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**IEER COMMENTS ON DOE'S SOLICITATION OF COMMENTS ON THE
"DESIGN OF A CONSENT-BASED SITING PROCESS FOR
NUCLEAR WASTE AND DISPOSAL STORAGE FACILITIES"¹
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Sent by email to consentbasedsiting@hq.doe.gov.

"Consent" in a democracy must always be informed consent. As the Nuclear Energy Information Service noted in its comments:

INFORMED CONSENT (legal definition) is: Assent to permit an occurrence that is based on a complete disclosure of facts needed to make the decision intelligently, such as knowledge of the risks entailed or alternatives.²

Informed consent is all the more necessary in regard to an issue as fraught as nuclear waste, including spent fuel (which contains the vast majority of radioactivity in all nuclear waste). An experiment with a drug requires informed consent, for instance. What should be the standard of informed consent in regard to matters involving security for eons (given the plutonium-239 content of spent fuel) and involving health risks for even longer, given that the half-lives of some fission products, like iodine-129 and cesium-135 are in the millions of years? Informed consent can never be in the abstract: it is the obligation of the DOE to inform the public exactly what is involved. The DOE has fallen very far short of what is needed in its discussion of "Integrated Waste Management". Since the DOE is seeking comment on what a "consent-based siting process" should consist of, IEER is setting forth some minimal requirements.

¹ Federal Register Notice of 23 December 2015 at <https://www.federalregister.gov/articles/2015/12/23/2015-32346/invitation-for-public-comment-to-inform-the-design-of-a-consent-based-siting-process-for-nuclear>.

² NEIS 2016. Final Comments of DOE's "Consent-based" Siting of Radioactive Waste Facilities, July 30, 2016. Quoted with permission, emphasis in the original.

1. First of all, consent should not be sought for a “siting process”. Consent should be sought for geologic isolation of waste, which is more complex but which is, or should be, the goal. Consent for any “interim” measures should be in that context.
2. In light of the requirements of geologic isolation, it is entirely premature to seek consent for a siting process. If the storage and disposal of spent fuel and high-level waste is seen as an “integrated” process, as the DOE claims, then it is imperative to recognize that disposal will consist of three technical elements working together: (i) the repository site (or geologic setting); (ii) the various barriers to package and contain the waste, and (iii) the sealing systems for the repository. These elements working together create an isolation system, not the site alone, which cannot assure adequate isolation. A geologic repository is a vast mine in which thermally hot, radioactive wastes will be disposed of, notably in the case of spent fuel or derivative high-level wastes. It is a highly perturbed system. To ignore that fact is to ignore some of the most essential technical aspects of the isolation system. Therefore, informed consent means that the DOE, or preferably the waste management agency recommended by the Blue Ribbon Commission,³ must first study, with already available information, potential combinations of these three elements. Then it can make a list of potential sites, barriers, and sealing systems that may work at least in theory. If the process is sound, it will be able to specify the combinations that are unlikely to work. Geologic isolation systems also require redundancy, since estimates of impact over eons are uncertain. Only after these initial scientific and technical assessments have been completed would the DOE (or other institution) be able to go to communities and inform them about the range of potential consequences now and into the far future. Seeking consent in the absence of the systematic prior analysis is to undermine the democratic process and misinform the public. Moreover, given the technical difficulties involved in geologic isolation and in combining the three elements (including any provisions for redundancy), it is also likely to result in decisions that are deeply flawed. This is, among other things, a recipe for future failure and further waste of public money.
3. The kind of assessment prior to siting discussed in the prior paragraph must be done in the context of stringent environmental and health protection standards for geologic isolation. *These must be set before siting is even considered.* It is essential that these standards be at least as stringent as those we use today including those applying to nuclear operations (40 CFR 190.10(a)) and drinking water standards (40 CFR 141.66). A failure to commit to this minimum of radiation protection prior to seeking consent is like asking consent for an experiment on thousands of generations into the future with no sense of the extent of protection to be afforded to those who did not even benefit from the nuclear energy that created the waste. We cannot actually consult the generations far into the future who will be affected by actions today and in a few decades to come. The only practical proxy for that is to guarantee as best we can that their health and environment will be protected as we do ourselves today. As it is, these standards are inadequate. For instance, no environmental radiation protection standard today

³ Blue Ribbon Commission on America’s Nuclear Future. *Report to the Secretary of Energy*, DOE for BRC, Washington, DC, January 2012. On the Web at http://www.energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf. page vii.

explicitly or adequately protects pregnant women who want to have children during the *in utero* period.⁴ A guarantee that the standard will at least conform to 40 CFR 190.10(a) (and not some watered down version of it) and to 40 CFR 141.66 is the first requirement for getting even a modicum of proxy consent from future generations. The second is to acknowledge that we have unfairly burdened future generations without corresponding benefit. Consent in that regard therefore involves limiting future creation of highly radioactive waste, including spent fuel, so that an endpoint is visible to those giving consent today. The DOE has not fulfilled either of these preconditions for consent.

4. The DOE must be explicit about the past history of failures of repository siting, including that under the 1982 Nuclear Waste Policy Act and its amendments, including its own role in these failures.
5. In brief, a consent-based process must be *preceded by a science-based and health-based process* that includes criteria for and analysis of a geologic isolation system and health and environmental standards by which to assess performance. Without such scientific and standard-setting process prior to any discussion of “consent” is necessarily uninformed and undemocratic.
6. The above comments relate to geologic isolation. All interim storage considerations must be set in the context of geologic isolation. Without that, proposals for moving spent fuel to one or more new sites would be a waste shell game, adding one more site to the dozens that already exist; it simply creates new risks. Specifically, an interim site will add risks from the vast amounts of transportation, with potentially zero net increase in benefits. Moreover, it is a significant risk, even if there is “consent” for “interim” storage that that storage site will become permanent in the absence of a geologic isolation process that is firmly in place. The community will have no recourse if the “interim” period becomes more and more prolonged, indeed permanent. In this context the DOE should disclose the various ways in which it has violated commitments in the past, including in relation to its contracts to begin to take spent fuel from utilities by 1998 and, in another realm, its repeated failure to fulfill its commitments under the Tri-Party Agreement relating to the Hanford site.
7. A failure to embark upon a science-based and health-based process first, *prior to seeking consent for any part of the spent fuel and high-level waste management process*, is to create a high likelihood of environmental injustice – that is, the facilities, whether interim or permanent, will be in some combination of poor, minority, Native American, or rural areas.

Minor revisions made on August 2, 2016, after the Comments were submitted

⁴ See Arjun Makhijani, Brice Smith, and Michael C. Thorne, *Science for the Vulnerable: Setting Radiation and Multiple Exposure Environmental Health Standards to Protect Those Most at Risk*, Institute for Energy and Environmental Research, Takoma Park, Maryland, October 2006. On the Web at <http://ieer.org/wp/wp-content/uploads/2006/10/Science-for-the-Vulnerable.pdf>.