly held opposition of Nevada's citizens and top elected officials. In 2012, the Blue Ribbon Commission on America's Nuclear Future (hereafter the Blue Ribbon Commission), formed at the direction of President Obama to undertake a wholesale re-examination of the nuclear waste issue, delivered a comprehensive set of recommendations for redirecting and reinvigorating the federal government's waste management program, but these recommendations have yet to translate into significant legislative action.[6]

In the four years since the Blue Ribbon Commission issued its report, no decisive step has been taken, either toward resolving the impasse over Yucca Mountain or to chart a new path forward that does not include trying to restart the abandoned Yucca Mountain process. However, a number of actions by the legislative, executive, and judicial branches since 2012 could set the stage for a new administration and Congress to re-engage with the nuclear waste issue and move the waste management program forward.

First, several bills designed to implement some of the Blue Ribbon Commission's recommendations have been introduced in Congress. One of the most recent, S. 854, the Nuclear Waste Administration Act of 2015, was introduced in March 2015.[7] It would create a dedicated new waste management organization within the executive branch to take over DOE's nuclear waste responsibilities, establish a process for approving interim consolidated storage facilities, provide for a consent-based approach to siting future waste facilities, and resume the collection of Nuclear Waste Fund fees from nuclear utilities.

Three other bills introduced in the 114th Congress deal with narrower issues related to nuclear waste: H.R. 3643, the Interim Consolidated Storage Act of 2015, would provide legislative assurance that private companies can enter into contracts with DOE to store spent nuclear fuel and allows costs from these contracts to be paid from the Nuclear Waste Fund. H.R. 3483 (Senate companion bill S. 2026), the Stop Nuclear Waste by Our Lakes Act of 2015, calls for a joint international review of a proposed nuclear waste facility under construction near Lake Huron in Canada. Finally, H.R. 1364 (Senate companion bill S. 691), Nuclear Waste Informed Consent Act, requires that a written, binding agreement be struck between the Nuclear Regulatory Commission (NRC), the governor of the repository host state, the local unit of government, nearby local units of government, and affected Indian tribes before authorization of a geological repository can proceed. To date, no action has been taken on these bills.

Within the executive branch, DOE has begun working to implement some elements of the Blue Ribbon Commission plan as part of a new strategy released in January 2013.[8] Subject to available funding, DOE's new waste management strategy calls for efforts over the next ten years to license and construct a pilot interim storage facility by 2021,[9] pursue the siting and licensing of a larger interim storage facility, and achieve "demonstrable progress" toward characterizing repository sites with the aim of opening a geologic repository by 2048. In addition, DOE has indicated that it intends to implement this strategy using the "phased, adaptive" approach recommended by the Blue Ribbon Commission, including pursuing a "consent-based" approach to siting future storage and disposal facilities.

In January 2016, DOE launched its consent-based siting initiative with a kick-off meeting in Washington, D.C. The initiative will consist of three phases: (1) an initial public engagement effort designed to solicit stakeholder input on how to structure a consent-based siting process; (2) an effort to design a siting process based on input gathered during the first phase; and (3) further work with communities that might be interested in hosting a nuclear waste management facility.[10] As of this writing, DOE has held public meetings on consent-based siting in Chicago, Illinois; Atlanta, Georgia; Sacramento, California; Denver, Colorado; Boston, Massachusetts; Tempe, Arizona; Boise, Idaho; and Minneapolis, Minnesota.

Concurrent with announcing its consent-based siting initiative, DOE in 2015 announced an important policy change with respect to the management of defense and civilian nuclear waste. Specifically, DOE indicated that it would pursue a separate disposal facility for high-level radioactive wastes generated by the nation's nuclear weapons programs rather than planning for these wastes to be commingled with spent nuclear fuel from commercial nuclear power reactors in the same repository, as had been the government's policy since 1985. DOE's decision concerning defense high-level waste was prompted in part by continued lack of progress toward a permanent disposal repository and by the implications of this lack of progress in light of existing agreements between DOE and the states of Idaho, South Carolina, and Washington. These agreements commit the federal government to clean up and remove high-level radioactive waste from former nuclear weapons production sites. To meet the deadlines they establish, the federal government will need to site and construct a facility capable of accepting DOE-owned spent fuel and high-level defense wastes within the next two decades or risk incurring substantial penalties.[11]

Recent court decisions also have the potential to re-shape the nuclear waste debate going forward. A 2012 ruling by the D.C. Circuit Court of Appeals, for example, forced the NRC to reconsider the waste management assumptions on which its licensing actions for commercial nuclear reactors had been predicated, including specifically the assumption that a permanent waste repository would become available when needed.

Since finalizing a new Continued Storage Rule that does not presuppose the eventual availability of a permanent disposal repository, the NRC has resumed issuing license approvals and extensions for commercial reactors (such approvals and extensions had been suspended for a period of two years following the court's 2012 decision). The new rule was challenged by states and environmental groups, but it has since been upheld.

Meanwhile, a separate finding by the D.C. Circuit Court of Appeals concerning DOE's authority to continue collecting the per-kilowatt-hour nuclear waste fee[12] in light of the status of the Yucca Mountain project prompted DOE to stop charging the fee in May 2014. Until Congress acts to clarify or amend DOE's authority to collect the fee, this decision stops the flow of new revenues from nuclear utility customers (roughly $700 million per year) to the Nuclear Waste Fund to support federal waste management activities. In combination with ongoing legal actions by nuclear utilities to recoup costs associated with storing spent fuel at reactor sites, the suspension of nuclear waste fee collections underscores the federal government's (and, ultimately, U.S. taxpayers') mounting exposure to financial liability as a result of DOE's failure to meet its contractual obligations related to the management of commercial spent nuclear fuel.

Another important legal decision came in August 2013, when the D.C. Circuit Court of Appeals found that the NRC was legally required to continue its review of the Yucca Mountain license evaluation until Congress directed otherwise or the NRC ran out of funds for this purpose. In response, the NRC affirmed its commitment to completing key documents (subject to available funds), issuing the last of five Safety Evaluation Reports for the proposed Yucca Mountain repository design in January 2015. NRC staff found that the proposed facility could meet current regulatory requirements for post-closure performance but also identified three outstanding sets of issues that would have to be resolved before a license to authorize construction of the Yucca Mountain facility could be approved.[13] These concerned land ownership and control, water rights, and a required supplement to the environmental impact statement.

Recent years have also seen the emergence of voluntary community- and private-sector-led efforts, discussed in later sections of this report, to site a consolidated storage facility for commercial spent fuel. A plan by Waste Control Specialists, a private company, to build such a facility in Andrews County, Texas has drawn support from state and local officials. Likewise, in New Mexico, a consortium of local governments, the Eddy-Lea Energy Alliance, has voiced interest in hosting a consolidated storage facility.

Other noteworthy nuclear-waste-related events in the last several years include problems at the federal government's Waste Isolation Pilot Plant (WIPP) in New Mexico in February 2014, which disposes of transuranic defense wastes, and difficulties siting DOE-funded research projects aimed at demonstrating deep borehole disposal of radioactive waste. The incidents at WIPP involved an accidental fire on a salt haul truck due to inadequate maintenance and a small release of airborne radioactivity through the facility's ventilation exhaust system because of the use of incorrect packing material in a waste drum and subsequent explosion. They led to the temporary shutdown of the facility, which as of this writing has not yet resumed operations (see text box on p.17 of this report for a further description of WIPP).[14] In the case of the borehole demonstration projects, proposals to move forward with two project sites in North and South Dakota have stalled due to local opposition. This has prompted DOE to issue a new request for proposals that provides more explicit direction to potential contractors concerning the need for an extensive public outreach component to be included in any plans for conducting the borehole demonstration project.

Consent-Based Siting

The inherent challenge of siting facilities that manage and ultimately dispose of highly radioactive nuclear materials is at the core of the U.S. government's failure, despite decades of effort and billions of dollars in expenditures, to meet its commitments regarding the safe long-term disposition of spent nuclear fuel and high-level waste. As the Blue Ribbon Commission observed in its final report, "finding sites where all affected units of government, including the host state or tribe, regional and local authorities, and the host community, are willing to support or at least accept a facility has proved exceptionally difficult." For this reason, a new consent-based approach to siting is central to both the Blue Ribbon Commission's recommendations and to the nuclear waste management strategy announced by DOE in 2013.

Because BPC's Nuclear Waste Council shares the view that designing and implementing a successful consent-based siting process is essential to getting the nation's nuclear waste program on track, the council devoted much of its effort to exploring the elements of a consent-based siting process and developing recommendations for future siting efforts, whether initiated by DOE, by a new federal waste management entity, or by another organization or even private firm. Not surprisingly, there are widely disparate views on the council as to what constitutes consent.

This chapter summarizes the results of the council's investigation, highlighting findings from a review of the theory and practice of consent-based siting, responses from a survey of state officials on the topic of siting nuclear waste management facilities, and input gathered at a regional stakeholder meeting with the Texas and New Mexico communities that have indicated interest in potentially hosting a consolidated storage facility. The text box on page 17 provides further background on DOE's siting experience with the Yucca Mountain repository and the Waste Isolation Pilot Plant. These two projects offer a useful contrast in approach and outcomes that serves to illustrate why the consent-based approach is widely viewed as more promising for future siting efforts. Throughout this discussion we have also sought to articulate the range of views expressed by council members with respect to critical questions and challenges for a consent-based siting process.

A. *Elements of a Consent-Based Siting Process: Applying the Facility Siting Credo to Nuclear Waste Management Facilities*

Reviewing the last 25 years of experience with siting large, potentially controversial industrial facilities suggests that the traditional "decide, announce, defend" approach—in which the public is engaged, often in a perfunctory manner, only *after* key decisions about a facility have already been made—has increasingly failed to produce desired outcomes. This is especially (but not only) true in the case of "noxious" facilities that are widely perceived as undesirable due to the public health, safety, or environmental risks they pose. Increasing public awareness and concern and changing expectations about transparency, public consultation and input since the Cold War era—when many existing nuclear facilities were sited—have undoubtedly played a role in changing the outlook for future siting efforts.

These realities, and the siting failures of more recent decades, have therefore prompted interest in alternative approaches that stress voluntary consent by host communities, together with active engagement and trust building among stakeholders throughout the siting process. Council members hold differing opinions on state regulatory authority and on the question of what constitutes consent, but there is general agreement that the elements discussed in this section are important to a consent-based approach.

In 1990, a national collaboration involving academic researchers, public officials, and private sector representatives, all of whom had experience with siting controversial projects, developed a Facility Siting Credo ("Credo") designed to address many of the issues and controversies that had derailed past efforts to site noxious or locally unwanted facilities.[15] The Credo includes fourteen elements: the first seven of these elements describe procedural steps in the siting process; the remaining seven elements describe desired outcomes of the siting process. These elements, as they appear in the Credo, are listed below:[16]

Procedural Steps

1. Institute a broad based participatory process
2. Seek consensus
3. Work to develop trust
4. Seek acceptable sites through a volunteer process
5. Set realistic timetables
6. Consider a competitive siting process
7. Keep multiple options open at all times

Desired Outcomes

8. Achieve agreement that the status quo is unacceptable
9. Choose the solution that best addresses the problem
10. Guarantee that strong safety standards will be met
11. Use contingent agreements
12. Work for geographic fairness
13. Fully address all negative aspects of the facility
14. Make the host community better off

Many elements of the Credo are echoed in the approach to siting recommended by the Blue Ribbon Commission report and endorsed by DOE in its 2013 management strategy for nuclear waste. For example, the Blue Ribbon Commission describes an overall approach that is explicitly consent-based, transparent, phased, adaptive, standards- and science-based, and governed by partnership arrangements or legally enforceable agreements. In its 2013 management strategy, DOE offers its interpretation of what consent-based siting means:

In practical terms, this means encouraging communities to volunteer to be considered to host a nuclear waste management facility while also allowing for the waste management organization to approach communities it believes can meet the siting requirements. Under such an arrangement, communities could volunteer to provide a consolidated interim storage facility and/or a repository in expectation of the economic activity that would result from the siting, construction, and operation of such a facility in their communities.

As noted in the previous chapter, DOE launched a consent-based siting initiative in early 2016 and is currently engaged in gathering input from stakeholders on how to design a process that is more likely to produce successful siting outcomes. Many Council members responded to DOE's recent Invitation for Public Comment on this topic and submitted comments that reflect their unique views concerning specific aspects of a consent-based siting process.

B. Results from a Survey of State Officials

Throughout the history of the U.S. nuclear waste management program, the strongest opposition to siting specific facilities has typically come from state governments that are concerned about waste in their communities and perceive primarily negative impacts from their selection as a repository site. At a local level, by contrast, the direct economic benefits from hosting a facility might be seen by some communities as likely to outweigh expected negative impacts.[17] This history has been mixed and is not easily summarized as one marked by state opposition and local acceptance. The challenge for any consent-based siting process, however consent is defined, is to work with leaders at all levels of government—state, tribal, and local—to address concerns, build trust, and provide assurance that host governments will retain a degree of control and an active role in key decisions going forward. To gain insight into how this might be accomplished, the BPC Nuclear Waste Council surveyed governors, state attorneys general, state legislative leaders, and state regulators, including heads of state environmental protection agencies. Ultimately, the council received survey responses from twelve states.[18]

Overall, these survey responses suggest that there is a wide range of views toward nuclear waste facilities among current state officials. When asked whether their state would be open to exploring the possibility of hosting a consolidated storage facility or deep geologic repository,

for example, the responses ranged from "No, under any circumstances" to "Yes, the state would consider any such opportunity." Other survey respondents indicated a general openness to considering proposals, but cited specific concerns that would have to be addressed (such as impacts on groundwater in a state that is heavily reliant on groundwater). Questions about what types of information a state might need to consider hosting a facility and whether holding a statewide referendum would be necessary to ratify consent likewise elicited a range of responses.

A question about key attributes of a consent-based process drew answers that echoed many of the elements included in the Facility Siting Credo and in other studies. Specifically, respondents mentioned thorough evaluation of policy, economic, health, technical and environmental issues; transparency; candor; efficiency; voluntary participation and consent; financial backing; political support and leadership; strong, specific technical criteria; public input and full engagement; and rigorous impact analysis. Questions about what form consent might take and about where in the process a state's consent should be considered irrevocable drew a mix of responses, including "I just don't know." By contrast, a more general question about the merits of a consent-based approach to siting in principle drew near-universal support from survey respondents. And all respondents answered in the affirmative when asked if they would be interested in participating in regional group discussions about siting nuclear waste facilities with other state government leaders.

C. Insights from a Regional Stakeholder Meeting

On March 29, 2016, the Nuclear Waste Council held a regional meeting in Eunice, New Mexico. The area around Eunice hosts the Waste Isolation Pilot Plant, the National Enrichment Facility, and—just across the border in Andrews County, Texas—the only commercial U.S. facility licensed to treat, store, and dispose of certain classes of low-level radioactive waste. The latter facility is operated by Waste Control Specialists (WCS), which is seeking an NRC license to construct a facility for the consolidated storage of commercial nuclear spent fuel. This proposed new facility would also be located in Andrews County, Texas.

Because of these existing and proposed facilities, local communities in southeastern New Mexico and western Texas have extensive first-hand experience with siting and hosting nuclear-related projects and facilities. Their greater familiarity and local economic conditions may have also made them more receptive than other communities to considering new nuclear-related development. As noted in earlier sections, there is state and local support for a new WCS facility to store spent nuclear fuel in Andrews County, Texas, while local leaders in New Mexico's Eddy and Lea Counties have formed an alliance to explore options for hosting a similar type of facility on the New Mexico side of the border. Much of the discussion at the Nuclear Waste Council meeting focused on these proposals and on lessons learned from the experience of siting the National Enrichment Facility.[19]

Attendees noted that local support had been crucial to the successful siting of both the WCS low-level waste facility and the National Enrichment Facility.[20] In the latter case, consistent efforts by the project sponsor, Louisiana Energy Services (LES), to engage and inform the community played a critical role in building and sustaining local support. LES, which had learned the importance of effective community outreach after failed siting efforts in Louisiana and Tennessee, made concerted efforts to engage constructively with local citizens and respond to their questions in an open and timely manner. Parallel efforts to inform the community about technical aspects of uranium enrichment and about the safety standards and regulations that would apply to the facility were also appreciated, as were small but important touches, such as having Spanish

translators available at meetings. Finally, the opportunity to visit an enrichment facility in the Netherlands and speak directly with local citizens and community leaders there was cited as an extremely valuable step toward building confidence. The relatively small size of the local population and its relatively sophisticated understanding of the technical and scientific issues was also helpful; the community valued the economic benefits that came with the facility as well as the opportunity to "build something" and exercise leadership in an area of national interest. A striking contrast between the perspective of rural and urban communities was frequently mentioned; some participants noted that politicians from bigger cities like Austin and Santa Fe often raised questions and concerns, but then failed to consistently appear at local meetings or work with local officials to address these concerns.

Other key points raised at the meeting and in follow-up written comments submitted to the Nuclear Waste Council are summarized below. (Importantly, these comments were heard from meeting participants, many of whom expressed potential support for future facilities; thus, they do not represent the views of all council members.) Together these points suggest that a consent-based approach can offer advantages for future efforts to site nuclear waste facilities, provided that potential host communities understand a consent-based approach to include significant efforts at delivering honesty, transparency, and accountability throughout the siting process.

- Support can be found for new nuclear facilities, provided the sponsoring entity is willing to maintain appropriate communications throughout the siting process and conduct operations in a manner that protects human health and the environment.
- Entities that are invested in the success of a facility will do a better job of communicating and operating that facility. Private entities may be better at building trust and delivering accountability than the federal government.
- A strong state and local government presence is needed, even in the case of facilities that are federally regulated. Different views exist within the council with respect to the appropriate division of state and federal regulatory authority over future nuclear waste facilities (see text box on p.24).
- A new facility has to provide tangible value for the host community. Meeting attendees expressed the view that citizens of western Texas and southeastern New Mexico, in particular, are informed about issues relevant to the nuclear fuel cycle and have successfully navigated two consent-based processes in recent years (although not for facilities that handle commercial spent fuel or defense high-level radioactive waste).
- For the community, confidence in the science and in the safety of the proposed facility was a pre-requisite for moving to the next step. That step included developing a relationship of trust with the company and it required transparency and openness. Citizens want to hear the good and the bad and they appreciated the fact that LES was forthcoming about the difficulties it encountered in past efforts to secure a site.
- Exposure to a similar facility overseas left participants with a greater appreciation for the importance of a strong safety culture and high standards of management.
- Gaining local community approval is more important than requiring every elected official in a state to be 100 percent on board. Including a diversity of views is a good thing, but it can also lead to stalemate if consent is interpreted as unanimity.

- Artificial impediments, such as a one-size-fits-all approach to consent-based siting, must not create hurdles to actual progress. Equal weight should be given to needed facilities that are sited and developed by a private entity as to facilities that are government owned and operated.
- Flexibility is key in that consent will look different for different facilities in different circumstances. Moreover, affected state and tribal governments, as well as potential host communities, must play a key role in defining the mechanisms used to register consent and on the conditions attached to consent. These issues must be negotiated from the bottom up, rather than the top down.
- The process used to select an interim storage site may be very different from the process used to select a permanent disposal site. To the extent possible, multiple siting options should be left open so that competition on the merits—in terms of safety, performance, cost, etc.—can drive the selection of a particular site.

A Contrast in Siting Outcomes: Yucca Mountain and the Waste Isolation Pilot Plant

The breakdown of the federal government's effort to site a permanent geological disposal repository for spent nuclear fuel and high-level radioactive waste at Yucca Mountain in Nevada represents both the defining failure of the decades-old U.S. nuclear waste management program and a highly visible emblem of the growing difficulty of siting controversial facilities of all kinds.

The story of Yucca Mountain begins with the Nuclear Waste Policy Act of 1982 (NWPA), which first established deep geological disposal as the ultimate mode of disposition for spent nuclear fuel and high-level radioactive waste in the United States. Key provisions of the 1982 law established a process for siting two disposal repositories, authorized DOE to enter into contracts with nuclear utilities to begin removing spent fuel from reactor sites by 1998, and instituted a fee on nuclear-generated electricity to fund the government's commercial nuclear waste management program. The law also capped the amount of spent fuel and high-level waste that could be placed in the first repository at 70,000 tons, effectively guaranteeing that a second repository would be needed.

Several years later, in the face of escalating costs, slipping timelines, and growing opposition from states being considered for a possible repository site, Congress amended the NWPA. The amendments adopted in 1987 (over the objections of the state of Nevada) singled out Yucca Mountain as the sole site to be considered for a permanent geologic repository.

It took until 2002, four years after the 1998 deadline for the federal government to begin removing spent fuel from commercial reactor sites, for DOE to complete its site characterization studies and issue an affirmative finding on the suitability of the Yucca Mountain site. A formal recommendation by President George W. Bush and subsequent congressional action to override the continued objections of the state of Nevada cleared the way for DOE to begin preparing an application to the NRC for a license to authorize repository construction. Completing the license application took another six years and raised numerous complex technical, regulatory, and legal issues, but the license application was ultimately submitted in June 2008. Within the next year, however, the Obama administration signaled its intent to terminate the Yucca Mountain project, and in March 2010, DOE moved to withdraw its license application to the NRC. In August 2013, the U.S. Court of Appeals for the District of Columbia Circuit found that the NRC was legally required to continue its review of the original license application unless Congress directed otherwise, or the NRC ran out of funds for this purpose. Congress has not acted to further amend the NWPA and the current impasse over Yucca Mountain remains unresolved. With progress unlikely before a new Congress and administration take office in early 2017, the fate of Yucca Mountain—and of the broader U.S. waste management program—remains uncertain.

Until 2014, when its operations were temporarily suspended because of two accidents, the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico was the world's only operating deep geological repository for long-lived nuclear waste. The facility was designed to accept only transuranic defense wastes for disposal in a deep salt bed. As with Yucca Mountain, the effort to site WIPP took decades (the WIPP site was selected for exploratory work as early as 1974, but the facility did not become operative until 1999), exposed deep state–federal

tensions, and gave rise to numerous contentious and protracted regulatory, legal, and political disputes. In this case, however, the siting process—although far from smooth—ultimately led to the construction of a facility that operated from 1999 to February 2014, when two separate accidents, involving a fire and a release of airborne radiation, closed the facility. Cleanup operations are ongoing and DOE has stated that it intends to re-open WIPP but it is unclear at the time of this writing when operations might resume.

A critical ingredient that ultimately contributed to a successful siting outcome in the WIPP example was local support—from the outset, the Carlsbad business community was in favor of the project as a way to bring economic development to the area. Also key was the ability of federal and state agencies to continue working together over many years to resolve issues and undertake confidence-building measures, despite sometimes strong disagreements. It should also be noted that limits to state authority as a result of federal preemptions with respect to regulating radioactivity were also key to resolving matters—to wit, the state of New Mexico had no legal recourse to object. Notably, to the extent that WIPP can be regarded as a siting success story, and to the extent that the facility won public acceptance at the state level, a key factor was the state's ability to regulate mixed wastes at WIPP under existing hazardous waste laws. In fact, the ability of the host state to regulate a facility, even in a limited fashion, is often cited as an important step in building confidence with state officials that they will retain a measure of control. Also important in gaining public acceptance were agreements that prohibited the facility from accepting spent nuclear fuel and high-level waste and the WIPP Land Withdrawal Act. A final frequently-noted innovation in the WIPP experience was the creation of an independent third-party group—the Environmental Evaluation Group (EEG)—to help address technical issues. The EEG no longer exists (its funding was tied to the licensing and construction process), but it played a critical role in assuring the community that its concerns were being addressed in a rigorous and scientifically sound manner.

While WIPP has been called a siting success, the Blue Ribbon Commission also pointed out that the process that led to this facility was not only long, complicated, and unpredictable, it was made possible by a unique set of circumstances and conditions and thus is unlikely to be replicable. Indeed, the insight that each siting process is inherently unique is central to the concept of consent-based siting itself and to the basic notion that an adaptive and phased approach that puts a high value on preserving options, avoiding pre-conditions, and negotiating from a foundation of trust and transparency is more likely to result in siting success.

Recommendations

This chapter presents recommendations developed by the BPC Nuclear Waste Council based on the activities and stakeholder input discussed in previous chapters. In each case, we provide a short discussion of the basis for our recommendation and its practical implications for the future direction of nuclear waste management efforts in the United States. We also suggest next steps for implementing each of our recommendations.

Here it is also worth emphasizing again that the council did not seek consensus on a recommendation concerning Yucca Mountain. Like the Blue Ribbon Commission, the council takes the view that agreement can and must be found on a new approach to siting future waste facilities, and reforming the nation's nuclear waste program more broadly, even among stakeholders who hold very different views concerning the resolution of the Yucca Mountain controversy. We also did not debate other elements of a comprehensive waste management system, such as the role of consolidated storage and the linkages between storage and disposal. Overarching all of our recommendations is the recognition that new legislation will be needed to fully implement these changes and to provide a coherent statutory and regulatory framework for pursuing a consent-based approach going forward.

Recommendation #1: As part of a fundamental overhaul of the U.S. nuclear waste management program, Congress should establish a new, dedicated nuclear waste management organization, separate from DOE.

Agreement that the status quo is unacceptable is one of the core elements of the Facility Siting Credo discussed in the previous chapter—in this context, it also provides the impetus and core rationale for a larger overhaul of the federal government's nuclear waste management program. The failures of the past several decades are widely acknowledged and have been extensively documented—indeed, if there is a single point on which everyone involved in the nuclear waste policy debate can agree, it is that the approach to date has not delivered results. This has led to a steady erosion of confidence in the federal government's ability to manage nuclear waste and a growing consensus that a change of strategy is needed. It also bears noting, however, that despite this erosion of confidence, few stakeholder groups have suggested that the federal government should be relieved of the burden of managing wastes generated by the commercial nuclear industry.

In the context of a broader overhaul of the nation's nuclear waste management program, there is also some support for the proposition that DOE's past problems, including the loss of trust in DOE voiced by many stakeholders, and the inherent challenges that flow from DOE's large size, multiple missions, exposure to changing political preferences, and dependence on uncertain year-to-year congressional appropriations, argue for transferring primary responsibility for the nuclear waste program to a new organization.[21] This was one of the core recommendations of the Blue Ribbon Commission; it is also the approach that several other countries have taken. There is less agreement about what form a new waste management organization might take in the United States—potential options include a federal corporation, a new federal agency, and a private corporation. A number of studies, including the Blue Ribbon Commission report, conclude that a federal corporation is likely to be the preferred model. The Nuclear Waste Council did not attempt to come to consensus on the best form or structure for a new waste management organization, nor did we seek to resolve the statutory and regulatory tensions that would dictate the powers of such a new organization.

Council members do agree, however, that if there is to be a new entity, it will be important for that entity to deliver certain attributes—such as mission integrity, accountability, effective leadership, management consistency, and a strong safety culture, etc.—regardless of the organizational model adopted. Moreover, to provide effective leadership, appointees who head such undertakings should have demonstrated, in their past careers, strong capacities for successfully developing public trust around the resolution of complex and controversial public policy matters with a significant technological component.

Next Steps: *Comprehensive reform of the U.S. waste management program, including putting the program on sound financial footing and establishing a new waste management organization, requires congressional action. Congress and a new administration should waste no time in carefully considering, debating, and acting on comprehensive legislation to amend and update current law concerning the nation's nuclear waste management program and the siting and regulation of future waste management and disposal facilities.*

Recommendation #2: Future nuclear waste facility siting efforts can and should draw from a growing body of evidence and experience to design and implement siting processes that emphasize voluntary participation, flexibility, transparency, inclusion and consultation, trust, accountability, and scientific and technical integrity.

The current focus on consent-based siting reflects recognition that finding a way to gain broad-based state- and local-level public acceptance is key to moving forward with a successful waste management program. Such acceptance, in turn, requires confidence that

strong, protective safety standards are in place before the siting process goes forward (see recommendation 3, below). Input from our survey of state officials and from attendees at the council's regional meeting in western Texas and southeastern New Mexico increases our confidence that a well-designed consent-based process can yield positive siting outcomes that serve the interests of host communities, states, and tribes, as well as the interests of the nation as a whole. At this point, many stakeholders have weighed in on the key attributes of a consent-based process and on the important design questions and process issues that must be addressed. Future siting efforts can also draw from a wealth of case studies and from the experience of other nations, such as Canada, Finland, and Sweden, that are further along in implementing a consent-based approach to siting a nuclear waste repository.

Given the support that now exists for consent-based siting, the immediate challenge is to translate theory into practice and begin designing and implementing a process that fosters the trust, accountability, engagement, and integrity needed to succeed.

Next Steps: *Recognizing that siting will continue to be a major challenge for the U.S. nuclear waste program, regardless of the fate of Yucca Mountain or of any other individual project, Congress and a new administration should support efforts to work with stakeholders to define and implement a voluntary, consent-based approach to siting.*

The council's remaining findings and recommendations focus on key design features of a consent-based siting process. Throughout this section we refer generically to the "waste management organization" consistent with our recommendation for the creation of a new entity that would assume DOE's current waste management responsibilities.

Recommendation #3: Safety is the first criterion for siting nuclear waste management facilities and for gaining the trust of potential host communities and states. The development of generic safety standards and other siting and operating criteria is therefore a critical near-term priority.

Generic safety standards and siting criteria are important for two reasons. First, they serve the useful purpose of screening potential sites. This makes the overall siting process more efficient because it helps to ensure that time and resources are not spent evaluating sites that would likely prove unsuitable. A second key argument for developing generic standards and criteria before a site is selected has to do with public confidence in the integrity of the process. The public is far more likely to trust standards that were established independent of site selection. By contrast, standards and criteria developed later in the process may be perceived as rigged or tailored to ensure that a particular site passes muster. In fact, exactly this concern arose in the Yucca Mountain context: Because Congress selected the site up front, in a top-down fashion, and because the safety standards being applied to the Yucca Mountain repository were specific to that project, opponents viewed all subsequent regulatory findings as suspect. The possibility that standards could have been adjusted to fit the site undermined stakeholders' trust that the standard-setting process was driven, first and foremost, by safety concerns and by objective scientific considerations.

Ultimately, generic standards and criteria can provide an objective and transparent basis for selecting a particular site over other candidates. As discussed later in this section, the hope in any consent-based siting process would be that multiple communities come forward to express interest. In that case, the process for choosing a particular site should be competitive and stakeholders should have confidence that the outcome is determined on the merits (safety, cost, etc.) and not driven by political considerations.

This case will be easier to make if all proposals are evaluated—at least in the early stages of the site selection and site characterization process—against the same generic standards and criteria.

Next Steps: *The relevant regulatory authorities—in this case, primarily the U.S. Environmental Protection Agency (EPA) and NRC—should begin coordinated efforts to develop and update generic safety and performance regulations for disposal and consolidated storage facilities. These efforts should be conducted in an open and transparent manner so that knowledgeable stakeholders and members of the public can understand the thinking behind the standards and have access to the information and assumptions that regulators are using to make decisions in the standards-setting process.*

Recommendation #4: For consent-based siting to succeed, host communities and affected states must be empowered to engage as full participants in the process. Therefore, it will be important to ensure that communities and states have access to the technical expertise and resources needed to play a meaningful consultative role in key decisions.

Active engagement and meaningful consultation with host communities, states, and tribes is central to building the trust needed for a consent-based siting process to succeed. As the Blue Ribbon Commission observed:

Trust, in fact, is often the core issue whenever different parties are involved in a complex adjudicatory process—and it can be especially difficult to sustain when much of the power or control is viewed as being concentrated on one side.[23]

To address this potential imbalance of power, the authors of the Credo recommend that:

Interested and affected parties should have a full opportunity, supported with resources provided by the government, to review site selection criteria, identify research issues and data collection needs, and critique the findings and criteria on which siting decisions are made.[24]

Experience in the United States and elsewhere underscores the importance of empowering potential host communities to participate as partners in the siting process. For example, the creation of the Environmental Evaluation Group (EEG), an independent entity that provided technical support during deliberations over the Waste Isolation Pilot Plant (WIPP) in New Mexico, is often cited as having been crucial to building the stakeholder support needed to allow that project to go forward. In 1994, France formed local information and oversight committees to serve a similar purpose,[25] while Belgium provides community partnerships with resources to operate local offices near nuclear waste facilities.

As these examples suggest, a variety of models and mechanisms are available for facilitating meaningful stakeholder participation. Organizational options include citizen advisory groups, task forces, and local monitoring, oversight, and information committees, or simply facilitated access to third-party experts.[26] In addition or as an alternative, various mechanisms can be used to communicate information and solicit stakeholder input, including public hearings, information workshops, study circles, focus groups, and roundtables.

Experience suggests, for example, that the presence of an independent third-party entity to answer questions, assess relevant project data and analyses, and help translate technical findings for a non-expert audience can be extremely valuable in building confidence and trust with community members and other stakeholders. It also suggests that local councils, in particular, can be useful mechanisms for sustaining community involvement and resolving challenges and disagreements, not only through

the siting process but also in subsequent phases of facility construction and operation, when many communities will want to retain some ongoing oversight role. Finally, some council members have also advocated for and against the notion that this engagement requires reconsideration of state regulatory preemption, as discussed later in this report (see text box on p.24).

Next Steps: *The waste management organization should solicit input from a wide range of communities and stakeholders about the kinds of technical support that would be most needed and useful to facilitate their participation in a consent-based siting process. It should also develop information about the advantages and disadvantages of different models for stakeholder and community engagement and about best practices for facilitating engagement. Specific experience with local councils in the context of nuclear and other types of facilities in the United States and abroad should likewise be examined for best practices and lessons learned.*

The Issue of State Regulatory Control over Nuclear Waste Facilities

Under the Atomic Energy Act of 1954 (AEA), the federal government has exclusive jurisdiction over many aspects of the management and regulation of radioactive materials. As the Blue Ribbon Commission observed, this federal preemption substantially limits options for states to exercise a direct and meaningful role in the regulation of facilities for managing and disposing of nuclear waste.

To address this concern, some stakeholders and council members argue that the AEA should be amended to remove current exemptions—including exemptions from the federal Clean Water Act and Resource Conservation and Recovery Act—that make radioactivity, in effect, a privileged pollutant. In their view, these exemptions are at the core of the distrust with which both commercial and government-run nuclear facilities are often viewed—not only by states, but also by other federal agencies. Such changes to the AEA would make the treatment of radioactive waste consistent with the nation's other bedrock environmental laws.

Advocates for removing the current federal preemption for radioactive materials point out that there is federalist intention at the heart ofmost of the nation's major environmental laws, insofar as these laws provide for state assumption of certain regulatory authorities, including central protections for land, water and air. Where states opt to assume authority, they must meet minimum federal standards and the federal government retains independent oversight and enforcement authority. Depending on state law, states generally use their authority to impose stricter requirements or different regulatory mandates.

To bring the regulation of radioactivity in line with these norms, Congress could legislate a role for EPA and the states by amending the AEA to remove its express exemptions of radioactive material from environmental laws. Some council members believe that addressing this fundamental issue will allow for substantially improved clarity in the regulatory structure and a meaningful state oversight role. Given that establishing trust with state, local and tribal governments will be central to the success of any effort to develop geologic disposal and consolidated storage facilities, some council members believe that this step is essential to allow a truly consent-based and transparent siting process for such facilities to go forward.

Other council members, however, point out that any proposal to repeal the preemption provisions of the AEA (in whole or in part) would be very controversial and could have unintended impacts on other areas of federal law. In their view, the difficulties associated with such an approach are substantial and apparent. Not only would there be widespread opposition (including from the nuclear industry), repealing the preemption provisions of the AEA would undo more than a half-century of settled law and would require harmonizing future state regulations for radioactive materials with those of the NRC, EPA, DOE, and other federal agencies—potentially further delaying the resolution of storage and disposal proposals now under consideration.

It has also been suggested that, short of repealing the AEA's preemption provisions, several alternatives exist that could address, at least to some extent, the concern about ensuring a meaningful role for state governments. For example, states could be given a broader consultative role, or could be given a role in enforcing federal regulatory

standards along with the federal agencies. Another option would be to amend provisions of the AEA that authorize NRC–state regulatory agreements to permit the NRC and a state to negotiate a specific regulatory role for the state in connection with a proposed nuclear waste facility. Other alternatives could include amending the AEA to include citizen-suit provisions, such as exist in the Clean Air Act, or state-certification provisions, such as exist in the Clean Water Act. Such approaches could help satisfy the legitimate concerns of citizens in states where nuclear-waste storage or disposal facilities are located that their interests are being taken into account, without causing a substantial disruption to the settled regulatory and statutory framework that has been in place for decades. Stakeholder input on these and other alternatives would be needed to identify which, if any, approach is likely to be helpful in advancing a consent-based siting process.

Recommendation #5: Future consent-based siting efforts should encourage multiple applications, assure a fair and thorough assessment of all options, avoid down-selecting to a single option too early in the process, and make selections among competing options on the basis of objective, observable metrics.

Experts agree that a wide range of geologic media could be suitable for a deep nuclear waste repository. This means that numerous locations around the country could potentially host such a facility if purely technical considerations were the only concern. An even larger number could be suitable for hosting consolidated storage facilities, including existing and operating reactors that are the only current hosts for spent nuclear fuel. The problems that arose with Yucca Mountain—which was widely viewed as a political choice that was forced on a single state regardless of the merits of the site—highlight the disadvantages of considering only one option and the high cost of failure if a site proves unworkable in that situation. By contrast, a siting process that considers multiple options based on the voluntary participation of host communities is much more likely to produce an outcome that is perceived as fair and driven primarily by safety and performance considerations. These advantages are borne out by international experience: countries that have had more success winning broad political support for a particular repository site—for example, Sweden and Finland—gave serious consideration to more than one location. In Canada, twenty-one communities have stepped forward to be considered for a preliminary assessment of their potential suitability to host a repository site.

To preserve and increase options, incentives should be made available to communities that participate even if they are not ultimately selected to host a facility. Sweden, for example, took the unique approach, when it was deciding between two proposed repository sites, of awarding more compensation to the community that was not selected than to the community that was

selected. The reasoning was that this was fair because the "losing" community would miss the local economic benefits and infrastructure investments that would go to the "winning" community. Likewise, to preserve options, care must be taken to ensure that the criteria used to screen candidate proposals are rigorous without being, as the Blue Ribbon Commission put it, "excessively detailed and rigid."[27] Finally, the siting process itself should allow for the full and transparent evaluation of all proposals that pass initial screening and that are deemed promising (or competitive) from the standpoint of safety performance, cost, local support, transport, and other logistical considerations. This will increase the likelihood that the site that is ultimately selected is viewed as the "best choice" among multiple options. A process that reaches a conclusion only after vetting multiple options also provides insurance against the possibility that changing circumstances disqualify a particular site later in the process. In that case, the work that has been done to evaluate other proposals can help ensure that the process does not have to start again from the beginning and that earlier investments of time and resources are not lost.

Next Steps: *As the waste management organization works with stakeholders to design a consent-based siting process and begin a dialogue with potentially interested communities, attention should be paid not only to the standards and criteria that would be used to screen initial proposals, but also to the incentives that will be available to participants and to the approach that will be taken to select among competing proposals later in the process. In addition, research should continue into the suitability of different geologic media for hosting a repository to ensure that a wide array of potential locations can be considered.*

Recommendation #6: As part of the design of an effective consent-based siting process, it will be important to develop generic timelines for key milestones and decision points to give potentially interested communities and stakeholders a better sense of how the process will unfold and what their options are at different junctures. A particularly difficult but critical aspect of this task will be to identify, in broad terms, where and how in the process commitments by different parties will be considered irrevocable, and where and how the process will provide "off-ramps" that allow participants to opt out of further involvement.

The tendency to set unrealistic and overly rigid deadlines, and then consistently fail to meet them, has been an unfortunate and highly visible hallmark of the U.S. waste management program almost since the beginning. A track record of missed deadlines has also done much to undermine confidence in DOE. Breaking with this track record necessarily entails a new approach to setting deadlines—one that recognizes the inherent tension between flexibility and certainty and the inherent difficulty of predicting how a process that is intentionally designed to be open-ended and adaptive will unfold. On the other hand, as the Blue Ribbon Commission also recognized, "reasonable milestones for major phases of program development and implementation are important to keep the program focused and ensure that it is moving forward." Such milestones also serve an important purpose in providing benchmarks or targets against which stakeholders and policy makers can assess progress and determine whether the program is functioning (and the waste management organization is performing) as intended.

A related issue concerns the design and timing of opt-out or off-ramp mechanisms. Such mechanisms are integral to the approach being recommended, since without a meaningful ability to opt out, a process cannot be said to be consent-based and voluntary. The Blue Ribbon Commission, noting that support for any given facility "can and likely will fluctuate over time," expressed the view that "defining the point at which the right to unconditionally opt out expires must be part of the negotiation between affected units of government and the waste management organization."[28] We concur with this view.

Next Steps: *DOE has already identified timeline development and opt-out mechanisms as two "key questions" to be addressed as part of a consent-based siting process. Gathering stakeholder input on these questions and looking to past siting experience in the United States and abroad for relevant lessons learned should be an important focus of near-term efforts to design a workable consent-based siting process.*

Recommendation #7: All discussions of a consent-based approach to siting nuclear waste facilities point to the importance of incentives as a means to attract voluntary participation in the siting process, sustain local and state support for nuclear waste facilities, and address core demands for equity and compensation. Therefore, a generic list of incentive options should be developed in consultation with stakeholders and community leaders and all parties should also begin thinking creatively about how to maximize incentives, while simultaneously addressing related issues of environmental justice and equity.

The rationale for providing incentives to communities and states that agree to host nuclear waste management facilities is well established in theory and practice. An extensive literature on so-called compensation theory, for example, focuses on "the question of the appropriate role that providing benefits to a host community can play in improving the chances of siting a facility that is perceived to be potentially dangerous."[29]

Incentives also have a long history in practice, including in the context of nuclear waste facilities. The Nuclear Waste Policy Act Amendments of 1987, for example, in addition to mandating sole consideration of Yucca Mountain for a first repository site, also authorized monetary incentives in an effort to overcome state and local opposition to future waste facilities. Under the Act, states could receive up to $20 million per year for hosting a repository and up to $10 million per year to host a storage facility. The 1987 amendments also included an explicitly voluntary, incentive-based effort to site a monitored retrievable storage facility, creating the Office of the United States Nuclear Waste Negotiator and authorizing the negotiator to reach agreements with states and tribes to host such a facility under "any reasonable and appropriate terms." Interested communities were eligible for $100,000 if they volunteered to be considered and potentially several million dollars if they proceeded to a second phase of study. Incentives have likewise featured prominently in efforts by other countries to site nuclear facilities. In France, for example, communities that host underground test facilities receive an $11 million annual "image loss" tax subsidy.

Because the appropriate form and level of incentives will vary with different circumstances, the details of any incentive package cannot be defined in advance but will have to be established through negotiations between the waste management entity and the host community and host tribe or state. However, some general guidance and information—particularly concerning the scope and types of incentives that might be available—is also needed upfront to give potential host communities a reason to get involved.

Two additional points about incentives are worth emphasizing. The first is that incentives don't always work, as the experience of the U.S. Nuclear Waste Negotiator shows. (That effort was shut down in 1995, after only a few years in operation, despite soliciting initial expressions of interest from a number of communities.) In some cases, the benefits that could be realized at a local level will not be sufficient to overcome objections at the regional or state level. In other cases, it may simply prove impossible to negotiate a package of incentives that adequately satisfies all parties such that a project can move forward. Nuclear waste facilities are especially challenging because they tend to elicit strong concerns and objections.

A second key point is that non-monetary incentives should also be considered and offer considerable scope for creativity in tailoring a package to meet the specific needs and preferences of a potential host community. Examples of non-monetary incentives include obvious options, such as infrastructure investment, co-location of related research or technical and administrative support facilities, and support for local or regional economic development and educational institutions, as well as less obvious options such as a greater local role in oversight and decision-making for federal facilities or assets.

Next Steps: *The waste management organization should develop a generic list of incentives that have been made available for hosting nuclear waste and other controversial facilities in the past, both in the United States and abroad, and should work with state and local stakeholders to identify and explore new options.*

Conclusion

Past efforts to site and develop a permanent disposal facility for spent nuclear fuel and high-level radioactive waste in the United States have generated decades of controversy and opposition. Today, more than 30 years after Congress first attempted to define a path for the long-term disposition of nuclear waste in the 1982 Nuclear Waste Policy Act, the future of the federal government's nuclear waste management program remains uncertain. BPC's Nuclear Waste Council was formed to explore the potential for finding common ground, among a diverse set of stakeholders with a wide range of views, for concrete steps to move the nation's waste management policy and program forward.

Against the current backdrop of paralysis and distrust, it is useful to note that despite the apparent intractability of the nuclear waste issue, a substantial and even broad-based consensus exists, not only about the need to address the problem, but also about several core elements of a durable solution. There is broad agreement, for example, that disposal in a deep geologic repository is the best practical option for isolating spent nuclear fuel and high-level radioactive waste over the timescales needed to ensure that these materials do not pose a threat to public health and safety or the environment. Further, there is broad agreement that states, tribes, and local communities must have a voice in deciding where to locate

nuclear waste facilities and must have confidence that the safety of their citizens will be protected. Finally, there is agreement from multiple perspectives that an indefinite continuation of the current stalemate is unacceptable: not least because it leaves some states and communities to bear the involuntary risks and burdens of hosting long-term nuclear waste storage sites while also leaving the U.S. government —and ultimately American taxpayers—exposed to mounting financial liabilities.

Members of the Nuclear Waste Council and many of the stakeholders we consulted over the course of our deliberations agree on one more important point: the most difficult barriers to implementing a sound waste management strategy are fundamentally political in nature rather than technical. Our focus on a new, consent-based approach reflects this view. But we also recognize that simply invoking the term "consent-based" will not solve the problem, nor will it magically dispel the controversies that have bedeviled the nation's nuclear waste program for decades. What consent means, how it is defined, who gets a say—all of these are difficult questions that will spawn their own divisions and disagreements, as will other contentious issues such as the appropriate division of state and federal regulatory authority over future waste management facilities. Thus, we are under no illusions that pursuing a consent-based path forward will be easy, much less that it is guaranteed to succeed. What we also know, however, is that continued delay and inaction serve no one's interests, whether those of the American public, the environment, or the nuclear energy industry. A consent-based approach may be the best option only in comparison to the alternatives. We urge all parties—and most especially a new Congress and administration—to waste no time in making a good-faith effort to try it.

Endnotes

1. In 2014 and 2015, the Council held regional meetings in Boston, Massachusetts; Atlanta, Georgia; Chicago, Illinois; San Juan Capistrano, California; and Richland, Washington. A report summarizing what the Council heard at these meetings can be accessed at: http://cdn.bipartisanpolicy.org/wp-content/uploads/2015/10/BPC_Nuclear_Major-Themes-October-2015.pdf.

2. Detailed accounts of this history are available from numerous sources, including reports by the National Academy of Sciences, the Blue Ribbon Commission, and the Nuclear Waste Technical Review Board, among others. The discussion here provides a very brief synopsis before focusing on more recent developments—that is, developments subsequent to the release of the Blue Ribbon Commission Report in 2012.

3. All spent fuel is placed in pools when it is first removed from the reactor core. After the fuel cools (typically over a period of several years), it can be moved to dry storage. Utilities have increasingly transferred spent fuel to dry storage as they have run out of space in cooling pools or ceased reactor operations.

4. DOE also manages smaller quantities of high-level radioactive waste and spent nuclear fuel from other sources, such as the operation of the U.S. Navy's nuclear-powered ships and submarines, foreign research reactors, and the Three Mile Island accident.

5. The 1982 Nuclear Waste Policy Act attempted to establish a technically sound process for selecting two repository sites, in part to avoid the perception that any one region or state was being asked to bear the entire burden of disposing of the nation's waste inventory. In May 1986, Energy Secretary John Herrington recommended three sites (in Washington State, Texas, and Nevada) as leading candidates for the first repository. At the same time, Secretary Herrington—citing rising costs and changing waste projections—announced that DOE would be suspending its efforts to identify a second repository site.

6. The full report of the Blue Ribbon Commission on America's Nuclear Future can be accessed at: http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf.

7. S. 854, the Nuclear Waste Administration Act of 2015, was introduced by Sen. Lamar Alexander (R-TN) with Senate co-sponsors Sens. Lisa Murkowski (R-AK), Dianne Feinstein (D-CA), Maria Cantwell (D-WA), and Ron Wyden (D-OR). For more information, see: https://www.congress.gov/bill/114th-congress/senate-bill/854.

8. Accessible online at: http://www.energy.gov/downloads/strategy-management-and-disposal-used-nuclear-fuel-and-high-level-radioactive-waste.

9. The focus of this pilot storage facility would be to accept spent nuclear fuel from shutdown reactor sites. The Blue Ribbon Commission recommended that this fuel should be "first in line" for transfer to a consolidated interim storage facility given the disproportionate cost and burden of safeguarding this fuel at sites where there is no longer an operating reactor.

10. See: http://www.energy.gov/ne/consent-based-siting.

11. The agreements contain different specific requirements and deadlines, but under the terms of a 1995 settlement agreement between the state of Idaho, DOE, and the U.S. Navy, for example, all spent fuel currently at Idaho National Laboratory must be transported out of the state by 2035 and all high-level waste currently at the site must be ready for transport by 2035.

12. The amount of the Nuclear Waste Fund fee that was being collected prior to this decision was 1.0 mil, or one-tenth of one cent, per kilowatt-hour.

13. A separate policy brief by BPC outlines the many actions that would need to be taken and issues that would need to be resolved to re-start the Yucca Mountain licensing process. See: http://cdn.bipartisanpolicy.org/wp-content/uploads/2015/07/BPC-Energy-Yucca-Mountain.pdf.

Endnotes

14. A discussion of the incidents at WIPP and links to the reports of two Accident Investigation Boards are available online at: http://www.wipp.energy.gov/wipprecovery/accident_desc.html.

15. The collaboration included two workshops, held in 1989 and 1990 and sponsored by the MIT Hazardous Substances Management Program, the MIT-Harvard Public Disputes Program and the University of Pennsylvania's Wharton Risk and Decision Processes Center.

16. It is important to emphasize here that we include the elements of the Facility Siting Credo not because Council members believe the Credo comprehensively captures every aspect of an ideal consent-based process for siting nuclear waste facilities, but because we believe it offers a useful starting point for discussion and a possible foundation for future efforts to design more successful approaches to siting such facilities.

17. Notably, incentives for hosting a facility have typically been offered at the local, rather than the state level.

18. The Council received survey responses from the states of Connecticut, Colorado, Kansas, Minnesota, New Hampshire, New Mexico, Oregon, South Carolina, Utah, Vermont, Michigan, and West Virginia. In most cases, responses were received from state environmental agency directors, although the council also received a response from a state legislative representative and a state attorney general.

19. The National Enrichment Facility is a plant that enriches uranium using gas centrifuge technology. The plant was opened in 2011 by Louisiana Energy Services, a private company, which now operates under the name Urenco USA. It is important to point out that the National Enrichment Facility is a production facility, as opposed to a storage or disposal facility given that different types of facilities can be expected to present different siting challenges and impose different burdens and benefits on host states and communities.

20. It should be noted that although the BPC Nuclear Waste Council invited a wide range of individuals and organizations to its regional meeting with the aim of capturing the full diversity of views concerning these topics, the views of those who were willing to consider consent were disproportionately represented among attendees.

21. Many of these concerns are reflected in a BPC report on input from a series of stakeholder meetings held in 2015. See: http://cdn.bipartisanpolicy.org/wp-content/uploads/2015/10/BPC_Nuclear_Major-Themes-October-2015.pdf.

23. Blue Ribbon Commission on America's Nuclear Future, 57. http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf.

24. Flynn, James, et al. "Time to rethink nuclear waste storage." Issues in Science and Technology 8.4 (1992): 47.

25. The annual budget of these committees, known in France as "commission locale d'information et de suivi" (CLIS), is €300,000.

26. Additional options are listed and described in NEA Report 7189: Stakeholder Involvement in Decision Making: A Short Guide to Issues, Approaches, and Resources, 2015, available online at: http://www.oecd-nea.org/rwm/pubs/2015/7189-stakeholder-involvement-2015.pdf.

27. Blue Ribbon Commission Report, 94. http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf.

28. Ibid, 56.

29. Howard Kunreuther and Douglas Easterling, "Are risk-benefit tradeoffs possible in siting hazardous facilities?" The American Economic Review 80.2 (1990): 252-256.

Notes

Notes

BIPARTISAN POLICY CENTER

The Bipartisan Policy Center is a non-profit organization that combines the best ideas from both parties to promote health, security, and opportunity for all Americans. BPC drives principled and politically viable policy solutions through the power of rigorous analysis, painstaking negotiation, and aggressive advocacy.

bipartisanpolicy.org | 202-204-2400
1225 Eye Street NW, Suite 1000 | Washington, D.C. 20005

@BPC_Bipartisan
facebook.com/BipartisanPolicyCenter
instagram.com/BPC_Bipartisan
flickr.com/BPC_Bipartisan

BPC Policy Areas

Economy

Energy

Finance

Governance

Health

Housing

Immigration

National Security

BIPARTISAN POLICY CENTER

1225 Eye Street NW, Suite 1000
Washington, D.C. 20005

202-204-2400
bipartisanpolicy.org

Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Request for Public Comment on the Draft Report Entitled Designing a Consent-Based Siting Process: Summary of Public Input

To Whom It May Concern,

We are writing to you on behalf of the Bipartisan Policy Center's Nuclear Waste Council to share our recent findings on consent-based participation in the siting of nuclear waste facilities in the United States. As Co-Chairs of the Bipartisan Policy Center's Nuclear Waste Council, we and the other council members have deliberated on these issues for over a year. Our recommendations represent the collaboration of a wide variety of perspectives from people that have come together in the hope of progress on nuclear waste management.

Upon review of your draft report, *Designing a Consent-Based Siting Process: Summary of Public Input*, we submit our report on this important issue—*Moving Forward with Consent-Based Siting for Nuclear Waste Facilities*. It is our strong belief and hope that this report will provide useful, new information and recommendations on this topic for the Department, and will supplement the wide variety of perspectives you have already received from the public during this past year of DOE outreach on consent-based siting for nuclear waste.

Like the Department, the Nuclear Waste Council spent a significant amount of time on gaining input from stakeholders, including substantial regional outreach to the public, site visits to remote communities in New Mexico and Texas that are well-steeped in nuclear issues, as well as sending out numerous surveys to state government leaders who will be a critical factor in nuclear waste siting. We deliberated time and again on how to properly capture both the need for action and the necessity of careful consideration. And in the end we've come to the conclusion that consent-based siting may be a key to opening a future nuclear waste facility. We hope the Department will take our recommendations into consideration and look forward to working with you on this important issue.

Sonny Perdue

Governor Sonny Perdue
Nuclear Waste Council Co-Chair

Norm Dicks

Congressman Norm Dicks
Nuclear Waste Council Co-Chair

From: Carolyn Treadway [Carolyn@Planetcare.us]
Sent: Saturday, October 29, 2016 10:44 PM
To: Consent Based Siting
Subject: NO CONSENT, PERIOD!!

I DO NOT CONSENT TO SITING OF RADIOACTIVE WASTE DUMPS, PERIOD!

No further explanations are necessary. You have heard plenty of concerns raised in nine public hearings already, and you are ignoring or downplaying the serious concerns raised by the public at PUBLIC hearings where we are supposed to have a voice. Please start LISTENING TO AND HONORING what we have already said again and again.

Fervently,
Carolyn Treadway

From: Tubb, Katie [Katie.Tubb@heritage.org]
Sent: Monday, October 31, 2016 5:22 AM
To: Consent Based Siting
Subject: consent based siting comments
Attachments: consent.siting.comment.tubb.pdf

Good morning Mr. Griffith,

It is with great disappointment that I missed the deadline by a few hours for comment on the Department of Energy's consent based siting plans as posted in the *Federal Register*. I foolishly had everything prepared on Friday, but failed to finish the task of sending the material. The fault is my own – the DOE made clear when the due date was and I mistook October 30th for a Monday.

I believe the perspective of analysts at the Heritage Foundation offer something unique to the conversation, that is the option for private solutions in a government regulated environment and a pathway to get there via a transitional corporation. I know of others who would agree but do not have the same liberty we do at Heritage to advocate for such policy.

If you are willing, please consider the attached comments in addition to the rest the DOE has received from others.

With gratitude,

Katie Tubb

Katie Tubb
Policy Analyst
Institute for Economic Freedom and Opportunity
The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002
202-675-1767
heritage.org

October 28, 2016

U.S. Department of Energy
Office of Nuclear Energy
Draft Consent-Based Siting Report
1000 Independence Ave. SW
Washington, DC 20585

To whom it concerns:

Regarding *Federal Register* docket DOE-HQ-2016-0023, thank you for the opportunity to contribute to and comment on the Department of Energy's intent to develop a new process for siting nuclear waste management. Enclosed are two papers we believe appropriately identify the problems ailing the current approach to management, and accordingly steps to a broad set of solutions. These papers encapsulate in brief out comments to the Department of Energy and what we believe and experience has shown is necessary to have a thriving and functional nuclear waste management system in the United States.

Sincerely,

Katie Tubb
Institute for Economic Freedom and Opportunity
The Heritage Foundation
214 Massachusetts Ave. NE
Washington, D.C.
20002

Enclosures (2):
Jack Spencer, "Statement to the Reactor and Fuel Cycle Technology Subcommittee of the Blue Ribbon Commission on America's Nuclear Future."

Katie Tubb and Jack Spencer, "Real Consent for Nuclear Waste Management Starts with a Free Market."

Note: Please note that the first paper, testimony by Jack Spencer, is dated August 30, 2010. While some details have changed (for instance, the status of the nuclear waste fund, the core of the paper remains directly relevant.

The Heritage Foundation
LEADERSHIP FOR AMERICA

214 Massachusetts Avenue, NE • Washington DC 20002 • (202) 546-4400 •

heritage.org

Jack Spencer

Research Fellow, Nuclear Energy Policy

The Heritage Foundation

Statement to the Reactor and Fuel Cycle Technology Subcommittee of the Blue Ribbon Commission on America's Nuclear Future

August 30, 2010

My name is Jack Spencer. I am a Research Fellow for Nuclear Energy Policy at The Heritage Foundation. The views I express in this statement are my own, and should not be construed as representing any official position of The Heritage Foundation.

The Nuclear Waste Policy Act of 1982 attempted to establish a comprehensive disposal strategy for high-level nuclear waste. This strategy has failed. The government has spent billions of dollars without opening a repository, has yet to receive any waste, and is amassing billions of dollars of liability. Furthermore, the strategy has removed any incentive to find more workable alternatives. For those that actually produce waste and would benefit most from its efficient disposal, this strategy has created a disincentive for developing sustainable, market-based waste-management strategies.

The strategy codified in the Nuclear Waste Policy Act seemed straightforward and economically sound when it was developed in the early 1980s. It charged the federal government with disposing of used nuclear fuel and created a structure through which users of nuclear energy would pay a set fee for the service—a fee that has never been adjusted, even for inflation. These payments would go to the Nuclear Waste Fund, which the federal government could access through congressional appropriations to pay for disposal activities.

The federal government has accumulated approximately $30 billion (fees plus interest) in the Nuclear Waste Fund and has spent about $10 billion to prepare the repository for operations, leaving a balance of around $20 billion. Utility payments into the fund total about $750 million annually. Yet the repository has never opened.

The taxpayers have fared no better. The Nuclear Waste Policy Act set January 31, 1998, as the deadline for the federal government to begin receiving used fuel. The government's refusal to take possession of the used fuel has made both the federal government and the taxpayers liable to the nuclear power plant operators for an increasingly enormous amount as described above.

The federal government's inability to fulfill its legal obligations under the 1982 act has often been cited as a significant obstacle to building additional nuclear power plants. Given nuclear power's potential to help meet many of the nation's energy requirements, now is the time to break the impasse over managing the nation's used nuclear fuel.

The Current Irrational System

The United States has 60,000 tons of high-level nuclear waste stored at more than 100 sites in 39 states, and its 104 commercial nuclear reactors produce approximately 2,000 tons of used fuel every year. The Yucca Mountain repository's capacity is statutorily limited to 70,000 tons of waste (not to mention the problems associated with even opening the repository). Of this, 63,000 tons will be allocated to commercial waste, and 7,000 tons will be allocated to the Department of Energy (DOE).

These are arbitrary limitations that Congress set without regard to Yucca's actual capacity. As currently defined by the Nuclear Waste Policy Act, Yucca would reach capacity in about three years unless the law is changed. Thus, even if Yucca becomes operational, it will not be a permanent solution, and the nation would soon be back at the drawing board.

The repository's actual capacity, however, is much larger than the current limit. Congress should repeal the 70,000-ton limitation immediately and instead let technology, science, and physical capacity determine the limit. Recent studies have found that the Yucca repository could safely hold 120,000 tons of waste. According to the DOE, that should be enough to hold all of the used fuel produced by currently operating reactors. Some believe the capacity is even greater.

Yet even with an expanded capacity of 120,000 tons, Yucca Mountain could hold only a few more years of America's nuclear waste if the U.S. significantly increases its nuclear power production. According to one analysis, America's current operating reactors would generate enough used fuel to fill a 70,000-ton Yucca right away and a 120,000-ton Yucca over their lifetime. If nuclear power production increased by 1.8 percent annually after 2010, a 120,000-ton Yucca would be full by 2030. At that growth rate, without recycling any used fuel, the U.S. would need nine Yucca Mountains by the turn of the century.[1]

Given the difficulty of opening one repository, relying on future repositories would be extremely risky. With the right mix of technologies such as storage and recycling, Yucca could last almost indefinitely.

Using Resources More Wisely by Recycling

The current U.S. policy is to dispose of all used fuel by moving it directly from the reactors into Yucca Mountain for permanent storage without any additional processing. This is a monumental waste of resources. To generate power, reactor fuel must contain 3 percent to 5 percent enriched fissionable

---

[1] Phillip J. Finck, Deputy Associate Laboratory Director, Applied Science and Technology and National Security, Argonne National Laboratory, statement before the Subcommittee on Energy, Committee on Science, U.S. House of Representatives, June 16, 2005.

uranium (uranium-235). Once the enriched uranium falls below that level, the fuel must be replaced. Yet this "used" fuel generally retains about 95 percent of its fissionable uranium, and that uranium, along with other byproducts in the used fuel, can be recovered and recycled. Regrettably, the current system's structure provides no incentive for the private sector to pursue this option.

Many technologies exist to recover and recycle different parts of the used fuel. France has successfully commercialized such a process. They remove the uranium and plutonium and fabricate new fuel. Using this method, America's 60,000 tons of used fuel contains roughly enough energy to power every household in America for 12 years.

Other technologies show even more promise. Indeed, most of them, including the process used in France, were developed originally in the United States. Some recycling technologies would leave almost no waste at all and would lead to the recovery of an almost endless source of fuel, but none of these processes has been commercialized successfully in the United States, and this will take time. Until the future of nuclear power in the U.S. becomes clearer, it will be impossible to know which technologies will be most appropriate to pursue in this market.

Ultimately, the private sector should make these decisions. Valuing used fuel against the costs of permanent burial is a calculation best done by companies that provide fuel-management services.

Overhauling Used-Fuel Management in the U.S.

The success of a sustained rebirth of nuclear energy in the U.S. depends largely on disposing of nuclear waste safely. New nuclear plants could last as long as 100 years, but to reap the benefits of such an investment, a plant must be able to operate during that time. Having a practical pathway for waste disposal is one way to ensure long-term plant operations. Establishing such a pathway would also mitigate much of the risk associated with nuclear power, but as long as the federal government is responsible for disposing of waste, it is the only entity with any incentive to introduce these technologies and practices.

The problem is that the federal government has never been able to fulfill its current waste disposal obligations, much less introduce new and innovative methods of waste management. Although the Department of Energy under its current leadership has opened the door to reform, it is very unclear that such reform will help the long-term prospects of nuclear energy. Administrations come and go, but inflexible rules and bureaucracies that oversee waste management seem to endure forever, making it impossible for the government to respond effectively to a rapidly changing industry. When it does attempt to respond, it often acts in ways that make no business sense and are inconsistent with the actual state of the industry.

Many of these efforts culminate in large government programs. While some of these programs have some near-term benefit insofar as they demonstrate political support for nuclear power, encourage private and public research and development, and develop the nuclear industry, they inevitably do more harm than good. They are run inefficiently, are often never completed, cost the taxpayers billions of dollars, and are often not economically rational. Furthermore, they often forgo long-term planning, and this leads to unsustainable programs that ultimately set industry back by providing fodder for anti-nuclear critics and discouraging progress in the private sector.

A New Approach

Introducing market forces into the process and empowering the private sector to manage nuclear waste can solve the problem, but this will require major reform. The federal government will need to step aside and allow the private sector to assume the responsibility for managing used fuel, and the private sector should welcome that responsibility.

The primary goal of any strategy for used-fuel management should be to provide a disposition pathway for all of America's nuclear waste. The basic problem with the current system is that every nuclear power plant needs a place to put its waste, and Yucca Mountain is potentially not big enough to hold it all under the current used-fuel management regime.

In other words, permanent geologic storage capacity is a scarce resource on which the industry depends. If used-fuel management were a market-based system, this storage capacity would carry a very high value. A new system should price geologic storage as a scarce resource and fold any costs into a fee for emplacing nuclear waste in Yucca Mountain.

Repealing the Mil. The key to this new approach will be to transform how waste management is financed. Once market-based pricing is in place, the fee that nuclear energy consumers pay to the federal government for waste management should be repealed. Under the current system, consumers pay for waste disposition through a flat fee, called the mil, that is paid to the federal government at the rate of 0.1 cent per kilowatt-hour of nuclear-generated electricity. This fee as currently assessed has no market rationale. It is simply a flat fee that ratepayers pay to the federal government. It has never been changed, not even for inflation and is not a reflection of any actual services provided.

In a market-based system, instead of paying a pre-set fee to the federal government to manage used fuel, nuclear power operators would pay a fee for service. This could include simply paying to place used nuclear fuel into geologic storage or for a more complex suite of processing services. These waste-management costs would then be folded into operating cost, which would be reflected in the price of power. This cost might be higher or lower than the current fee; more important, it would reflect the true costs of nuclear power.

Pricing Geologic Storage as a Scarce Resource. The idea would be to set a rational pricing mechanism for emplacing nuclear waste into a geologic repository. The price could be based on a formula that considers a set of relevant variables, including heat content of the waste, predicted production of used fuel, repository capacity, and lifetime operation costs. Each of these variables would help to determine the price of placing a given volume of waste in Yucca at any specific time.

As the repository is filled, the fee to emplace additional fuel would obviously increase. The fee could also increase, depending on the formula, as new plants are constructed or old plants' licenses are renewed because they would produce additional used fuel, thereby increasing the demand for repository space. Prices would be lower for waste that radiates less heat. Prices would fall if Yucca's capacity is expanded or if waste is reduced through alternative processes.

This would create a market for repository space. The fee could be structured in a number of ways. One example would be to charge a floating fee according to a predetermined formula. Under this scenario, the fee would shift constantly as the price variables change. For example, a volume of waste with less heat

content would cost less to emplace than a similar amount with a higher heat profile. An alternative to a floating fee might be one that resets at timed intervals, such as once a year.

A pure market solution could also work where repository managers simply set the price for emplacement based on what operators are willing to pay, much like how shoes or a new truck is priced.

The exact structure and implementation of the fee could be determined at some future point. One simple option would be to divide the capacity available in Yucca by the lifetime costs to give a price to emplace an amount (e.g., a ton) of waste in the repository. As the repository was filled, the price per ton would increase.

Nuclear power operators could then decide, given the price to place waste in Yucca, how to manage their used fuel. As the price to access Yucca goes up, so will the incentive for nuclear operators to do something else with their used fuel. This should give rise to a market-based industry that manages used fuel in the U.S.

The market would dictate the options available. Some operators may choose to keep their used fuel on site to allow its heat load to dissipate, thus reducing the cost of placing that waste into Yucca. Companies may emerge to provide interim storage services that would achieve a similar purpose. The operators could choose options based on their particular circumstances.

As prices change and business models emerge, firms that recycle used fuel would likely be established. Multiple factors would feed into the economics of recycling nuclear fuel. Operators would make decisions based not only on the cost of placing waste in Yucca, but also on the price of fuel.

If a global nuclear renaissance does unfold, the prices for uranium and fuel services will likely rise. This would place greater value on the fuel resources that could be recovered from used fuel, thus affecting the overall economics of recycling. Instead of the federal government deciding what to build, when to build it, and which technology should emerge, the private sector would make those determinations.

Some nuclear operators may determine that one type of recycling works for them, while others may decide that a different method is more appropriate. This would create competition and encourage the development of the most appropriate technologies for the American market.

Such a market for repository space could give rise to a broader market for geologic storage. As waste production causes Yucca storage costs to rise, companies could emerge that provide additional geologic storage at a lower price. This additional space would in turn reduce the value of the space available in Yucca. These additional repositories would set their prices however they deem appropriate.

Alternatively, as Yucca fills, nuclear operators may decide to develop additional geologic storage facilities in a joint venture. While this may seem unlikely, given the problems associated with opening Yucca Mountain, other communities may be more receptive to hosting a repository once a reliable safety record is established and the economic benefits of hosting a repository are demonstrated. The federal government would still take title to any waste placed in future repositories once they are decommissioned.

Predicting how a market might evolve is impossible, but unlike the government-run process that led to the Yucca Mountain site—a process mired in politics—private entities would establish the path forward by

working with government regulators. Private entities would also be able to pursue their plans without having to contend with as much of the bureaucratic inertia that accompanies government-run operations.

Most important, this system would encourage the introduction of new technologies and services into the market as they are needed, as opposed to relying on the federal government. New technologies would not be hamstrung by red tape or overregulation. This system would also allow for the possibility of no expansion of nuclear power. If the U.S. does not expand nuclear power broadly, there is probably no reason to build recycling or interim storage facilities.

Establishing a Separate Organization to Manage Yucca Mountain. As permanent geologic storage is commoditized, the problem then becomes one of establishing responsibility for managing that scarce resource. Leaving that responsibility with the government provides no benefits, other, perhaps, than political. No overarching need mandates that the government must manage Yucca Mountain or used nuclear fuel. Furthermore, leaving this responsibility in the hands of government comes with all kinds of pitfalls, including inflexibility, inefficiency, politics, and being subject to annual appropriations, to name a few. Similarly, a public–private partnership is not necessary and has no inherent advantages, again, other than perhaps political.

Instead, a completely new organization should be established to manage Yucca Mountain. The new organization's purpose would be to ensure that Yucca is available to support the commercial nuclear industry's need for long-term geologic storage in a way that benefits Nevada and to set the fee for placing radiological materials in Yucca. This fee would be the primary mechanism for managing access to the repository. Its one operating mandate should be to remain open to receive radiological materials either until a second repository is opened or until the last commercial nuclear power plant ceases operations.

The federal government should not be part of the management team; however, local and or state government could. The new entity could be organized in any number of ways. It could take the form of a nonprofit organization that is independent of but represents the nation's nuclear energy producers. Such a structure would ensure that no operator receives preferential treatment and that it operates as a service to all nuclear operators. It also would prevent a profit-seeking entity from holding a monopoly over a key asset on which an entire industry depends. The entity could also be a public–private partnership with, perhaps, the State of Nevada being a majority partner. The federal government would provide oversight through the Nuclear Regulatory Commission (NRC) and other appropriate agencies.

The new organization should be created as soon as possible and immediately commence a transition plan, which would coincide with the NRC's review of the Department of Energy's application for a Yucca Mountain construction permit. During the transition period, the new organization would work with the Department of Energy's Office of Civilian Radioactive Waste Management to move the application for the Yucca construction permit through the NRC. If the license is granted, the new organization would take control of Yucca operations, which would include overseeing Yucca construction and preparing for long-term operations.

Establishing a Waste Disposal Fund. The NRC requires that each nuclear plant operator establish a funding mechanism to ensure that resources will be available to decommission the plant once operations cease. This is achieved either through guarantees from its parent company or by establishing a

decommissioning fund. This protects the taxpayer from the financial obligations of plant decommissioning if the operator becomes financially unable to carry out that responsibility.

A similar funding mechanism should be required for new plant licenses and life extensions to cover the costs of waste disposal once the mil is repealed. This could be included in the decommissioning fund or set up as a separate entity. It would not be a payment to the federal government and would always be controlled by the nuclear operator. The monies set aside should be adequate to finance the geologic disposal of any used fuel held on-site in dry storage. This guarantees that waste disposal funds will be available, even if the operator becomes insolvent.

Other Issues. Changing from the current system of waste management to a market-based system raises a number of issues:

- How will repository construction be funded if it is dependent on disposal fees?
- What will happen to the Nuclear Waste Fund?
- Who is responsible for the disposal of existing nuclear waste, which has already been paid for?
- What happens to defense waste?

The Nuclear Waste Fund and Construction of the Yucca Mountain Repository. The Nuclear Waste Fund was set up by the 1982 Nuclear Waste Policy Act to pay for the costs of waste disposal. The fund has approximately $20 billion, and about $10 billion has been spent so far on repository activities. Congress should abolish the fund and make the money available to the new organization for licensing and constructing of the Yucca Mountain repository.

According to a 2009 analysis by the Department of Energy, pre-emplacement and closure activities will cost an estimated $27.8 billion. The Nuclear Waste Fund can cover both of those expenses. Any balance should be applied to post-construction operating costs. It must be noted, however, that a private entity could price Yucca's costs differently even from DOE's new assessment.

Once used-fuel management is subject to the open market, it is always possible that no one will use Yucca Mountain, thus depriving it of the funds it needs to maintain operations. Given this possibility, the new organization should be authorized to assess nuclear operators a fee to maintain minimum operations at Yucca if revenue streams are not adequate. This fee should be triggered only under predetermined circumstances. The facility should not remain open if no market emerges for Yucca storage once the market for used fuel management services is established.

Disposal of Existing Used Fuel. While a new regime to deal with new used fuel may make sense, it will not fix the existing problem created by the federal government's failure to dispose of existing waste despite being paid to do so. As a result of its failure, the government and the taxpayers have incurred an expensive ongoing liability for 60,000 tons of used fuel stored around the country.

The courts have confirmed this liability. As a result, the taxpayers have already paid $94 million in lawyer expenses and $290 million in damages. The government is appealing another $420 million award. The government's long-term liability for used fuel is projected to reach $7 billion by 2017 and $11 billion

by 2020. While no solution will satisfy all parties entirely, a resolution that allows a sustainable used-fuel strategy to emerge would be in the broad national interest.

One remedy would be to set aside an amount of space in Yucca Mountain for each reactor operator equal to the amount of used fuel that it produced before discontinuation of the waste fee. Operators could use this space without further fees as they see fit, including selling it to other operators.

Given that America's reactors have already produced around 60,000 tons of waste, if the mil were repealed today, the new organization would set the fee based on the total available space minus 60,000 tons. The capacity should be set based on scientific and technical parameters of what could safely be stored in Yucca.

Defense Waste. One of reasons that Yucca must be opened is that the United States has significant amounts of defense-related nuclear waste that is slated for disposal. Current plans set aside 7,000 tons of Yucca's capacity for defense purposes.

The federal government would be a customer for waste-management services just as every other operator and would pay a fee for placing its waste in Yucca. Alternatively, the government could buy waste-management services on the open market to process its waste, thereby minimizing what is placed in Yucca.

Defining the Federal Role in Waste Disposal. Although its involvement in used-fuel management should be minimized, the federal government will continue to have a number of critical roles. During operations, the federal government would have significant oversight responsibilities. As is currently the case, the Nuclear Regulatory Commission would oversee operations, and other federal agencies, such as the Environmental Protection Agency, would continue to play a regulatory role. The national laboratory system would also play a critical role in facilitating research and development.

The federal government would fulfill its final obligation by taking possession of the closed and decommissioned Yucca Mountain whenever that may occur, along with any geologic repositories that may be built in the future. This is a critical role for the federal government because it is the only institution that can maintain assured liability for the waste in perpetuity.

Steps to Overhaul Nuclear Waste Management

To begin the process of overhauling the nation's nuclear-waste management regime, Congress should amend the Nuclear Waste Policy Act of 1982 to encourage development of a market-based management system for used nuclear fuel. Specifically, Congress should:

- **Empower** the private sector to manage used fuel;
- **Allow** the NRC to carry out its review of the Department of Energy's Yucca Mountain construction permit;
- **Create** a private entity (PE) that is representative of, but independent from, nuclear operators to construct and manage Yucca Mountain;
- **Repeal** the 70,000-ton limitation on the Yucca Mountain repository;

- **Empower** the PE to commoditize geologic storage;
- **Repeal** the mil and abolish the Nuclear Waste Fund, allowing nuclear operators to fold the costs of waste management into the price of nuclear powered electricity;
- **Limit** the federal government's role to providing oversight, basic research and development, and taking title of spent fuel upon repository decommissioning.

Conclusion

The current approach to managing used nuclear fuel is systemically broken. It was developed to support a nuclear industry that was largely believed to be in decline. That is no longer the case. The federal government promised to take title of the used fuel and dispose of it; this removed any incentive for the private sector to develop better ways to manage the fuel that could be more consistent with an emerging nuclear industry. And the federal government has proven incapable of fulfilling its obligations to dispose of the fuel.

The current system is driven by government programs and politics. There is little connection between used-fuel management programs and the needs of the nuclear industry. Any successful plan must grow out of the private sector. The time has come for the federal government to step aside and allow utilities, nuclear technology companies, and consumers to manage used nuclear fuel.

Overhauling the nation's nuclear-waste management regime will not be easy. It will require a significant amendment of the Nuclear Waste Policy Act and a long-term commitment by Congress, the Administration, and industry. But developing such a system would put the United States well on its way to re-establishing itself as a global leader in nuclear energy.

The Heritage Foundation is a public policy, research, and educational organization recognized as exempt under section 501(c)(3) of the Internal Revenue Code. It is privately supported and receives no funds from any government at any level, nor does it perform any government or other contract work.

The Heritage Foundation is the most broadly supported think tank in the United States. During 2010, it had 710,000 individual, foundation, and corporate supporters representing every state in the U.S. Its 2010 income came from the following sources:

Individuals	78%
Foundations	17%
Corporations	5%

The top five corporate givers provided The Heritage Foundation with 2% of its 2010 income. The Heritage Foundation's books are audited annually by the national accounting firm of McGladrey & Pullen. A list of major donors is available from The Heritage Foundation upon request.

Members of The Heritage Foundation staff testify as individuals discussing their own independent research. The views expressed are their own and do not reflect an institutional position for The Heritage Foundation or its board of trustees.

The Heritage Foundation

BACKGROUNDER

No. 3107 | MARCH 22, 2016

Real Consent for Nuclear Waste Management Starts with a Free Market

Katie Tubb and Jack Spencer

Abstract

Getting nuclear waste management right is important if America is to continue benefitting from nuclear energy, which currently supplies 19 percent of the nation's electricity. The Department of Energy is seeking to define a consent-based process for siting interim and long-term storage facilities for commercial nuclear waste. Yet the faulty system of misaligned incentives to manage commercial waste remains in place, muddling not only the goal of attaining true consent, but also long-term storage. The nuclear industry is capable of, and should be responsible for, nuclear waste management. This naturally allows "consent" to take whatever shape communities or states deem best, without government coercion, and opens the possibility for innovation. The government should maintain the role of regulator. Finland, as the first country to license construction of a long-term repository, provides a good example.

Last December, the Department of Energy (DOE) finally announced the next step in its plan to manage nuclear waste, as roughly outlined in its 2013 *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*.[1] In what the DOE characterized as a "critical step," it opened a public comment period to gather input on how a new consent-based siting process for nuclear waste facilities might work. The DOE has yet to offer any technical framework or guidelines for what a desirable site would be.

A DOE blog post announcing the comment period states that the goal of this next step is "the long-term storage and disposal of spent nuclear fuel and high-level radioactive waste," which is important "so that we can continue to benefit from nuclear technologies."[2]

Key Points

- The Department of Energy (DOE) wants to develop a consent-based process to site nuclear waste facilities. Building interim storage does not support the goal of long-term storage and disposal for nuclear waste under the current broken system.
- A true consent-based process is not primarily politically brokered and managed, but a market-based process in which costs and benefits are negotiated by companies and communities and the nuclear industry, and the government fulfills its function as an unbiased regulator.
- The DOE plan is a stop-gap measure that would eliminate a powerful incentive for the government to fulfill its long-delayed promise to manage the nuclear waste for which it is legally responsible under the Nuclear Waste Policy Act.
- Congress should install the greater policy reforms necessary for nuclear waste management, namely establishing the nuclear industry's responsibility to manage its nuclear waste. This has been done in Finland with good results.

This paper, in its entirety, can be found at **http://report.heritage.org/bg3107**

The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002
(202) 546-4400 | heritage.org

However, this "critical step" does not ultimately address the goal of long-term storage nor does it increase the likelihood that Americans will continue to benefit from nuclear technology, regardless of the DOE's intent. In fact, the DOE is largely settling for the much more short-sighted goal of addressing government liability for commercial nuclear waste.

A truly consent-based process is not primarily politically brokered and managed, but a market-based process in which costs and benefits are fully negotiated by companies and communities and the nuclear industry, and the government fulfills its appropriate function as an unbiased regulator.

Side-Stepping Long-Term Storage

The DOE's December announcement specifically called for comments to develop a consent-based process to site the nuclear waste facilities outlined in its *Strategy*, namely a pilot interim storage facility, a larger interim storage facility, and eventually a long-term geologic repository. The problem is that building interim storage as the DOE proposes does not support the DOE's stated goal of ultimately building long-term storage and disposal for nuclear waste.

When it became apparent that the DOE would not be collecting waste according to the 1982 Nuclear Waste Policy Act's deadline, industry worked with the Nuclear Regulatory Commission (NRC) to develop interim storage in cooling pools and dry casks.[3] Consequently, most operating and decommissioned nuclear power plants are currently functioning as what the NRC dubs an Independent Spent Fuel Storage Installation (ISFSI).[4] In other words, the U.S. already *has* an interim storage system.

The DOE's plan for two interim storage sites is even less necessary because the current temporary storage managed by nuclear power plants *is* safe. The NRC has determined,[5] and the DOE itself recognized in its announcement, that "nuclear waste is safe and secure in these locations."[6] As commonly designed in the U.S.,[7] an interim storage facility is little more glamorous than an expensive concrete pad for large concrete-encased casks of spent nuclear fuel or keeping fuel in existing pools for longer than planned. The DOE's proposed consent-based siting of interim storage—as opposed to the current private storage on nuclear power plant sites—does not mark a big technological step forward, only sideways.

Despite the existing interim storage situation, the DOE explains that there are other reasons for building interim storage, namely that "the purpose of a pilot facility is to begin...developing and perfecting protocols and procedures for transportation and storage of nuclear waste."[8] Though individual routes may have unique challenges, there is no technical unfamiliarity with the logistics and safety measures necessary for transporting nuclear waste. The World Nuclear Association estimates that since 1971 there have been some 20,000 shipments of 80,000 tons of used nuclear fuel and high-level waste around America and the world without injuries or damage to property. This is just a very small subset of nuclear material transported by road, rail, and ship from the medical, research, agricultural, mining, and other industries.[9]

Instead, DOE interim storage primarily meets the bare minimum requirements to alleviate the government's liability under the Nuclear Waste

1. Franklin Orr, "Finding Long-Term Solutions for Nuclear Waste," U.S. Department of Energy, December 21, 2015, http://www.energy.gov/articles/finding-long-term-solutions-nuclear-waste (accessed January 15, 2016).
2. Ibid.
3. U.S. Nuclear Regulatory Commission, "Spent Fuel Storage in Pools and Dry Casks Key Points and Questions & Answers," April 13, 2015, http://www.nrc.gov/waste/spent-fuel-storage/faqs.html (accessed February 5, 2016).
4. U.S. Nuclear Regulatory Commission, "U.S. Independent Spent Fuel Storage Installations (ISFSI)," August 13, 2015, http://pbadupws.nrc.gov/docs/ML1524/ML15240A058.pdf (accessed January 15, 2016).
5. U.S. Nuclear Regulatory Commission, "Continued Storage of Spent Nuclear Fuel," July 25, 2015, http://www.nrc.gov/waste/spent-fuel-storage/wcd.html (accessed January 15, 2016).
6. Orr, "Finding Long-Term Solutions."
7. U.S. Nuclear Regulatory Commission, "Typical Dry Cask Storage System," April 13, 2015, http://www.nrc.gov/waste/spent-fuel-storage/diagram-typical-dry-cask-system.html (accessed January 15, 2016).
8. Orr, "Finding Long-Term Solutions."
9. World Nuclear Association, "Transport of Radioactive Materials," January 2016, http://www.world-nuclear.org/info/Nuclear-Fuel-Cycle/Transport/Transport-of-Radioactive-Materials/ (accessed February 4, 2016).

Policy Act, as amended.[10] Under this congressionally approved nuclear waste management plan, the DOE was to begin collecting and disposing of waste in a long-term repository at Yucca Mountain in Nevada. Despite the faults of the Nuclear Waste Policy Act, Congress at least created a means of keeping the DOE accountable to its promise to build a long-term nuclear waste repository by setting a deadline for the DOE to begin collecting waste by 1998. Failure to do so has left the federal government (and therefore the taxpayer) with growing liability as nuclear waste stockpiles have grown. Nuclear utilities have successfully sued, and the federal government has paid out $5.3 billion in damages. The DOE projects future liability to be $23.7 billion (assuming a pilot storage facility by 2021); the nuclear industry estimates at least $50 billion in liabilities.[11]

Government interim storage, as the DOE proposes, then accomplishes the main purpose of getting nuclear waste out of utilities' storage facilities and into a DOE storage facility in order to end government liability for uncollected waste. This stop-gap move would eliminate a powerful incentive for the government to make good on its long-delayed promise to manage and dispose of the nuclear waste it is legally responsible for under the Nuclear Waste Policy Act. And it would dampen incentive to install the greater policy reforms necessary for nuclear waste management, namely establishing the nuclear industry's responsibility to manage its nuclear waste.

Why Long-Term Storage Matters: Benefitting from Nuclear Technology

How the U.S. solves the nuclear waste conundrum is important because this has long-term implications for the American nuclear industry and, as the DOE stated in its consent-based-siting announcement, for America's ability to "continue to benefit from nuclear energy."[12]

Roughly 74,258 tons of spent nuclear fuel[13] are currently stored safely on site at nuclear power plants, awaiting permanent long-term disposal. This is in addition to defense-related and government-owned nuclear waste. No matter how waste may be processed or used in the future, more than one permanent repository will almost certainly be needed.[14] Unless new solutions to long-term nuclear waste management are developed, it is hard to see how a U.S. nuclear industry could thrive with a whole third of its fuel cycle (nuclear waste management) left uncertain, untended, and under government control.[15]

In fact, this has already been an issue. The NRC suspended all licensing activities in 2012 as a result of a lawsuit challenging the availability and safety of nuclear waste on-site storage, which became increasingly important given the federal government's inability to collect waste. In September 2014, the NRC determined that dry cask storage was safe indefinitely and restarted licensing activities.[16]

How to Best Achieve Long-Term Storage: Realigning Incentives. One of the biggest hurdles to a long-term storage facility and robust nuclear

10. 42 U.S. Code ch. 108.
11. U.S. Department of Energy, "Fiscal Year 2015 Agency Financial Report," November 16, 2015, pp. 77-78, http://www.energy.gov/sites/prod/files/2015/11/f27/DOE_FY2015_AFR.pdf (accessed December 30, 2015).
12. Orr, "Finding Long-Term Solutions."
13. Nuclear Energy Institute, "On-Site Storage of Nuclear Waste," http://www.nei.org/Knowledge-Center/Nuclear-Statistics/On-Site-Storage-of-Nuclear-Waste (accessed February 5, 2016).
14. U.S. Department of Energy Office of Civilian Radioactive Waste Management, "The Report to the President and the Congress by the Secretary of Energy on the Need for a Second Repository," December 2008, http://energy.gov/downloads/report-president-and-congress-secretary-energy-need-second-repository (accessed January 15, 2016).
15. Referring to nuclear fuel fabrication, power generation, and waste management. The private sector is responsible for fuel fabrication and power generation; the area where the nuclear industry has little say—waste management—has become a failure. Nuclear Regulatory Commission, "Stages of the Nuclear Fuel Cycle," October 21, 2014, http://www.nrc.gov/materials/fuel-cycle-fac/stages-fuel-cycle.html (accessed February 5, 2016).
16. Allison Macfarlane, Chairman, Nuclear Regulatory Commission, letter to Representative Fred Upton, August 8, 2014, http://www.eenews.net/assets/2014/08/26/document_gw_03.pdf (accessed February 5, 2016), and Hannah Northley, "NRC Finalizes Waste Rule, Lets Licensing Decisions Resume," Greenwire, August 26, 2014, http://www.eenews.net/greenwire/2014/08/26/stories/1060004936 (accessed February 5, 2016).

industry is not developing a consent-based process, as the DOE prescribes it. Instead, it is that the federal government, per the 1982 Nuclear Waste Policy Act, is responsible for managing and disposing of the nuclear waste produced by private businesses.

No doubt, finding communities able and interested in housing a nuclear materials management facility is difficult not just in the U.S. but in other countries as well. However, at different times over the decades there have been, and currently are, communities that have expressed consent. Among them: Wyoming (Fremont County); New Mexico (the Waste Isolation Pilot Plant and Eddy-Lea County Energy Alliance); Texas (Waste Control Specialists); Utah (the Goshute Indian Tribe and San Juan County); and Nevada (Nye County, where Yucca Mountain is located). Four states currently operate low-level waste disposal facilities.[17] Internationally, local consent has been achieved by nuclear waste management companies in Finland and Sweden, even when consent was not initially given, by improved community engagement, compensation packages, and tax arrangements.

The bigger problem is the government assuming responsibility to manage commercial nuclear waste. Not surprisingly, the incentives for action (or more often *inaction* in the case of nuclear waste) within a government bureaucracy are far different than in the private sector. The natural outcome is that the federal government has done little to fulfill its legal obligation to collect and manage waste, let alone develop innovative technologies throughout the fuel cycle (from fuel fabrication and reactor design to waste management and disposal) that take waste management into consideration.

In order for long-term management and innovation to happen in a sustainable and dynamic way, waste producers (nuclear power plants) must have a vested interest and responsibility in waste management. Responsibility for nuclear waste management appropriately belongs with nuclear power plant operators as an aspect of producing commercial power, in the same way that other industries, such as health care, mining, farming, or manufacturing, are responsible for managing their own wastes. If waste management were a dynamic part of the bottom line, the nuclear industry would naturally be interested not only in efficient nuclear waste disposal, but also in cost-effective pre-disposal choices, such as interim storage options, fuel types, and reactor technology. Removing that responsibility from the commercial industry, however, significantly diminishes, if not eliminates any incentive to develop such capabilities.

Making producers responsible for nuclear waste they produce does not, however, remove the government's role altogether. Whereas nuclear waste management should appropriately be the responsibility of nuclear power operators, predictable regulations protecting health and safety are the appropriate responsibility of the federal government. The federal government could also retain ownership of any decommissioned permanent repository, having guaranteed longevity to credibly take long-term possession and liability.[18] The extant nuclear industry would pay for any associated upkeep.

The Example of Finland

A system with appropriately assigned waste management responsibilities for both industry and government is not just a theoretical ideal. The common theme in successful commercial nuclear programs around the world is that nuclear waste producers are responsible for their own waste management.[19]

Finland's nuclear industry, which by law is responsible for siting, constructing, and paying for intermediate and long-term nuclear waste storage, is an example. Two Finnish nuclear power companies created the joint venture company Posiva to conduct research and development, and eventually locate, build, and manage a waste repository. Sites were selected, yet the community at Olkiluoto (the

17. U.S. Nuclear Regulatory Commission, "Locations of Low-Level Waste Disposal," January 27, 2016, http://www.nrc.gov/waste/llw-disposal/licensing/locations.html (accessed February 4, 2015).
18. Jack Spencer, "Blue Ribbon Commission on Nuclear Waste: Missing Opportunity for Lasting Reform," Heritage Foundation *Backgrounder* No. 2600, August 22, 2011, http://www.heritage.org/research/reports/2011/08/blue-ribbon-commission-on-nuclear-waste-missing-opportunity-for-lasting-reform.
19. Jack Spencer, "Nuclear Waste Management: Minimum Requirements for Reforms and Legislation," Heritage Foundation *Issue Brief* No. 3888, March 28, 2013, http://www.heritage.org/research/reports/2013/03/nuclear-waste-management-minimum-requirements-for-reforms-and-legislation.

site where a construction license would eventually be approved) initially and overwhelmingly opposed the proposal. This position eventually reversed almost completely with the local council voting 20 to seven in favor of the repository in 2000.[20] In November 2015, Posiva became the world's first to have a license approved for the construction of a nuclear waste geologic repository.[21]

Key to Posiva's success were the economic benefits to the community of a repository; the community's ability to reject the facility siting; the proven track record of Finland's nuclear industry; local participation through many open seminars and meetings; participation in environmental studies; and the accessibility of Posiva and of regulators to the community.[22] Ultimately, Finland's success was based on properly aligning responsibility by putting producers in charge of waste.

Conversely, in America, it has become a well-established fact that the public has lost confidence in the DOE. Some believe a new agency or federal corporation could be "less vulnerable to political interference."[23] But shifting waste management responsibilities from one government entity to a new government entity would only give the appearance of progress. It would be equally as prone to failure because such an approach does not address the underlying problems of the current system.[24] America should, as in Finland, give the responsibility of waste management to the nuclear industry, and of establishing health and safety guidelines to the government.

The Free Market Delivers True Consent-Based Nuclear Waste Management

What the DOE is trying to accomplish through its new consent-based process without the appearance of coercion, the market does naturally. Private companies cannot use force and are thus inherently self-interested in doing what is necessary to build mutual trust with a community through long-term outreach, education, and mutually agreeable terms of business.

When nuclear power companies are responsible for waste management, regulating agencies can then be seen as simply that—regulators with a disinterested goal of protecting health and safety. The government can more transparently play the role of a neutral referee with reliable information. But as both a regulator and repository operator, the government appears to have a bias. Information is easily deemed suspect or distorted due to a conflict of interest, perceived or otherwise.

When the government is appropriately assigned the role of regulator rather than nuclear waste manager, a potential hosting community can be a truly equal partner in negotiations with a waste management company. This is as opposed to the role of an inferior party submitting to a federal government's will to locate a repository or a community finding itself facing a David and Goliath battle.[25] A truly consent-based process is not primarily a politically brokered and managed one, but a market-based one where costs and benefits are fully negotiated and realized by companies and communities, and the government fulfills its appropriate function as an unbiased regulator.

20. World Nuclear Association, "Nuclear Power in Finland," November 2015, http://www.world-nuclear.org/info/Country-Profiles/Countries-A-F/Finland/ (accessed February 5, 2016).
21. News release, "Posiva Is Granted Construction License for Final Disposal Facility of Spent Nuclear Fuel," Posiva, May 11, 2015, http://www.posiva.fi/en/media/press_releases/posiva_is_granted_construction_licence_for_final_disposal_facility_of_spent_nuclear_fuel.3225.news#.VoqXI03wu9I (accessed February 5, 2016).
22. Nuclear Energy Agency, "Stepwise Decision Making in Finland for the Disposal of Spent Nuclear Fuel," Organization for Economic Cooperation and Development, Workshop Proceedings, Turku, Finland, November 15-16, 2001, https://www.oecd-nea.org/rwm/pubs/2002/3616-stepwise-decision-making.pdf (accessed February 5, 2016).
23. U.S. Government Accountability Office, "Spent Nuclear Fuel Management: Outreach Needed to Help Gain Public Acceptance for Federal Activities that Address Liability," GAO-15-141, October 2014, http://www.gao.gov/assets/670/666454.pdf (accessed January 7, 2016).
24. Jack Spencer and Katie Tubb, "Fooled Again: The Nuclear Waste Administration Act Preserves Futile Status Quo," Heritage Foundation *Backgrounder* No. 3045, August 5, 2015, http://www.heritage.org/research/reports/2015/08/fooled-again-the-nuclear-waste-administration-act-preserves-futile-status-quo#_ftn15.
25. Former Wyoming governor Mike Sullivan ultimately vetoed a proposition to host an interim storage facility because, since "it was a federally controlled process of a serious issue it seemed to me we would rapidly lose control of...I wasn't sure we could trust the federal government to do what they said they were going to do, and if we stepped into this we'd be dancing with a 900-pound gorilla, and I didn't think that was in the interests of the state." Greg Fladager, "Nuclear Plan in Wyoming? Committees Pass Bill for Legislation Consideration," *Casper Journal*, November 5, 2012, http://casperjournal.com/business/article_e0d78ba3-73ab-5dc7-9521-eb5a0f5da685.html (accessed February 5, 2016).

Conclusion

The DOE approach to waste management is narrow, envisioning only interim storage and a geologic repository. Opening waste management to the nuclear industry opens the possibility of a diversity of options and a thriving domestic market. It also allows consent to be in the eyes of the beholder,[26] taking whatever shape local communities or states deem best. Government management of nuclear waste has achieved neither public consent nor permanent waste disposal. While progress is slowly being made to determine the viability of a permanent site at Yucca Mountain, it is high time that Congress got to work mending the broken system. This will only become more important.

*—**Katie Tubb** is a Research Associate and Coordinator in the Thomas A. Roe Institute for Economic Policy Studies, of the Institute for Economic Freedom and Opportunity, at The Heritage Foundation. **Jack Spencer** is Vice President of the Institute for Economic Freedom and Opportunity.*

26. As coined by DOE Associate Deputy Assistant Secretary for Fuel Cycle Technologies Andrew Griffith. U.S. Department of Energy, "DOE Consent-Based Siting Initiative Kickoff Meeting, Part 2," Washington, DC, January 20, 2016, video, https://www.youtube.com/watch?v=zGG7k2CvH5k&feature=youtu.be (accessed February 5, 2016).

From: Tubb, Katie [Katie.Tubb@heritage.org]
Sent: Monday, October 31, 2016 7:15 AM
To: Consent Based Siting
Subject: RE: consent based siting comments

Thank you very much!

Katie

Katie Tubb
Policy Analyst
Institute for Economic Freedom and Opportunity
The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002
202-675-1767
heritage.org

From: Consent Based Siting [mailto:consentbasedsiting@hq.doe.gov]
Sent: Monday, October 31, 2016 10:14 AM
To: Tubb, Katie
Subject: RE: consent based siting comments

No problem, we'll include them

From: Tubb, Katie [mailto:Katie.Tubb@heritage.org]
Sent: Monday, October 31, 2016 8:22 AM
To: Consent Based Siting <consentbasedsiting@hq.doe.gov>
Subject: consent based siting comments

Good morning Mr. Griffith,

It is with great disappointment that I missed the deadline by a few hours for comment on the Department of Energy's consent based siting plans as posted in the *Federal Register*. I foolishly had everything prepared on Friday, but failed to finish the task of sending the material. The fault is my own – the DOE made clear when the due date was and I mistook October 30th for a Monday.

I believe the perspective of analysts at the Heritage Foundation offer something unique to the conversation, that is the option for private solutions in a government regulated environment and a pathway to get there via a transitional corporation. I know of others who would agree but do not have the same liberty we do at Heritage to advocate for such policy.

If you are willing, please consider the attached comments in addition to the rest the DOE has received from others.

With gratitude,

Katie Tubb

Katie Tubb
Policy Analyst
Institute for Economic Freedom and Opportunity
The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002
202-675-1767
heritage.org

From: drew.wayne@mail.house.gov
Sent: Friday, October 28, 2016 1:50 PM
To: Consent Based Siting
Subject: Submission to public comment for consent based siting
Attachments: NYDOELetter.pdf

Please see attached.

Drew Wayne
Policy Director
Congressman Tom Reed, NY23
2437 Rayburn House Office Building
Washington, DC 20515
P: 202-225-3161
F: 202-226-6599

Congress of the United States
Washington, DC 20515

October 28, 2016

The Honorable Dr. Ernest J. Moniz
Secretary
United States Department of Energy
1000 Independence Ave, SW
Washington, DC 20585

Dear Secretary Moniz,

As members of New York State's Congressional delegation, we write to express our support for the comments recently submitted by the New York State Energy Research and Development Authority (NYSERDA) regarding the Department of Energy's (DOE) Consent-Based Siting Process for nuclear waste storage and disposal facilities. We urge DOE to reclassify the waste at the Western New York Nuclear Service Center in West Valley, New York as defense-related waste, to correct a historical misclassification of the waste at the facility.

The West Valley fuel reprocessing facility, which operated from 1966 to 1972, was established under a program of the Atomic Energy Commission, DOE's predecessor and was the only privately-operated reprocessing facility for spent nuclear fuel in the United States. As documents and records from that time reveal, the West Valley facility was heavily involved in the nation's defense activities – shipping and other records show that a significant proportion of the activities at and spent nuclear fuel sent to West Valley related to federal defense-related projects, and the vast majority of the uranium and plutonium produced at West Valley was sent to federal defense-related sites for defense purposes.

In 1976, the company behind West Valley withdrew from the project and turned the site over to New York State. To resolve questions of responsibility for the site's cleanup, Congress passed the West Valley Demonstration Project Act of 1980 (WVDPA). In the WVDPA, Congress directed DOE to pay 90 percent of clean-up and decommissioning costs at West Valley; as the legislative history expressly shows, this cost split was an acknowledgement of the facility's role in processing defense waste. The WVDPA also directed DOE to transport the facility's HLW to a federal facility.

Shortly thereafter, in 1982, Congress passed the Nuclear Waste Policy Act (NWPA), which further tasked the federal government with paying for the disposal of HLW produced in whole or in part by defense-related activities. In 1986, after the Department had determined that then-available funds associated with West Valley were insufficient to pay for either the decommissioning of the site or the NWPA disposal fee, DOE's Inspector General issued a report

that, for the first time, classified West Valley's HLW as commercial waste. This report both defied congressional intent and shifted the fiscal burden for disposal of the West Valley waste to New York State, but the Department has held fast to this position since 1986; most recently, the Department asserted in its October, 2014 "Assessment of Disposal Options for DOE-Managed High-Level Radioactive Waste and Spent Nuclear Fuel" that West Valley waste is "Commercial waste . . . not eligible for a repository exclusively for DOE-managed HLW and SNF from defense or DOE research and development activities."[1]

Under the WVDPA and NWPA, DOE has an obligation to protect New York taxpayers from shouldering hundreds of millions – if not billions – of dollars in unwarranted costs. Therefore, we request that the Department provide in writing, prior to its expected December 2016 publication of a report regarding its consent-based siting process: (i) a justification, within the framework of the NWPA, for its classification of the West Valley waste as "commercial"; and, (ii) calculations, including the method of such calculations, of the NWPA disposal fee the State of New York would have to pay if such fee were to be assessed both today and in 2048 (the currently expected date of a repository for commercial HLW) – we understand that the Department last advised the state in 2002 that the NWPA disposal fee at that time was more than $150 million.

We urge the Department to seize this opportunity to correct the misclassification of West Valley's nuclear waste. Thank you for your consideration of this request. Please do not hesitate to reach out to our offices if you have any questions.

Sincerely,

Tom Reed
Member of Congress

Brian Higgins
Member of Congress

Kirsten Gillibrand
United States Senator

Nita M. Lowey
Member of Congress

[1] *See* http://www.energy.gov/sites/prod/files/2014/10/f18/DOE_Options_Assessment.pdf.

Chris Collins
Member of Congress

Louise McIntosh Slaughter
Member of Congress

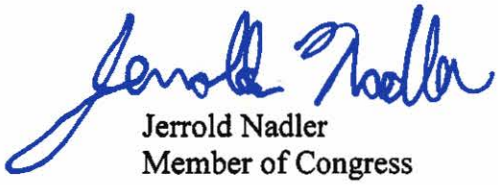
Christopher P. Gibson
Member of Congress

Paul Tonko
Member of Congress

Elise M. Stefanik
Member of Congress

Eliot L. Engel
Member of Congress

Richard L. Hanna
Member of Congress



Jerrold Nadler
Member of Congress

Grace Meng
Member of Congress

Lee M. Zeldin
Member of Congress

From: Betty J. Van Wicklen [bvanwick@nycap.rr.com]
Sent: Friday, October 28, 2016 4:08 PM
To: Consent Based Siting
Subject: Draft Report on consent Based Siting of Nuclear Waste

Importance: High

Dear Reviewer,

I find your Draft Summary of public comments to your Consent-Based Siting proposal to be offensively condescending. I believe the comments presented by the public do provided more than sufficient information already on the Who, Where and Why of our comments, *to wit:*

> Public comments should be weighed equally with the results of all scientific research, including scientists who are not part of the nuclear industry, such as the Union of Concerned Scientists. The public should not be condescended to by assuming that we trust those who have a vested interest in getting rid of waste just so people stop complaining that something must be done about it. The important thing that is within the scope of 'doing something about it' **no group of people** -- community, tribe, water source, fishing rights, the environment, farmland, etc. should be the scapegoat for your plan or your placement of your consent-based siting.
>
> **We do not *consent*** to anything which further may threaten the health and safety of the people

or the environment. Particularly aggrevating is the growing sentiment in corporatie and state and government offices that Native American tribes, treaty areas and rights, can easily be overcome. We should be better that that in the 21st Century!

The tenor of your summary is so long and complicated that few of us have the time or the energy to read through the length and obviation of your responses as your summary of our comments shows--

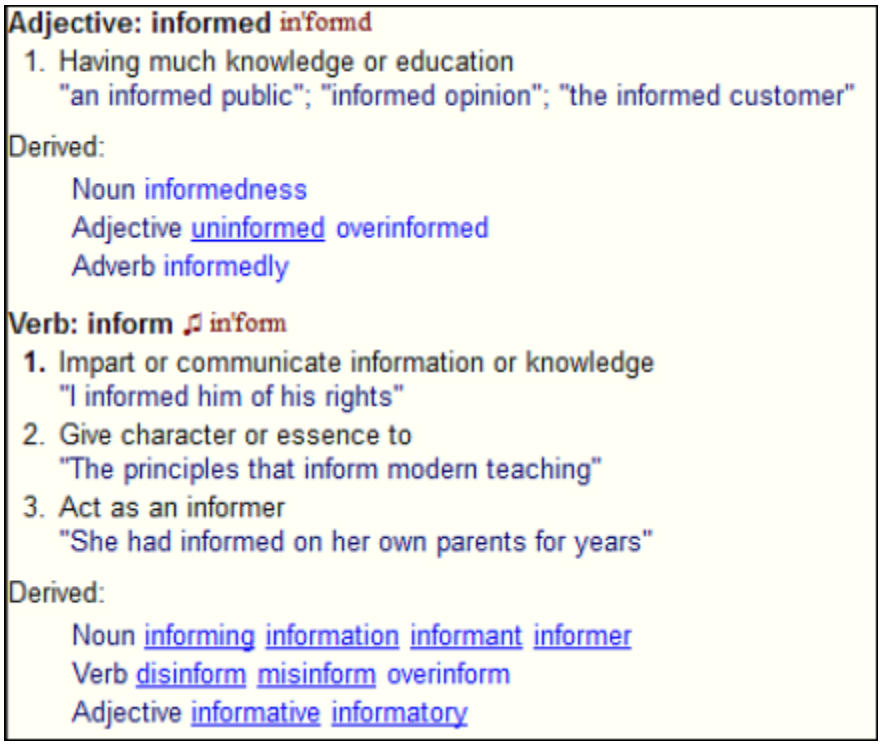
consent, for example, is defined by the dictionary as:

Noun: consent ♫ kun'sent
1. Permission to do something
"he indicated his consent"

Verb: consent ♫ kun'sent
1. Give an affirmative reply to; respond favorably to

Derived:
Adjective consentaneous consenting

informed is defined as:



Adjective: informed in'formd

1. Having much knowledge or education
   "an informed public"; "informed opinion"; "the informed customer"

Derived:

Noun informedness
Adjective uninformed overinformed
Adverb informedly

Verb: inform ♫ in'form

1. Impart or communicate information or knowledge
   "I informed him of his rights"
2. Give character or essence to
   "The principles that inform modern teaching"
3. Act as an informer
   "She had informed on her own parents for years"

Derived:

Noun informing information informant informer
Verb disinform misinform overinform
Adjective informative informatory

To assume that even the majority of the comments submitted concerning "informed consent" are from people who are not educated or are unknowledgeable about the issues concerned is offensive. I'm sure that not many individuals who are unknowledgeable are still sufficiently informed about the problems concerned, or else they would not have taken the time to comment!

Although we certainly have no legal power to object, you asked for our comments on your proposal, not our approval. Hopefully, you expected to receive negative comments - don't demean them and discard them. Even though

we don't have the right to reject the proposal, drawing attention to its prejudiced reasoning for implementation. Such problems as threatening tribal treaty provisions, and its potential threats to public safety, health, property and the environment - should be more reasonably and thoughtfully considered. Last time I heard, consent for any project which affects so many people and the environment required all localities so affected to be a part of the "consent" process, and their comments should also be weighed heavily by any threat to the community or the environment. As you know, nuclear contamination affects widespread areas surrounding the locality where the contamination occurs. Thus, many communities and a large portion of the environment could be severely and potentially completely (for all intents and purposes for the foreseeable future), by any transport or other leakage of nuclear waste.

I, for one, would hope that the DOE would consider the process of safely transporting and sequestering something so inherently dangerous as nuclear energy wastes *with* the approval and consent of the people who would be in harms way should their communities be selected, as well as any environmental concerns (which, by law, must be planned for and approved by both

sltate and locally). Especially in this time of climate change, which I believe (and most scientists would support) must now be taken as a primary concern for *all* planning involving the sfety of large areas and the environment therein.

The thought that the government has the right to impose this kind of large threat to people and the environment without the consent and approval of the ones primarily concerned, while maybe true in the legal sense, is contrary to democracy in a democratic republic! Tribal lands are considered self-governing by the tribe; states have certain legal rights to control how federal laws are implemented (remember State' Rights?). I don't think that many would agree with your dismissing these rights so callously.
Since a large area surrounding any proposed nuclear waste site, that only implies that there are more communities and States which need to be involved in final determinations **before** any siting is chosen.

I would think that recent newscasts underline the results of the government deciding such multi-area projects *without* the consent of communities and states involved and/or affected. We have become an informed society, and are beginning to realize that we too have rights to defend and

our lives, livelihoods, health, safety and local environments against corporately-sponsored and or federal and state easements which threaten them. If you compile all these reasons as lack of trust in the Government, we certainly have ample experience to support it. Probably the most blatant examples are the Tribal Treaties our native populations were literally forced to sign, many of which move them from their locales and sacred places, and which still today are subject to impingement of corporate or government intervention concerning those corporate or government 'needs,' which usually amount to desires for convenience or profit, regardlless of treaty rights.

Many more people have already suffered health and livelihood problems due to easements granted to corporations to drill, frack and pave over their land without proper recompense, and frequently without regard for its effects on their neighbors or communities. We have long had the feeling that what we say doesn't matter. But the tide is turning.

We live in more global communities now, where the results of such experiences are shared, and documented. An ever-growing number of us have decided that active involvement is needed

to prevent our rights from being overrun by what our forefathers never dreamed of when they wrote the Constitution and its Ammendments. We all have a voice and we have the right of all humans to at least try to protect family, hearth and community from ill-conceived plans which threaten those rights.

As an office of the Federal Government, you should be defending us from the threats expressed in our comments to you concerning 'consent-based siting,' which is beginning to sound like the only consent required is within your office. If so, you'd better change the name to 'DOE Determent Siting.'

Sincerely.

Betty J. Van Wicklen
41 Lake Shore Dr.Ã‚Â #2B
Watervliet, NYÃ‚Â 12189-2915

Ã‚Â

Document Metadata:DOE-HQ-2016-0023-DRAFT-0008

Document Details

Docket ID:	DOE-HQ-2016-0023
Docket Title:	Designing a Consent-Based Siting Process *
Document File:	
Docket Phase:	Notice
Phase Sequence:	1
Original Document ID:	DOE-HQ-2016-0023-DRAFT-0008
Current Document ID:	DOE-HQ-2016-0023-DRAFT-0008
Title:	Comment on FR Doc # 2016-22312
Number of Attachments:	0
Document Type:	PUBLIC SUBMISSIONS *
Document Subtype:	Public Comment
Comment on Document ID:	DOE-HQ-2016-0023-0001
Comment on Document Title:	Designing a Consent-Based Siting Process
Status:	Pending_Post
Received Date:	10/28/2016 *
Date Posted:	
Posting Restriction:	No restrictions
Submission Type:	Web
Number of Submissions:	1 *

Document Optional Details

Status Set Date:	10/28/2016
Current Assignee:	Bacon, Cuttie (DOE)
Status Set By:	Public
Comment Start Date:	
Comment Due Date:	
Legacy ID:	
Tracking Number:	1k0-8spw-oj2l
Total Page Count Including Attachments:	1

Submitter Info

Comment:

We do not consent to DOE rushing into defacto permanent parking lot dumps (so-called "centralized" or "consolidated interim storage"), in order to expedite the transfer of title and liability from the nuclear utilities that profited from the generation of high-level radioactive waste, onto the backs of taxpayers. FLOATING FUKUSHIMAS ON SURFACE WATERS: We do not consent to radioactive waste barge shipments on the lakes and rivers of this country, the fresh drinking water supply for countless millions, nor on the seacoasts. In addition to a disastrous radioactive release if the shipping container is breached, infiltrating water could spark a nuclear chain reaction, if a critical mass forms, due to the fissile U-235 and Pu-239 still present in the waste. MOBILE CHERNOBYLS/DIRTY BOMBS ON WHEELS: We do not consent to high-level radioactive waste truck and train shipments through the heart of major population centers; through the agricultural heartland; on, over, or alongside the drinking water supplies of our nation. Whether due to high-speed crashes, heavy crushing loads, high-temperature/long duration fires, falls from a great height, underwater submersions, collapsing transport infrastructure, or intentional attack with powerful or sophisticated explosives, such as anti-tank missiles or shaped charges, high-level radioactive waste shipments, if breached, could unleash catastrophic amounts of hazardous radioactivity into the environment. ENVIRONMENTAL INJUSTICE/RADIOACTIVE RACISM: We do not consent to the targeting, yet again, of low-income, Native American, and other communities of color, with high-level radioactive waste parking lot dumps. It is most ironic that President Obama's Blue Ribbon Commission on America's Nuclear Future, and his DOE, have yet again targeted Native Americans. Obama honored Sauk and Fox environmental activist Grace Thorpe for defending her reservation in Oklahoma against a parking lot dump, and then assisting allies at dozens of other reservations being targeted by DOE's Nuclear Waste Negotiator. Obama praised Thorpe as a "Woman Taking the Lead to Save Our Planet," alongside the likes of Rachel Carson of Silent Spring fame, in his March 2009 Women's History Month proclamation. Similarly, Yucca Mountain, Nevada is Western Shoshone Indian land, as the U.S. government acknowledged by signing a treaty. In addition, Yucca is not scientifically suitable. It is an active earthquake zone, a volcanic zone, and water-saturated underground. If waste is ever buried there, it will leak massively into the environment. And the State of Nevada has never consented to becoming the country's high-level radioactive waste dump. SITES CURRENTLY AT THE VERY TOP OF THE TARGET LIST FOR DE FACTO PERMANENT PARKING LOT DUMPS: We do not consent to the targeting of nuclear power plants, radioactive waste dumps, or DOE sites, already heavily contaminated with radioactivity and burdened with highlevel radioactive waste, to become parking lot dumps for the importation of other sites' or reactors' wastes. DOE, NRC, and industry's top targets include Waste Control Specialists in Andrews County, TX; Eddy-Lea Counties, NM, near DOE's Waste Isolation Pilot Plant; DOE's Savannah River Site, SC; Dresden nuclear power plant in Morris, IL; the list goes on. RISKS OF HIGH-LEVEL RADIOACTIVE WASTE STORAGE POOLS, AND NEED FOR HARDENED ONSITE STORAGE (HOSS): As just re-confirmed by the National Academies of Science, and Princeton U. researchers Von Hippel and Schoeppner, pools are at risk of fires that could unleash catastrophic amounts of

	hazardous Cesium-137 into the environment over a wide region. Since 2002, a coalition of hundreds of environmental and public interest groups, representing all 50 states, has called for expedited transfer of high-level radioactive waste from vulnerable pools into hardened dry casks, designed and built to last not decades but centuries, without leaking, safeguarded against accidents and natural disasters, and secured against attack. NUCLEAR POWER AND HIGH-LEVEL RADIOACTIVE WASTE GENERATION: The mountain of radioactive waste in the U.S. has grown 70 years high, and we still don't know what to do with the first cupful. Radioactive waste may well prove to be a "trans-solutional" problem, one created by humans, but beyond our ability to solve. The only safe, sound solution for radioactive waste is to not make it in the first place. Reactors should be permanently shut down, to stop the generation of highlevel radioactive waste for which we have no good solution. *
First Name:	Dan *
Middle Name:	
Last Name:	Wicht *
Mailing Address:	941 Overton Drive Northeast *
Mailing Address 2:	n/a *
City:	Fridley *
Country:	United States
State or Province:	Minnesota
ZIP/Postal Code:	55432-4541 *
Email Address:	
Phone Number:	
Fax Number:	
Organization Name:	
Submitter's Representative:	
Government Agency Type:	
Government Agency:	
Cover Page:	HTML

From: Leonard and Ellen Zablow [zablow@me.com]
Sent: Thursday, September 22, 2016 7:46 PM
To: Consent Based Siting
Subject: Renewable energy and nuclear waste

Hello!

We address you as a retired biophysicist and a retired High School science teacher. We do not support a plan to allow nuclear waste to be transported through the country to consent based siting! We recognize that consent by cities, communities and states for local storage of such waste would be significantly biased by the economic needs of these entities, especially in view of the depressed economy. Such bias, in other cases, has often negatively impacted black, brown and native American communities. Moving the waste would be especially dangerous, considering the volume that has already already been produced and the levels of radiation.

We approve of the plans for Hardened On-site Storage (HOSS), which should remain the responsibility of the owners of the reactors that produced the waste, with oversight by the Department of Energy done in a more detailed fashion than that which is currently done at such sites.

We also would like to see the DOE give more backing for renewable energy sources, which in many countries already greatly exceeds the output of the nuclear energy sources, and must increase to limit future global warming and lower the price of energy.

Leonard and Ellen Zablow
305 W. 28 St., Apt.18H
New York, NY 10001-7935