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United States Department of Energy
Office of Nuclear Energy
Response to IPC
1000 Independence Ave SW
Washington, D.C. 20585

RE: Response to IPC – Invitation for Public Comment to Inform the Design of a Consent-Based Siting Process for Nuclear Waste Storage and Disposal Facilities [FR Doc. 2015-32346]

Dear Department of Energy Representative:

This letter provides the formal comments of the California State Energy Resources Conservation and Development Commission (California Energy Commission) on the above-referenced document posted in the *Federal Register* by the Department of Energy. The document requested comments on implementing a consent-based siting process to establish an integrated waste management system.[1] The Energy Commission is California's primary energy policy and planning agency, with core functions that include evaluating and proposing mitigation for public health, safety, and environmental impacts of proposed thermal power plants, including nuclear reactors.

I am the Chair of the Energy Commission and the current California State Liaison Officer to the United States Nuclear Regulatory Commission (NRC). Appointed by the state Governor, the Liaison Officer is the primary contact and intermediary between California and the NRC. The Liaison Officer provides vital information on specific issues, such as state radiological health, emergency preparedness, public utility commission actions, and state nuclear safety agency matters, as needed. I applaud the DOE's invitation for public comment on this critical issue and appreciate the opportunity to submit comments on this important subject and welcome the dialogue for the development of a new, comprehensive, consent-based approach to siting facilities intended for storing and disposing of nuclear waste.

As the California State Liaison Officer, I urge the DOE to act expeditiously in seeking voluntary storage and disposal facilities. California's unique combination of seismicity, coastal nuclear

1 U.S. Department of Energy, "Design of a Consent-Based Siting Process for Nuclear Waste Storage and Disposal Facilities," December 23, 2015, Docket ID DOE_FRDOC_0001. Retrieved from http://www.regulations.gov/#!documentDetail;D=DOE_FRDOC_0001-3000.

facilities, and population clusters dictate a commitment to safety. The citizens of California have expressed their desire that federal agencies fulfill statutory obligations in securing the safe storage, transport, and timely removal of radioactive waste as evidenced by public engagement in the recent San Onofre Community Engagement Panel Meeting on Consolidated Interim Storage.[2] Success in nuclear waste management activities require a transparent and inclusive public process that builds trust between all parties and fully addresses transportation considerations. An engaged public process stresses the importance of providing financial and technical resources to interested communities to allow them to fully and equitably participate in the consent-based siting process.

The Energy Commission's Interest and Subject Matter Expertise

California law requires the Energy Commission to prepare a biennial *Integrated Energy Policy Report* (*IEPR*) that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety.[3] In fulfilling this legislative mandate, the Energy Commission regularly evaluates—and takes appropriate responsive action regarding—possible federal decision-making that would impact California's existing nuclear reactors, environmental resources, and public health and safety.[4] Section 25303, subdivision (c), of the California Public Resource Code provides, in pertinent part:

> In the absence of a long-term nuclear waste storage facility, the commission shall assess the potential state and local costs and impacts associated with accumulating waste at California's nuclear powerplants. The commission shall further assess other key policy and planning issues that will affect the future role of nuclear power plants in the state.

The Energy Commission has previously taken a particular interest in the Department of Energy's (DOE) proposal for a geologic repository for the disposal of spent nuclear fuel and high-level waste at Yucca Mountain. In particular, the Energy Commission is a party to the underlying proceeding before the Atomic Safety Licensing Board titled *In the Matter of the U.S. Department of Energy (High Level Waste Repository)*, Docket No. 63-001-HLW (High Level Waste Repository Proceeding). In that proceeding, the Atomic Safety Licensing Board admitted 22 contentions brought forth by the State of California and the Energy Commission, charging that DOE's 2002 *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (2002 FEIS) and 2008 *Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste*

2 June 22, 2016. San Onofre Community Engagement Panel on Consolidated Interim Storage. Content available at https://www.songscommunity.com/cep-events/062216_event.asp.
3 Cal. Pub. Resources Code, § 25301(a).
4 The Warren-Alquist Act designates the Energy Commission as the state's primary agency for energy policy and planning. Senate Bill 1389 (Bowen and Sher, Chapter 568, Statutes of 2002) requires that the Commission adopt and transmit to the Governor and Legislature a report of findings every two years in the *Integrated Energy Policy Report.*

at Yucca Mountain, Nye County, Nevada (2008 FEIS; collectively, EISs) did not adequately characterize impacts from potential contaminant releases to groundwater and from surface discharge of groundwater.[5] The NRC staff's 2008 *Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain* (ADR) agreed with California's position that the EISs were deficient under the National Environmental Policy Act (NEPA) for failing to adequately discuss the cumulative amounts of radiological and nonradiological contaminants that may enter the groundwater over time and the behavior of these contaminants in the aquifer and surrounding environments.[6] In November 2015 the Energy Commission submitted comments representing California on the *Supplement to the U.S. Department of Energy's Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Waste at Yucca Mountain, Nye County, Nevada* (Docket ID: NRC-2015-0051).[7]

In 2008, the Energy Commission adopted the guidelines outlined in *Assessment of California's Nuclear Power Plants: AB 1632 Report.*[8] At the time of the report, there were two operating nuclear power reactors, Pacific Gas and Electric's Diablo Canyon Power Plant (Diablo Canyon) and Southern California Edison's San Onofre Nuclear Generating Station (San Onofre), as well as two sites, Humboldt Bay and Rancho Seco, undergoing decommissioning. All four sites were, and still are, storing spent nuclear fuel (SNF) onsite. At this writing, only Diablo Canyon is operating but is scheduled to begin decommissioning per a recent settlement agreement in 2024[9]; San Onofre Units 2 and 3 are in the early stages of decommissioning, while San Onofre Unit 1, Humboldt Bay, and Rancho Seco are in later stages. However, as discussed in the *2005 IEPR*[10] and still of concern today, both Diablo Canyon and San Onofre have SNF stored in cooling pools and independent spent fuel storage instillations (ISFSI).

An essential component of the AB 1632 report was the recognition that nuclear plants in California are vulnerable because the local geology is predisposed to seismic activity:

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5 Board Memorandum and Order, May 11, 2009; CLI-09-14, June 30, 2009.
6 U.S. Nuclear Regulatory Commission staff's *Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain*, pp. 3-14.
7 Letter to Secretary of U.S. Nuclear Regulatory Commission from the California Energy Commission regarding, the "Supplement to the U.S. Department of Energy's Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Waste at Yucca Mountain, Nye County, Nevada" (Docket ID: NRC-2015-0051). NRC Accession Number ML15344A101.
8 *Assessment of California's Nuclear Power Plants: AB 1632 Report,* Commission Report, CEC-100-2008-009-CMF, Published November 2008. Retrieved from http://www.energy.ca.gov/ab1632/. Assembly Bill 361 (Blakeslee, Statutes of 2006, Chapter 722). Retrieved from http://www.energy.ca.gov/ab1632/.
9 PG&E News Release, "In Step With California's Evolving Energy Policy, PG&E, Labor and Environmental Groups Announce Proposal to Increase Energy Efficiency, Renewables and Storage While Phasing Out Nuclear Power Over the Next Decade." June 21, 2016. Retrieved from http://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20160621_in_step_with_californias_evolving_energy_policy_pge_labor_and_environmental_groups_announce_proposal_to_increase_energy_efficiency_renewables_and_storage_while_phasing_out_nuclear_power_over_the_next_decade.
10 California Energy Commission, *2005 Integrated Energy Policy Report*, published November 2005, CEC-100-2005-007-CMF. Retrieved from http://www.energy.ca.gov/2005_energypolicy/.

> According to the California Seismic Safety Commission staff, there is a risk of a major earthquake in California on the order of 2 to 3 percent per year. According to the 2007 Working Group on Earthquake Probabilities, California faces a 99.7 percent chance of a magnitude 6.7 or larger earthquake during the next 30 years. The likelihood of an even more powerful quake of magnitude 7.5 or greater in the next 30 years is 46 percent.

The AB 1632 report identified Diablo Canyon's proximity to multiple fault zones as a significant seismic vulnerability.[11] Furthermore, the available seismic and geological data concerning the region encompassing San Onofre indicated that the site could experience larger and more frequent temblors than anticipated when the plant was designed.[12] The AB 1632 report further explained that secondary seismic hazards such as landslides and tsunamis could affect facilities and emergency response. Even if an earthquake did not exceed the design basis, the effect upon support systems, structures, and components could pose a direct risk of injury and loss of life to plant workers and occupants, resulting in indirect hazards to the public.

The California Coastal Commission has also performed seismic reviews of both Diablo Canyon and San Onofre, recently focusing on the licensing of the onsite ISFSI structures.[13] Moreover, the California Public Utilities Commission (CPUC) is involved in the seismic assessment of Diablo Canyon through the Independent Peer Review Panel (IPRP), required by California law to conduct an independent review of enhanced seismic studies and surveys of Diablo Canyon Units 1 and 2, including the surrounding areas of the reactor site and areas of nuclear waste storage.[14] Furthermore, the California Office of Emergency Services, Highway Patrol, and Energy Commission are involved in the Western Governors' Association (WGA) Waste Isolation Pilot Plant Transportation (WIPP) Technical Advisory Group.[15] In cooperation with the DOE and WGA these three California agencies coordinate the transport of high-level radioactive waste through the state en route to the WIPP facility.

The Energy Commission made policy recommendations addressing facility vulnerabilities in the *2008 IEPR Update* that were incorporated in subsequent *IEPRs*.[16] Since adoption of the AB 1632 report guidelines, the Energy Commission has led in assessing the local costs, impacts, and

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11 MRW & Associates, Inc. *AB 1632 Assessment of California's Operating Nuclear Plants*, final consultant report, CEC-100-2008-005-F, Published October 2008. Retrieved from http://www.energy.ca.gov/ab1632/.
12 SCE, 2001, *San Onofre Nuclear Generating Station Units 2 and 3 Seismic Hazard Study of Postulated Blind Thrust Faults*, prepared by Geomatrix Consultants, GeoPentech, and Southern California Edison for the Nuclear Regulatory Commission, 26 December 2001, 165 pp.
13 California Coastal Commission. *Construction of SONGS Units 2 and 3 Temporary Spent Nuclear Fuel Facility*. San Diego. February 28, 2001a. Retrieved from http://www.coastal.ca.gov/energy/E-00-014-3mmi.pdf. California Coastal Commission Appeal Staff. *De Novo Review of A-3-SLO-04-035: Diablo Canyon ISFSI Application*. San Luis Obispo. November 23, 2004. Retrieved from http://www.coastal.ca.gov/energy/W11a-12-2004.pdf. California Coastal Commission. *Application No. 9-15-0228 (Southern California Edison Co., San Diego Co.)*. Long Beach. October 6, 2015. Retrieved from http://www.coastal.ca.gov/meetings/mtg-mm15-10.html.
14 Assembly Bill 361 (Achadjian, Chapter 399, Statutes of 2015). Retrieved from https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB361.
15 Western Governors' Association WIPP Transportation Safety Program reference Web page: http://www.westgov.org/initiatives/102-articles/initiatives/226-wga-wipp-program-implementation-guide
16 California Energy Commission, *2008 Integrated Energy Policy Report Update*, published November 2008, CEC-100-2008-008-CMF. Retrieved from http://www.energy.ca.gov/2008_energypolicy/.

policy issues associated with California's active and decommissioning nuclear power plants along the state's seismically vulnerable coastline. The Energy Commission has taken a particular interest in federal activities related to plant decommissioning, specifically focusing on issues related to the long-term storage of SNF and high-level waste on site.[17] The Energy Commission expressed support in the *2015 IEPR* for the legislation co-sponsored by U.S. Senator Dianne Feinstein (D-Calif.) to establish a Nuclear Waste Administration, a consent-based siting process for repositories and storage facilities, and a pilot program for interim spent fuel storage as identified in the Nuclear Waste Administration Act of 2015.[18] In support of the *2015 IEPR* nuclear recommendations, Energy Commission senior staff attended recent federal meetings on power reactor decommissioning and consolidated nuclear waste management. In a recent meeting before the NRC commissioners,[19] I presented issues pertinent to California in addition to submitting formal comments to the *Federal Register* on power reactor decommissioning rulemaking.[20] Moreover, I provided the keynote speech at the DOE Consent Based Siting public meeting held April 26, 2016, in Sacramento, California. This meeting was followed by Executive Director Robert Oglesby presenting at the San Onfore Community Engagement Panel June 22, 2016, meeting on Consolidated Interim Storage.[21]

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

Consent-based siting (CBS) seeks to ensure fairness in the distribution of costs, benefits, risks, and responsibilities now and in future generations. How, in your view, can fairness be best assured by the process for selecting a site?

Achieving and ensuring "fairness" in the siting of a nuclear waste repository requires a commitment to a transparent process of informed consent. Informed consent is achieved only when the affected entities acquire the requisite depth of knowledge and understanding of the constraints and consequences of the proposed plan and processes. To engage in an equitable and virtuous agreement, the negotiation requires engagement of the right entities while ensuring the appropriate support and education during a transparent process. Before any binding agreement is formed, the affected community must clearly understand the nature and consequences of the generational agreement to which they are committing.

17 Letter to Secretary of U.S. Nuclear Regulatory Commission from the California Energy Commission regarding, San Onofre Nuclear Generating Station (SONGS) – License Amendments Regarding the Revision to Emergency Plan and Emergency Action Levels (TAC Nos. MF3838 through MF3843). NRC Accession Number ML15135A304.
18 Senate Coalition Introduces Comprehensive Nuclear Waste Legislation, March 24, 2015. Retrieved from http://www.feinstein.senate.gov/public/index.cfm/press-releases?ID=472C5FD2-3A9A-41F2-B0DB-CF6F9C9570C4.
19 Power Reactor Decommissioning Rulemaking public meeting March 15, 2016, http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2016/.
20 Letter to Secretary of U.S. Nuclear Regulatory Commission from the California Energy Commission regarding the "Amended Comment on the Draft Regulatory Basis: Regulatory Improvements for Power Reactors Transitioning to Decommissioning" (Docket ID: NRC-2015-0070). NRC Accession Number ML 16092A238.
21 San Onofre Community Engagement Panel Meeting on Consolidated Interim Storage. June 22, 2016. Information available at https://www.songscommunity.com/cep-events/062216_event.asp.

The *Blue Ribbon Commission on America's Nuclear Future Report to the Secretary of Energy* (BRC) provides a foundation for developing this process.[22] As mentioned in the BRC, the ethical arguments made in the siting process must be grounded in the principle of intergenerational equity. To achieve true fairness, the agreement should favor the stewards of the nation's nuclear waste over the producers since it will be the stewards who carry the primary risks, burdens, and responsibilities for generations to come. The BRC recommends a process that is consent-based, transparent, phased, adaptive, founded on sound scientific principles, and governed by partnership arrangements.

The degree of regional versus federal oversight must be fairly balanced. Stewardship and custodial responsibility must be jointly shared during development, construction, and long-term storage. Roles and responsibilities must be defined in a way such that considerations of fairness and equity are explicit and effectively support an intergenerational process. As recommended by the BRC, the affected entities should retain—or where appropriate, be delegated—direct authority over aspects of regulation, permitting, and operations where oversight below the federal level can be exercised effectively and in a way that helps protect the interests and gains the confidence of affected communities and citizens. Stakeholders must have a meaningful role in the development of testing protocols, selection of test facilities, and selection of personnel.

History has shown that successful siting decisions are more likely to occur if preceded by a complex, extended set of negotiations between the implementing organization and the affected entities. In support of this process, state-appointed experts can serve and represent the public as part of an independent advisory panel that can provide an impartial perspective. A 2014 report by Sandia National Laboratories points out that a defined method of public participation was critical in the successful siting of nuclear waste facilities in Finland, France, and Sweden.[23] The success of the public's inclusion in the socially onerous waste facility siting illustrates the benefits of a defined method of public participation. Inclusion is essential in building public trust and support for any nuclear program.

Fairness requires that issues of intergenerational equity be considered in developing this process. Respected academics and professionals in sociology, economics, history, and science have extensively published on intergenerational equity and are a valuable resource that must be consulted. The DOE must identify and include intergenerational equity in the siting process and the long-term waste management program to achieve fairness over the facility life cycle.

(2) What models and experience should the Department of Energy use in designing the process?

22 *Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy,* January 2012. Retrieved from http://energy.gov/ne/downloads/blue-ribboncommission-americas-nuclear-future-reportsecretary-energy.

23 Price, Laura, Rob Rechard. *Progress in Siting Nuclear Waste Facilities: Fuel Cycle Research & Development*, Sandia National Laboratories, Sept. 2014, FCRD-NFST-2014-000628, SAND2014-18223R.

The challenges and opportunities of site selection drive us to continue to learn from previous or ongoing examples. From your perspective, what experience and models do you think are the most relevant to consider and draw from in designing the process for selecting a site?

Finland, Sweden, and Canada are examples of international models well advanced of the United States' status. Moreover the BRC report provides a U.S. focused perspective on this process. The BRC report contains 113 pages of collected insight and associated references that can serve as a foundation in developing this process. Furthermore, there are successful models of American communities engaging in the oversight and management of nuclear waste: the Tennessee Local Oversight Committee and the Waste Isolation Pilot Plant in New Mexico. Moreover, the DOE should review a broad spectrum of both successful and failed contentious U.S. siting examples. Contentious siting examples from the nation's 50 states offer direct, relevant U.S. specific experience, insight, and perspectives that the international examples lack. The National Academies' 2003 *One Step at a Time* report identified seven key attributes of adaptive staging that could be modified or incorporated into the development process. One consideration that the federal government should review is a national education program. A national program based upon expansion of models successfully used by foreign governments could be used to trigger national interest while disseminating essential information.

The responsible agencies will be required to develop a system that distributes and/or communicates complex legal and scientific information in an understandable framework for public review. Federal agencies must develop an approach that maintains the highest levels of integrity and trust. The international examples indicate that establishing a relationship based upon trust is essential in developing a successful process. Trust in the quality and impartiality of information is critical in informing the public. Similar to the scientific peer review process, information should be vetted by an open quality-control process that allows all resources and associated sources to be scrutinized and critiqued by accepted experts. Furthermore, to maintain transparency and the public trust, this critique must be available for public review.

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

The Department believes that there may be a wide range of communities who will want to learn more and be involved in selecting a site. Participation in the process for selecting a site carries important responsibilities. What are your views on who should be involved and the roles participants should have?

Early coordination, inclusion, and effective communication with state, tribal, and local governments will be essential to the success of any nuclear program. Moreover, early engagement of impacted communities is critical in developing a successful and supportive relationship. In the early stages, those entities include directly affected tribal, local, and state government. Section 6.6 of the BRC provides a synopsis of the role of the various entities in the consent-based process. As the process starts to develop, communities affected by the potential transport routes will need to be informed and included in the process. Inclusion is especially important for nearby communities that will bear the heaviest shipment traffic and any risk of downstream contamination. Where environmental justice communities will be impacted,

additional measures should be implemented to collaborate with community partners to ensure these vulnerable populations are engaged, informed, and included in the process.

However, the BRC recommendations do not provide a clear role for state government. The CBS process should require early and frequent consultation with governors of potential host states. These consultations should be coupled with public hearings before selecting a site for developing a storage facility and for characterizing a repository. A written consent agreement with the Governor or authorized official of the State and supported by the Legislature, in addition to local and tribal governments, would be required upon a final determination of site suitability but before submission of a license application to the U.S. Nuclear Regulatory Commission. Western Governors believe that the safe and uneventful transport of radioactive materials and spent nuclear fuel must be paramount in all federal policies regarding such transportation.[24] Consequently, state inclusion should consist of the host state governor, affected units of local government (including contiguous counties impacted by transportation), state agencies that have oversight or regulatory authority, and any affected Indian tribe.

As recommended by the BRC, the CBS program should provide a statutory basis for binding agreements between the DOE or managing agency and state, local and tribal governments that consent to a storage or disposal facility. Engagement of state and local government will be a key component as evidenced by recent activity in California. The State Legislature[25, 26], Congressional representative[27], and multiple local City Councils[28] have requested that the federal government let the proposed interim storage sites collect radioactive waste held near populated areas at the retired San Onofre Nuclear Generating Station.

(4) What information and resources do you think would facilitate your participation?

The Department of Energy is committed to ensuring that people and communities have sufficient information and access to resources for engaging fully and effectively in siting. What information and resources would be essential to enable you to learn the most about and participate in the siting process?

The initial information, resources, and level of support should mirror the potential degree of viability of the site and public interest. Information can be easily disseminated through a well-developed website, providing supporting documentation that covers both the pro and con

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24 Western Governors' Association Policy Resolution 2016-03, *Transportation of Radioactive Waste, Radioactive Materials, and Spent Nuclear Fuel,* December 4, 2015. Retrieved from http://westgov.org/policies/307-other/1078-transportation-of-radioactive-waste-radioactive-materials-and-spent-nuclear-fuel

25 SJR 23 (Bates, Res. Ch. 76, Statutes of 2016). Retrieved from http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SJR23.

26 AJR 29 (Chávez, 2016). Retrieved from http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AJR29

27 Sforza, T. (April 4, 2016). San Onofre should have a say in 'consent' nuclear waste disposal, Rep. Issa says. *The Orange County Register*. Retrieved from http://www.ocregister.com/taxdollars/nuclear-710796-department-waste.html.

28 Swegles, F. (February 7, 2016). City backs bill to move San Onofre waste.*The Orange County Register*. Retrieved from http://www.ocregister.com/articles/nuclear-702940-fuel-storage.html.

arguments. Resources should be allocated only for those potential sites that meet the first muster. Moreover, the possibility of profiteering should be addressed in some form to avoid the misuse of funds. As evidenced by the Swedish process, some level of early support may be required and ultimately beneficial in fostering active participation.[29] Initial levels of support should be provided for interested communities to progress through preliminary stages in the siting process. The DOE will need to develop the appropriate tools and resources to support early engagement and to assist the public—including individuals, stakeholders, or members of organizations—with meaningful participation in the programs and proceedings. At the minimum, the DOE needs to develop support resources comparable to those used by the Energy Commission Siting Division.[30] As the process develops, the amount of information, education, and support should scale appropriately.

California hosts four independent spent fuel storage installations (ISFSI) at three decommissioning and one operating site. The appropriate state agencies will be engaged in this process and expect the DOE to coordinate and communicate effectively with state, tribal, and local governments. Some means of direct, reciprocal communication between federal and state agencies must be established early in this process to best support the safe and uneventful transport and storage of radioactive materials and SNF. By implementing best practice methods, federal agencies working with states, affected stakeholders, and industry will need to design a coordinated system.

A clearly defined and vetted justification of national purposes is essential in consent-based siting—the subject of this initiative and recommended by the BRC.[31] Siting a facility or even identifying potential sites triggers and sets a destination for SNF transport and is a critical, substantial determinant of potential transportation routes and associated impacts.[31] To reduce transportation impacts at both the origin site and along the adjacent route segments, DOE must coordinate its activities with state agencies to achieve effective and efficient removal. To achieve the best possible outcome, Congress or the DOE will need to address explicitly the current deficiencies in communication and collaboration.

(5) What else should be considered?

The questions posed in this document are a starting point for discussion on the design of the process for consent-based siting of nuclear waste facilities, the Department of Energy would like to hear about and discuss any related questions, issues, and ideas that you think are important.

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29 Swedish Radiation Safety Authority – Spent Nuclear Fuel Repository: Review Process. Retrieved from http://www.stralsakerhetsmyndigheten.se/In-English/About-the-Swedish-Radiation-Safety-Authority1/Spent-nuclear-fuel-repository/Review-Process/. & Ulf Rossegger, Programme elements of Swedish nuclear waste management – implementing with what results? Energetika. 2014. T. 60. Nr. 1. P. 54–68. Retrieved from https://www.entria.de/uploads/tx_tkpublikationen/Rossegger_Programme_elements_of_Swedish_nuclear_waste_management.pdf.

30 Califonria Energy Commission - *Public Participation in the Siting Process: Practice and Procedure Guide,* Publication Number: CEC-700-2006-002. Retrieved from http://www.energy.ca.gov/2006publications/CEC-700-2006-002/CEC-700-2006-002.PDF.

31 Williams, J. (2016). Discussions on Western Interstate Energy Board High-Level Radioactive Waste Committee Draft Policy Recommendations.

Lessons Learned from Yucca Mountain

DOE must avoid the mistakes made during the Yucca Mountain proceedings. Three key issues that the federal agencies must avoid are (1) losing technical and scientific credibility, (2) underestimating or ignoring the transportation impacts, and (3) failing to achieve stakeholder confidence. Public fear of nuclear materials and radiation coupled with a distrust of the federal government create a significant barrier to nuclear siting. Successful design and implementation of a CBS process will be defined by the perceived nature of the initial federal efforts. Early failures or stumbles will only justify and reinforce negative bias. It is critical that the early stages of the process be founded in integrity and transparency so that federal CBS activities are perceived as fair and balanced.

The politicized selection of Yucca Mountain failed to consider the implications of the number of shipments, the distance, or the impact to corridor communities. The Yucca Mountain EIS did not directly identify affected corridor communities along the considered routes,[32] or the homes, schools, hospitals, or community centers located along the routes. Furthermore, the Yucca EIS failed to identify other forms of traffic on or crossing the routes and the characteristics of the community that might affect the residents' responses to the prospect of 25 years of SNF transport. All future sites should be assessed in full and in comparison to avoid similar failures and with a focus on avoidance, mitigation, and management of all transportation impacts. CBS program development will require the DOE to transparently communicate impacts and risks, both to host and transportation stakeholders, in a method that supports and promotes risk reduction and impact management.

Law of the Land and Congressional Variance

Consent is not the law of the land, nor is a consent-based approach traditional practice for the federal government. Generally, consent is not asked or given, as evidenced by the Yucca Mountain contentions. Moreover, Congress or the DOE must address questions on whether consent is actually possible and to what extent any agreement is valid if a new administration, with congressional support, can rewrite the terms. Federal funding, contracts, and agreements can be altered. Laws can be changed, as evidenced by the Nuclear Waste Policy Act amendments of 1987. There is still significant uncertainty on how to protect a process and program that is longer than any term of office or human lifespan.

Transportation and Site Coordination Considerations

The siting of interim storage facilities and the siting of permanent repositories are only two heads of the nuclear waste hydra. Significant lead time is required to develop and establish the required processes for any significant shipping campaign. It could be argued that informed consent has not been given if the host and adjacent communities are not fully informed of the associated transport logistics and risks. Furthermore, communities along transportation corridors must be informed and prepared. Coupling the development of the waste transportation issues to consent-based siting might be the proper method and should be reviewed. Since the location of all stored

32 Subsequent assessment by Fred Dilger identified 891 directly affected corridor communities: 100 in the Northeast, 298 in the South, 353 in the Midwest, and 140 in the West.

waste is known and two possible interim sites have been identified, development and planning of the various elements of the transportation campaign should begin in earnest.

Federal agencies should make an effort to review and take advantage of the work and knowledge found in many of the state collaborative efforts such as the Western Governors' Association and Western Interstate Energy Board.[33] It has been estimated that advanced planning time frames on the order of a decade would be required to develop a coordinated transport strategy and the associated logistics and physical infrastructure.[34] Defining priority shipping factors and developing a shipping schedule are likely to become contentious issues. Furthermore, older decommissioning facilities and stranded ISFSIs have less direct management oversight, security, and regulatory monitoring than operating facilities; consequently, they represent a unique risk profile that must be addressed. Identification of shipment priority should begin early in this process. Moreover, early identification provides the essential lead time required to develop the transportation procedures, routes, policies, and supporting state and local infrastructure.

As recommended by the National Academies of Science report on the safe transport of SNF, it is important that the DOE begin identifying and prioritizing sites so that an initial shipment schedule can be developed.[35] A first step in this process is engaging with impacted communities. California communities near decommissioning sites desire the rapid development of a storage facility to remove waste from decommissioning sites. Shipment priority and scheduling should be based upon a risk assessment with older decommissioning facilities slotted into the first tier, followed by operating sites. Planning and preparations for shipments from at risk decommissioning sites, such as San Onofre, Rancho Seco, and Humboldt Bay, should be given priority, as a recommended in the *IEPR*.[36] ISFSIs in regions exposed to seismic or weather events should be first on the list. In support of early planning, the DOE must recognize that transportation impacts require a fuller assessment than what was performed for the *2008 Environmental Impact Assessment for the Yucca Mountain Project*.[31] Program design must avoid impacts when possible and mitigate when impacts cannot be avoided.

The safe, uneventful transport of radioactive materials and spent nuclear fuel must be paramount in all federal policies regarding such transportation and with regard to all transportation modes, including truck and railway. In a 2014 report, the State of California Interagency Rail Safety Working Group outlined serious vulnerabilities along rail lines such as close proximity to population centers, earthquake faults, lack of adequate emergency response capacity, natural resources, and a number of "high hazard areas" for derailments, generally located near

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33 Niles, Ken, and Rick Moore, "The WIPP Transportation Program at 10 Years: Making the Case for Above-Regulatory Procedures," Waste Management Symposium, March 2009, at p. 4 (available at http://www.brc.gov/sites/default/files/comments/attachments/above-regulatory_transport.pdf).
34 Presentation of Lisa Janairo, Midwest Council of State Governments, to the BRC Transportation and Storage Subcommittee, Nov. 2, 2010 (accessible at http://www.brc.gov/index.php?q=meeting/open-meeting-3).
35 Transportation Research Board and National Research Council. *Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States*. Washington, DC: The National Academies Press, 2006. doi:10.17226/11538.
36 California Energy Commission. *2015 Integrated Energy Policy Report*, February 2016, Publication Number: CEC-100-2015-001-CMF. Retrieved from http://www.energy.ca.gov/2015_energypolicy/index.html.

waterways and fragile natural resources.[37] A Natural Resources Defense Council fact sheet on crude by rail in California identifies how more than 3.8 million people live within 1 mile of proposed routes.[38] In support of the safe and uneventful transport of material, DOE must continue to provide sufficient and timely in-kind, financial, technical, and other appropriate assistance to communities through whose jurisdiction waste will be transported for planning, developing, and implementing a transportation safety program. The Western Governors' Association believes it is the responsibility of the generators of spent nuclear fuel and high-level radioactive waste and the federal government, not the states and tribes, to pay for all costs associated with assuring safe transportation, responding effectively to accidents and emergencies that may occur, and otherwise assuring public health and safety.[39] This includes costs associated with evaluating routes and inspecting and escorting shipments.

A critical condition for program acceptance and consent is confidence among representatives of affected states, entities, and prospective corridor communities in the system, components, security, and processes. Origin site coordination will require extensive lead time and early inclusion of state agencies and affected parties will be critical in route preparation, scheduling, planning, and deployment. To obtain the appropriate level of program buy in, confidence must be developed by engaging with representatives of the affected parties in a process involving a comprehensive program evaluation. Confidence in a broader program for route preparation, transport processes, and removal priorities requires a central role for affected states.

National Education and Communication Program

Broadening the process to include affected adjacent communities will be critical in choosing a final site. Engagement of "potentially" impacted communities may need to begin at some period before the license application and should not occur after license approval. As the license approaches approval, communication with the transportation corridor communities will be necessary. A possible solution could include a national education and communication program that consists of reputable scientific literature, video programs consisting of independent reports, and panel debates or discussions that present all sides of the issue. Furthermore, this will require a comprehensive approach to communicate the technical and scientific issues with multilingual communities. To this end, impacted communities should be consulted for input on the most effective educational and communication models for their community. Any program will need to support multiple languages and cover a broad spectrum of background knowledge. To maintain the integrity of the process the federal government must engage in a transparent inclusive approach.

Adverse Economic and Social Impacts

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37 *State of California Interagency Rail Safety Working Group, Oil by Rail Safety in California: Preliminary Findings and Recommendations*, June 10, 2014. http://sd27.senate.ca.gov/sites/sd27.senate.ca.gov/files/Oil%20By%20Rail%20Safety%20in%20California.pdf.
38 Natural Resources Defense Council, California Crude Oil by Rail Fact Sheet, June 2014; https://www.nrdc.org/sites/default/files/ca-crude-oil-by-rail-FS.pdf.
39 Western Governors' Association Policy Resolution 2016-03, reference 22.

Adverse economic and social impacts are potentially as important as health and safety issues; special government efforts, possibly advisory groups, will be needed to manage social and economic impacts before and during shipments.[28] The DOE or a sibling agency needs to assess and consider the social and economic risks and associated consequences a minor shipping incident would have on both short- and long-term efforts. Moreover, federal agencies need to identify what level of an incident is the predicted threshold for a community-triggered backlash and the eventual derailing of the entire process due to civilian opposition. Recent developments and research in social risks need to be considered due to the size and scope of this process. Potential economic benefits should also be assessed and considered for impacted communities. Advisory groups should also identify environmental equity efforts to ensure that workforce development and training opportunities for local communities are included in a selection process.

Because of the intergenerational nature of a permanent repository, the fair treatment defined in statute and code may be insufficient, requiring federal agencies to expand environmental justice legislation to protect those individuals or communities most likely to disproportionately bear the burdens imposed by a nuclear waste repository. Efforts to effectively address fairness and equity in the CBS program will require partnership, coordination, and support. In efforts to pool all available knowledge of the impacted community and bring it into the process, a dedicated environmental justice advisory team may be needed to focus outreach on local, affected members, and stakeholders with a background and understanding of the community.[40]

Binding Agreement
The DOE should review the BRC recommendation on when to define a binding agreement. The BRC recommends that the right to opt out expires at the point of license application. The DOE should consider the cost and consequences of pushing the binding aspect of the agreement back to some period between license approval and site construction. The license review and approval process will provide more information and insight and, hence, lead to a greater degree of informed consent.

(*) Additional comments?

Any additional comments that do not address a particular question should be included at the end of your response to this IPC as ‘‘Additional Comments.’’

Successful endeavors require collaboration. Therefore, developing public trust is essential in the successful conclusion of all programs involving nuclear issues. The foundation of public trust and support in a new relationship may be achieved through early engagement in the Nuclear Regulatory Commission’s efforts to develop new rules for decommissioning nuclear power reactors. A positive working relationship founded on respect and trust can be developed through federal agencies implementing changes to power reactor decommissioning processes that support state and local roles. While the concerns and procedures for siting a waste repository are distinct

40 California Energy Commission Public Advisers Office. Environmental Justice Resources. Retrieved from http://www.energy.ca.gov/public_adviser/environmental_justice_faq.html.

from developing power reactor decommissioning rulemaking, the successful inclusion of the public in the decommissioning process provides a defined method of public participation. Two relevant decommissioning recommendations that may be directly applicable to the CBS process are:

1. Formation of a citizen's advisory/oversight board composed of state and local government representatives, community representatives, and affected stakeholders that are engaged at the earliest stages of the process as essential in developing a consent-based, adaptive, staged process intended to maintain the public trust and support.
2. Expansion and enhancement of the current role of the States, the public, and other stakeholders in the CBS process.

The foundation of public trust developed in the inclusive NRC decommissioning process can then be rolled into the more socially onerous waste facility siting process. Success in the NRC decommissioning rulemaking adds value to the CBS process in the form of increased public support and confidence. A CBS process that communities and stakeholders nationwide find legitimate, effective, trustworthy, and practical will require careful reflection and attention to procedures in developing and implementing core principles of consent and addressing challenges that can undermine them.

We appreciate the opportunity to comment on the design of a consent-based siting process and request that you consider these comments before developing an integrated waste management system to transport, store, and dispose of commercial spent nuclear fuel and high-level radioactive waste. Please send any future notices, correspondence, and documents related to these comments to Justin Cochran, Ph.D., Senior Nuclear Policy Advisor, California Energy Commission, MS-36, 1516 Ninth Street, Sacramento, CA, 95814-5512, or via email at Justin.Cochran@energy.ca.gov.

Sincerely,

ROBERT B. WEISENMILLER
Chair and State Liaison Officer to NRC

cc:
Robert P. Oglesby, Executive Director, California Energy Commission
Justin Cochran, Senior Nuclear Policy Advisor, California Energy Commission