

# Scoping Comments on the Waste Confidence Generic Environmental Impact Statement

This document accompanies the Waste Confidence scoping summary report (ADAMS Accession No. ML13060A128). Comment excerpts are listed below by category. Comments are identified by the comment identification number (correspondence number-comment number) and the name of the commenter at the end of each excerpt.

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## 1. Comments Concerning Land Use

**Comment:** The EIS must include bounding estimates for...the worst case loss of agricultural land and production...(0286-54 [Curran, Diane])

## 2. Comments Concerning Socioeconomics

**Comment:** The EIS should rigorously explore all of the potential environmental impacts associated with long-term and indefinite storage of nuclear wastes at reactor sites following reactor shutdown, including ... the social and economic impacts on the communities where these nuclear wastes will remain indefinitely at sites where there are no operating reactors. (0275-11 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** In addition, there are important, and site-specific, economic implications of the indefinite storage of spent fuel at reactor sites. Property in the vicinity of the plant will have its potential uses and value impacted by the continued presence in the neighborhood of all the downside risks of a nuclear reactor - enormous quantities of highly toxic nuclear wastes and the risks of accidental or malevolent events causing a release of that waste - without any of the

benefits of an operating nuclear reactor generating tax revenue, income, and jobs, all of which are frequently cited by NRC as counterbalances to the adverse impacts of nuclear plants. (0275-3 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The EIS should also take into account the continued, indefinite presence of the ISFSI and what that means for host communities like the City (Red Wing, Minnesota). (0291-2 [Harlan, Thomas])

**Comment:** Socioeconomic Factors and Impact. The EIS, consistent with NEPA principals, should address a number of different socioeconomic factors that the continued dry cask storage will have on human environment. (0291-21 [Harlan, Thomas])

**Comment:** With this growing number of dry casks accumulating at the PINGP (Prairie Island Nuclear Generating Plant), a significant new burden has been placed upon the City (Red Wing, Minnesota). With the current and unprecedented uncertainty regarding the final disposition of spent fuel the City is greatly concerned about the spent fuel's current and future impacts. Additionally, as a result of the stranding of the spent fuel the City will be obligated to maintain a high level of public safety services. However, the City, the Company (should it retain the land), or any other owner will not be able to recapture and develop the area to its highest and best use. This will deprive the City of its natural growth and the potential tax revenue that will come from the same. (0291-22 [Harlan, Thomas])

**Comment:** Finally, as roads, bridges, and other infrastructure are constructed and placed in service over the next 60, 100 and 200 years, the ISFSI [at the Prairie Island Nuclear Generating Plant] will have to be accommodated. This will require going around it and departing from normal, customary planning and development patterns. (0291-23 [Harlan, Thomas])

**Comment:** It should incorporate a firm economic analysis (including such factors as individual and business threshold analysis for a viable economic entities, economic activity overall), as well as income, employment, and taxes being generated. In addition, it should evaluate the social and cultural aspects of the same by valuating population and demographic changes, changes in lifestyle, stability in the community, land use patterns, and public safety and health. It should then trend this information forward and analyze it in a both positive and negative assessment, including a number of other factors including agriculture, residential, government activities and expenditures, manufacturing and industrial, financial and real estate, as well as tourism and recreation. (0291-24 [Harlan, Thomas])

**Comment:** The other big thing that I believe must be considered in scope is states' rights. Since the original siting for nuclear plants was done with an understanding that the waste would be removed and handled by the federal government and not left on the site indefinitely, as -- which it now will be, at least for the long term as we foresee, and that significantly changes the states' responsibility, and it's a new use of the land. (0004-25-15 [Shapiro, Susan])

**Comment:** Therefore it may have tax implications...(talking about state's rights vs. Federal government). (0004-25-16 [Shapiro, Susan])

**Comment:** All States must be included as cooperating and involved agencies as a change in the Waste Confidence Rule to allow for interim or long term, 60 year storage of high level nuclear waste which was not contemplated or approved by the States in the original approvals granted by the States for use of state lands and waters. Interim or long term dry cask storage of

nuclear waste is essentially a new use of the State lands and creates much greater and continuing threats to the surrounding reactors communities. (0296-11 [Shapiro, Susan])

### 3. Comments Concerning Environmental Justice

**Comment:** We oppose nuclear waste dumps. A general waste confidence rule would be based on finding one or more waste dumps which would be located in economically stressed communities. Potential sites would be in the southeast, such as Savannah River or on Native American land such as Yucca Mountain. We will continue to oppose them on the basis of environmental justice. (0004-14-4 [Zeller, Lou])

**Comment:** Pilgrim is located close to Native American Wampanoag communities on Martha's Vineyard and Mashpee, of whom have an interest in the environmental impacts of the long-term waste storage. (0004-23-4 [Sheehan, Margaret])

**Comment:** The question, how the NRC could conduct an environmental justice analysis generically and environmental justice issues and concerns are by their very nature site specific? (0004-4-4 [Johnson, Ron])

**Comment:** For too long the poor, rural, native and other vulnerable groups have been forced to accept or bribed into letting dangerous substances inhabit their states and neighborhoods. Please be certain this does not happen. (0041-3 [Kersting, John])

**Comment:** And the last thing I'll mention, we talked about environmental justice today, but I would put forward that NRC should include in its considerations the issue of generational justice. (0118-17-13 [Kamps, Kevin])

**Comment:** I was prompted by, I believe Lou Zeller's mention of environmental justice. That issue should certainly be within the scope of this proceeding. NRC, itself, unfortunately is guilty of environmental justice violations. And I point to the Skull Valley Goshutes Indian Reservation in Utah, where NRC granted a construction and operating license, I believe it was in 2006, to private fuel storage, Limited Liability Corporation, a consortium looking for utilities to store 40,000 metric tons of commercial or radiated nuclear fuel, on this tiny Indian Reservation. The EJ impacts of that proposal, already approved by NRC. The Prairie Island Indian community, which is the unwilling host of two atomic reactors, as well as the dry casks storage within a few 100 yards of tribal residents and the tribal daycare center. So NRC needs to look at EJ across the board. (0118-17-3 [Kamps, Kevin])

**Comment:** So those could be showstoppers, if environmental justice was taken seriously by the federal agencies. (0118-17-5 [Kamps, Kevin])

**Comment:** An Environmental Justice analysis should be part of this EIS. Two key questions are essential guides to an adequate EJ analysis: Who bears the burdens? Who reaps the benefits? Historically some groups bear more of the negative consequences of a policy, while small groups receive all the benefits, such as a particular company or industry. In the US nuclear waste has particularly burdened Native Americans. Environmental justice should also embody generational justice, as large amounts of nuclear waste are generated for short term energy use, yet future generations will need to carefully manage this waste over the long term. (0269-20 [Warren, Barbara])

**Comment:** Questions of environmental justice such as who bears the burdens and who reaps the benefits must be considered in the environmental impact statement. Native Americans and other people of color and poor communities have historically been disproportionately impacted by the mining, generation and storage of radioactive nuclear fuel. (0269-5 [Warren, Barbara])

**Comment:** We [Blue Ridge Environmental Defense League] oppose nuclear waste dumps. A general waste confidence rule would be based on finding one or more waste dumps which would be located in economically stressed communities. Potential sites would be in the Southeast, such as Savannah River, or on Native American land, such as Yucca Mountain. (0273-5 [Zeller, Lou])

**Comment:** The EIS should rigorously explore all of the potential environmental impacts and impacts to Native American Communities across the United States associated with long-term and indefinite storage of nuclear wastes at reactor sites following reactor shutdown, including the risk of fires, earthquakes, flooding (resulting from tidal and storm surges or infrastructure failures), loss of power and cooling capacity, deterioration of the social order (either briefly or for an extended period of time), deterioration of spent fuel pools and dry casks, failure of funding sources to provide sufficient resources to manage and secure nuclear wastes at each reactor site long after the site is no longer a source of any income to its owner, the social and economic impacts on the communities where these nuclear wastes will remain indefinitely at sites where there are no operating reactors, and malevolent acts. (0284-4 [Collins, Fred])

**Comment:** It is also essential for the scope of the EIS to include environmental justice impacts. (0286-57 [Curran, Diane])

**Comment:** It is also essential for the scope of the EIS to include environmental justice impacts. Many of them are also site-specific. (0286-87 [Curran, Diane])

**Comment:** A general waste confidence rule would be based on finding one or more waste dumps most likely located in economically stressed communities, which I oppose. (0290-6 [Craig, Anne])

**Comment:** Site specific impacts on Environmental Justice issues as a result of long term high level nuclear waster storage must be fully evaluated in the EIS. (0296-19 [Shapiro, Susan])

**Comment:** Site specific impacts on Community Character as a result of long term high level nuclear waste storage must be fully evaluated in the EIS. (0296-20 [Shapiro, Susan])

**Comment:** EISs also must contain an environmental justice analysis, that is, an analysis of impacts to determine any disproportionately high and adverse human health or environmental effects to low-income, minority, and tribal populations as a result of implementing the proposed action. Since an environmental justice analysis is, by its very nature, site-specific, we would like to know how a generic EIS could possibly capture the environmental justice effects of failing to secure a national repository. A "one size fits all" approach will not work in this case. The environmental effects of failing to establish a repository (i.e., the spent nuclear fuel remains on site) will vary from site to site depending on the affected environment. (0321-7 [Mahowald, Philip R.])

#### 4. Comments Concerning Meteorology and Air Quality

**Comment:** We need -- the scoping must include a long-term evaluation of the heat waste impacts on thermal pollution. (0004-25-5 [Shapiro, Susan])

**Comment:** Climate change impacts of nuclear waste storage, specifically the cumulative, long term waste heat impacts, long term impact on thermal pollution to the environment must be fully accessed. (0296-29 [Shapiro, Susan])

**Comment:** It's not just California as well that suffers these -- again, the ability of flood waters near Oyster Creek as a result of Hurricane Sandy or the flood waters on the Missouri River at Fort Calhoun. If you're looking at a process that's going to look at spent fuel storage on site for 100 to 200 years then those 100-year flood zones which, as we've now discovered, can happen. Then global sea level rise over the next century on the riverine and coastal locations must be considered as well. (0004-15-4 [Weisman, David])

**Comment:** We also urge you to consider the changing design bases or the changing -- what should be a different design basis if we were to build a lot of these facilities today versus when they were first built. Not only are we constantly learning more about geology and seismology, but I think that climate change is a real thing that we should be concerned about. As we've seen in the last few years, hurricanes are stronger than they've been before, there's been more flooding in different areas of the country, and we need to be thinking about not just, you know, the past standards that we've accepted but what's coming down the pipeline and, you know, how these facilities are going to stand up to the storms of the future and things of that nature. (0004-18-6 [Fuchs, Katherine])

**Comment:** Climate change impacts for the next 100, 200, 300 years must be in scope. (0004-25-10 [Shapiro, Susan])

**Comment:** We [citizens] have to deal with this now, especially with weather changes, the global warming climatory [sic] change. We really must secure a safe future. (0005-17-7 [Laramie, Eve])

**Comment:** Another area of scoping that I think is appropriate here is rising sea levels. So, you know, we've seen flooding at nuclear power plants in recent times, Fort Calhoun in summer 2011, that was historic floods on the Missouri River, that came very close to the dry cask storage, that did implicate the pools. (0005-7-1 [Kamps, Kevin])

**Comment:** Some of the issues that I request that the NRC and Licensees address in this rulemaking include: Global warming impacts on temporary storage. (0009-4 [Lewis, Marvin])

**Comment:** Considering Hurricane Sandy and the damage NYS has seen just in the passed two years from storms and flooding, our public safety is at an all time low and spent nuclear fuel pools make it even lower in the path of climate change and super storms. (0021-2 [Zigmund, Sean])

**Comment:** It is hard to know if a storage facility will withstand the more severe storms and floods that climate disruption brings. (0053-3 [Unger, Art])

**Comment:** Now that Climate Change is here, we can imagine hurricanes that totally overwhelm the infrastructure of major cities. Did we ever think that New Orleans or New York City would be

so profoundly damaged by storms in our lifetime? The 100 year storms, as Governor Cuomo so aptly stated, come every couple of years. Hot summers because the waters that nuclear power plants depend on for cooling, to be too warm in the summer. Fort Calhoun in Nebraska remains closed over one year after the Missouri flooded around it. Hurricane Sandy put 16 nuclear power plants in its path on alert. The spent fuel pool at Oyster Creek narrowly averted disaster. How many warnings must we ignore? How much longer will we depend on luck rather than good planning to do what needs to be done? (0058-11 [Dubois, Gwen L])

**Comment:** The problem of surrounding lake water being too hot (due to global warming) to actually cool the reactors and the wastes should not be overlooked. (0092-6 [Kukovich, Kenneth M.])

**Comment:** In going forward with what Kevin Kamps had to say, it is clear, if you're looking at 2050 or the beginning of the next century, it's too far in the future to be able to make any reasonable judgment regarding climate change. (0118-11-2 [Lampert, Mary])

**Comment:** I wanted to raise in this, you know, waiting until 2050 or 2100, to even begin movement of the waste, perhaps, away from the reactor sites, is we just experienced here in Michigan at a place like Palisades, 20 foot waves on Lake Michigan during the chaos surrounding Hurricane Sandy. So, an issue that the NRC needs to look at, especially in an era of climate chaos or climate crisis, is whether the dry-cask storage facility at Palisades, 100 yards from the water, is stable over a 50 or 100 year period of time. Or will the beach simply erode into the lake and the dry-cask storage along with it. (0118-9-2 [Kamps, Kevin])

**Comment:** As was mentioned, I believe by Lou Zeller, the possibility of sea level rise over a 50 or 100 year time period, the height, the elevation above sea level of the facilities on the sea coasts. Again, Hurricane Sandy, the storm surge came very close to inundating the service water pump at the Oyster Creek Nuclear Power Plant, it came within inches of doing that. (0118-9-4 [Kamps, Kevin])

**Comment:** ...[W]e must prepare for possible worst-case scenarios, especially in this period on self-created climate change. (0129-5 [VanWicklen, Betty J.])

**Comment:** Impacts of Global Warming to dry cask storage must be included in the EIS. (0148-31 [Lampert, Mary])

**Comment:** Finally, sites that are likely to be breached by sea level rise within their design lifetime need to be rejected, and any waste relocated. The likely sea level rise over the next 100 to 10,000 years is about 60 meters, due to the increase in atmospheric CO2 and methane melting the Antarctic and Greenland ice caps. (0225-3 [Filler, Matthew])

**Comment:** The unpredictable and dangerous effects of global climate change must be factored into the analysis. (0269-7 [Warren, Barbara])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: risks to coastal plants from rising sea levels due to climate change. (0272-7 [Weisenmiller, Robert B.])

**Comment:** Climate change is exacerbating the already dangerous on-site storage of radioactive waste and its ultimate permanent disposal. Extreme weather and rising water levels, due to

global warming, are of particular concern at reactors located along and near U.S. coastal areas. (0277-6 [Roskos, Laura])

**Comment:** NRC must incorporate CLIMATE CHANGE in its EIS. This is important at all reactor sites and potential sites and especially important at West Valley as it was not taken in to consideration in the 2010 "phased decision making" decision to move the high level waste from its current storage in the large reprocessing building to temporary dry storage outside without shielding in temporary dry casks. (0285-17 [D'Arrigo, Diane])

**Comment:** In addition, peer reviewed and federal assessments of sea-level rise and climate instability should be factored against the continued production of this material. (0285-5 [D'Arrigo, Diane])

**Comment:** Critical uncertainties were not evaluated in the Yucca Mountain EIS. Perhaps the most important for the No-Action Alternative is the problem of climate change. It is reasonably clear that it is prudent and scientifically appropriate to assume more frequent and more severe storms, more frequent flooding or droughts, depending on the location of the nuclear power plant, and possibly more intense and frequent tornadoes. (0286-83 [Curran, Diane])

**Comment:** Whatever uncertainties there may have been a decade ago about the severity of climate change, the picture is much clearer now and more data and analyses exist. The Waste Confidence EIS must consider and model climate factors in detail because they are likely to be among the most important factors in causing or aggravating damage from prolonged storage of spent fuel. The Yucca Mountain No-Action Alternative recognized that serious climate change impacts are highly likely over long periods of storage but failed to quantify the impacts." This is another reason that the NRC cannot rely upon the Yucca Mountain EIS's No-Action Alternative. (0286-84 [Curran, Diane])

**Comment:** Climate change impacts over the next 100 to 200 years must be included in within the scope of the EIS. (0296-27 [Shapiro, Susan])

**Comment:** Climate change impacts on nuclear waste storage including, but not limited to, extreme weather events which could damage off-site power necessary to cool spent fuel pools, or damage unhardened dry cask storage, must be considered in the EIS. The impacts on interim and long term nuclear waste storage due to rise in water levels of adjacent waterbodies which result in reclamation of underwater lands in 100 year flood zones. (0296-28 [Shapiro, Susan])

**Comment:** We urge you to include the following comments: looking at effects of climate change. (0323-3 [Birnle, Patricia T.])

**Comment:** We urge you to include the following comment on...natural disasters. Hurricane Sandy in 2012 and Fukushima's earthquake and tsunami in 2011 illustrate the dangers and risks of increasingly severe weather conditions that scientists tell us are going to get worse. Some tell us of the threat of solar flares to our electrical grid system --- possibly causing long-term grid power outages. Summer droughts causing low flow in rivers have already caused reactor shut-downs in our southeast states, as well as in France and other European countries. Flooding in the U.S. midwest caused great anxiety in the summer of 2011 at Nebraska's Cooper and Ft. Calhoun reactor sites --- and may have caused permanent damage at both reactors.

Last year's tornado season was severe in the mid-south and mid-west U.S. and also caused damage at reactor sites. (0323-4 [Birnie, Patricia T.]

**Comment:** The comment that was just made about the subduction zones and processes like vitrification and geological repositories that -- that doesn't sound very CO2 neutral to me. And we [citizens] -- I feel that we really need to know what the NRC and its affiliated agencies intend to do with this waste, and whether that notion of CO2 neutral is factored into the back end of the fuel cycle. (0005-17-1 [Laramée, Eve])

**Comment:** Building and fueling nuclear reactors generates so much CO2 that I wonder how much CO2 is saved by building more nuclear reactors. The DEIS should state how much CO2 is saved by building more nuclear reactors. (0053-4 [Unger, Art])

## 5. Comments Concerning Hydrology

**Comment:** The impact of radioactive pollution of water can be catastrophic. Surface water and deep aquifer resources have been contaminated at sites throughout the United States. These plumes of contamination travel quickly, and there's no method to clean up aquifers. Water is a precious resource that sustains life. We need to ensure that these resources will sustain life for many generations to come. Internal exposures of radioactive materials are even more hazardous than external exposures, and these particles lodge in our structures, our organs, the tissues of our bodies, our lungs, our stomachs, our kidneys, our bladders. Contaminated water is not only consumed by human beings, the fish swim in it, and it's used for livestock, to irrigate food crops. Municipal water systems are currently not constructed to filter out radionuclides in their purification process. So as a concerned citizen, I ask that you carefully consider the wisdom of your action and decisions. Be honest in the language that you use, honorable about the methods for distributing information. We need to be more fairly included in this process. (0005-11-4 [Star, Priscilla])

**Comment:** Surface water and deep aquifer reef sources have been contaminated at various sites throughout the United States, and these plumes of contamination can travel quickly. And as far as I am aware, there's no method to clean up aquifers. (0005-17-4 [Laramée, Eve])

**Comment:** The impact of radioactive pollution of water can be catastrophic. Surface water and deep aquifer resources have been contaminated at sites throughout the United States. These plumes of contamination travel quickly, and there is no method to clean up aquifers. Water is our precious resource that sustains life. We need to insure that these resources will sustain life for many generations to come. Internal exposures of radioactive materials are even more hazardous than external exposures. These particles lodge in the delicate structures, organs and tissues of our bodies - lungs, stomachs, kidneys, and bladders. And contaminated water is not only consumed by human beings, fish swim in it, it is used for livestock, and to irrigate food crops. Municipal water systems are currently not constructed to filter radionuclides in their purification apparatus. (0049-7 [Laramée, Eve])

**Comment:** Nuclear waste must be stored in a manner that does not contaminate the water or ground in anyway. The environment must be protected. (0110-2 [Johnson, Alaina])

**Comment:** Nuclear waste is terrible for the environment. It puts toxic chemicals in the water. (0113-2 [Anonymous])



**Comment:** Protect our water supply and local communities from Nuclear waste. (0135-2 [Renn, Melissa])

## 6. Comments Concerning Aquatic Ecology

**Comment:** NRC must fully assess all... measures to mitigate impacts to aquatic ecologies in adjacent affected waterways. (0286-118 [Curran, Diane])

**Comment:** The EIS must include bounding estimates for...the worst case damage to riverine ecosystems, such as the Great Lakes, the Mississippi River or the Columbia River. (0286-53 [Curran, Diane])

**Comment:** The EIS must include bounding estimates for... ecosystem damage to each unique ecosystem, including the Chesapeake Bay, the Monterey Trench, the Mississippi River Delta, the Columbia River... (0286-55 [Curran, Diane])

## 7. Comments Concerning Transportation of Spent Nuclear Fuel

**Comment:** Evaluating the transportation of used nuclear fuel should be beyond the scope of this EIS. The environment impacts of transportation will be appropriately addressed in future EISs should a consolidated storage repository be constructed. (0004-8-5 [Burton, Bruce])

**Comment:** - Case study for transportation need - SNFs stored in the shut down or decommissioned reactor sites will be moved to consolidated storage facility as soon as available.(0096-3 [Wiley, JiYoung])

**Comment:** So, yes, the no repository scenario. I would say that something that should be looked at, in terms of there not being a repository until 2050 or 2100, is the transportation time that would be required to move the waste to even centralized interim storage or a repository, under the Department of Energy's Yucca Mountain proposal, a time period of 24 years to 48 years, if I'm remembering correctly from ten years ago. Twenty-four to 48 years just to transport the first 63,000 tons of irradiated nuclear fuel from commercial facilities out to Yucca. So that long time delay, to get the waste off-site. (0118-9-1 [Kamps, Kevin])

**Comment:** I think since you're doing this scoping program for the waste confidence rule, you really might want to look at the transportation issue that's already taking place across the United States. And I agree with the comments made earlier. Any exposure to radioactivity -- no matter how slight -- boosts your risk of cancer. And that's according to the National Academy of Sciences. So we know that the radioactivity is dangerous -- very dangerous. The nuclear waste shipments cannot be made safe. And the NRC, I'm sure, is aware of this. (0119-9-1 [Kerr, Julius])

**Comment:** [T]he EIS must factor in that: (b) once a [repository] site is found, transportation of waste to it will take decades. (0148-33 [Lampert, Mary])

**Comment:** Transportation of used fuel packages of various sizes should be included in the proposed EIS. Also, transportation to a repository or central storage location at varying times into the future should be considered. Total vehicle miles for each scenario (or combination of scenarios) should be calculated and compared. The comparison should include direct shipment to a repository. Yucca Mountain analyses already performed should be used to the fullest extent practical. (0244-11 [Lacey, L. Darrell])

**Comment:** Lastly, the environmental impacts of transportation from a nuclear plant to a permanent repository are also beyond the scope of this EIS. Those impacts are more appropriately addressed in a separate EIS for the repository itself. Here, there is also no need to assess the impacts of transportation to a repository since the EIS will address the failure to establish a permanent repository. (0263-18 [Ginsberg, Ellen])

**Comment:** What would be the advantages and disadvantages of extended storage on the transportation of spent fuel to and from an interim storage site, to and from a repository, and regarding design of the transportation packages? (0265-12 [Halstead, Robert])

**Comment:** The EIS should consider the full range of spent fuel transportation impacts addressed in the NRC licensing proceeding for Yucca Mountain and the associated NEPA documents. (0265-16 [Halstead, Robert])

**Comment:** The EIS for the Long-Term Storage Waste Confidence Update should evaluate the same radiological transportation impacts considered in the Yucca Mountain licensing process. NRC staff reviewed and adopted the DOE Supplemental Environmental Impact Statement (SEIS), including the transportation impact calculations for the mostly rail transportation scenario. (0265-17 [Halstead, Robert])

**Comment:** The Waste Confidence EIS should consider future developments in the transportation environment which could affect the safety and security of spent fuel shipments. (0265-18 [Halstead, Robert])

**Comment:** The Waste Confidence EIS should evaluate the full range of radiological and non-radiological transportation impacts likely to be addressed in any future NRC licensing proceeding for interim storage or geologic disposal facilities. (0265-26 [Halstead, Robert])

**Comment:** NRC should exclude off-site "interim" consolidation of waste storage because the transport evaluations done to date are not an adequate basis upon which to claim an increase in health, safety or security. The period of transport (likely decades) must itself be included in the overall evaluation of increased health, safety or security, where clearly it will not support such a claim. (0266-3 [Anonymous] [Fisher, Allison] [Gale, Maradel] [Lish, Christopher] [Mariotte, Michael] [Sheridan, Paul])

**Comment:** Evaluating the transportation of used nuclear fuel should be beyond the scope of this EIS. The environmental impacts of transportation will be appropriately addressed in future EISs should a consolidated storage repository be constructed. (0267-4 [Hill, Edwin])

**Comment:** What are the advantages and disadvantages of extended storage on the transportation of SNF to and from an interim storage site, to and from a repository, and regarding design of the transportation packages? (0271-14 [Fettus, Geoffrey])

**Comment:** And turning briefly to transportation and potential interim storage sites (as opposed to on-site storage at existing commercial facilities), there is an extraordinary amount of work to be done - as evidenced by the Yucca Mountain history and the BRC process - to properly analyze and support transport evaluations over such long periods of time. Periods of potential transport (over a course of decades) of SNF must be analyzed and incorporated into the overall evaluation of preferred alternatives. (0271-16 [Fettus, Geoffrey])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: the need for periodic updates as new and significant information is developed regarding the risks of long-term SNF storage, repackaging of SNF for transportation where not already packaged in transportable casks and transportation. (0272-11 [Weisenmiller, Robert B.]

**Comment:** The NRC's EIS should provide a detailed analysis of how many decades of delay can aggravate the difficulty of getting used fuel from the location and type of storage where the federal government accepts it, into acceptably safe emplacement in a repository whose location, geological characteristics, and engineering design are not yet identified. (0278-2 [North, D Warner])

**Comment:** The EIS should analyze, in depth, the impacts of transporting and handling spent fuel, and of storing it at repository sites. Spent fuel that has been stored onsite or at an offsite location for prolonged periods is subject to degradation, some of which could be severe enough to breach both the cladding and the canister. Transfer to transportation casks could therefore pose risks that have not yet been encountered in practice. Similarly the impacts of transfer to disposal containers, storage at the repository location, and handling during placement of degraded spent fuel need to be evaluated. Likewise, the consequences of transportation accidents that involved degraded fuel or canisters could be significantly higher than indicated by present understanding of accidents with intact fuel and canisters. Again, this will require significant additional research. (0286-20 [Curran, Diane])

**Comment:** The EIS should analyze, in depth, the impacts of transporting and handling spent fuel, and of storing it at repository sites. Spent fuel that has been stored onsite or at an offsite location for prolonged periods is subject to degradation, some of which could be severe enough to breach both the cladding and the canister. Transfer of such spent fuel to transportation casks could therefore pose risks that have not yet been encountered in practice. Similarly the impacts of transfer to disposal containers, storage at the repository location, and handling during placement of degraded spent fuel need to be evaluated. Likewise, the consequences of transportation accidents that involved degraded high burnup fuel or degraded canisters could be significantly higher than indicated by present understanding of accidents with intact fuel and canisters. (0286-71 [Curran, Diane])

**Comment:** ...degradation of high burnup spent fuel stored for prolonged periods (several decades to a few hundred years) needs to be taken into account during transportation. (0286-72 [Curran, Diane])

**Comment:** The public has the right to know transportation details. The EIS should include a map showing nuclear power plants and their spent fuel storage destination across the US. (0274-8 [Sorensen, Laura])

**Comment:** The EIS Report must consider the significant increases in the volume of waste transportation activities that will occur from the multiple on-site storage locations that are currently in use. Consideration must be given to the impact this increase will have on the highway systems (new construction, maintenance and repair) and the impact the increase will have on the resources of State and local governments that will be charged with the transportation safety, radiological safety, and transportation emergency preparedness and response. The impact on State and local government limited resources will be significant. (0294-4 [Bevill, Bernard])

## 8. Comments Concerning Nonradiological Health

**Comment:** Please help make it safe for neighbors of Calvert Cliffs Nuclear power plant and the other nuclear power plants around our Nation. (0058-5 [Dubois, Gwen L])

**Comment:** The health and safety of our communities should ALWAYS come first! (0143-1 [Hazynski, Chris])

**Comment:** Public health and the survival of our planet must be your first concerns. (0240-1 [Cooper, Susan])

## 9. Comments Concerning Radiological Health

**Comment:** When addressing radiation exposure, we expose that the maximally -- we urge that the maximally exposed individual and the average member of the critical group and any other reference body be assumed to be a female between the ages of zero and five years. It is past the time for the regulator to assume it can use its current flawed standards based on the average man as the basis of an environmental impact assessment. We know where the greatest impact will occur and it is not valid to assume a fiction that a little girl is protected. As a species, we will only survive if we based our conclusions and therefore social selection on the least radiation-resistant links in our life cycle. (0004-13-9 [French, Dominique])

**Comment:** But one answer I want to give you that we're going to really be looking at is whether you look at actual environmental significance or whether you're going to perpetrate the fiction that NRC regulations are based on zero impact. That's simply not true. NRC regulations are based on a risk assessment that assigns a level of 3.5 fatal cancers per 1,000 reference men exposed over their lifetimes to 100 millirems, and then you do a linear extension of that graph to get any other possible risk levels, and what was known from BEIR VII is that little girls are many times more vulnerable than that reference man. Now, we can all argue about how many times more because the BEIR data is highly limited and the Chernobyl data and the Fukushima data are going to tell us different things, but it's at least seven times. So, we really want, us grandmothers, to see you do a credible analysis of all of the environmental impacts of these issues that have been raised. (0004-16-1 [Olson, Mary])

**Comment:** Around the same time, in another SECY document, SECY 11 -- excuse me, SECY-11-0089, there was a statement consideration of other site radiological sources to be complete estimation of total site accident risk should also include an assessment of the risk from accidents involving other site radiological sources to include spent nuclear fuel. And so we think there is actually a basis in fact for these states' request here. (0004-5-1 [Sipos, John])

**Comment:** And the cost [of spent nuclear fuel] is increasing exponentially, not only economically in dollar signs, but also the health of the people is being affected. And it isn't just cancer, it's heart disease, A, blood disorders, immune deficiencies. All of these diseases that are on the increase are due to this radiation, these particles that are coming out of this spent fuel. (0005-16-1 [Strickland, Christine])

**Comment:** And whatever internal exposures people and other animals have from consuming water that has radiotoxins in it, that's even more hazardous than the external exposures, and that those particles can lodge in the kidneys, and the stomach, and lungs, and bladders, creating disease clusters. Municipal water systems to my knowledge are currently not

constructed and set up for that kind of purification apparatus, or if they are, it's not on a widespread basis. (0005-17-5 [Laramée, Eve])

**Comment:** I would also like to see included in a draft statement, which deals with the question of how serious is the threat from low doses of ionizing radiation, and what I will include in my written comments is a quotation from a paper that comes from the lifespan study on the survivors of the atomic bombings in Japan, which are a dataset that's considered the most reliable and most significant one that we have and will probably ever have. And in the most recent paper from that study, which was published in 2007, the statement is made that an analysis of cancer incidence data up to the time that -- the cutoff date for that study, statistical analysis of those data showed that there may be a threshold for cancer incidence at 40 millisieverts. If that happens to be confirmed, and right now it's a very tentative conclusion -- but if it happens to be confirmed, it would mean that the health harm from Chernobyl, for instance, is going to be far less than anyone's estimate. So what I would like the staff to do, since there are going to be a couple of years before this environmental impact statement gets finalized, is to keep track of the papers coming out of Radiation Effects Research Foundation and look for the next study on cancer incidence, solid cancer incidence, because that will either continue to support this 40-milligrays threshold or will not support it, but it's very important that, that attention be paid to those studies. (0005-2-4 [Meadow, Norman])

**Comment:** Let me just say finally that I think it's indicative of the misunderstanding about safety and the word, "ionizing radiation" -- or two words - "ionizing radiation" is that if you look at the Yucca Mountain environmental impact statement, there was a lot of mention made this afternoon about a million-year ruling on exposure. Figure 5-4 in that study shows that the exposure to the maximally exposed individual 400,000 years from now will be about -- at about 30 percent to the natural background radiation in that region of the country, and that increase in dose is entirely insignificant. And what makes it seem even worse is that we are determining today's energy policy on an event that's forecast to occur not until a period of twice as long as humanity has existed. And even if you go to the 95 percent confidence limit on that dose, it does not even double background for the region that Yucca Mountain exists in. And I think it's very important that, that graph and those conclusions are very, very infrequently mentioned. In fact, I didn't come across them till I began to look through the environmental impact statement for Yucca Mountain. And not disseminating that information I think is really treating the issue very superficially. (0005-2-5 [Meadow, Norman])

**Comment:** I am very concerned about the temporary storage of radioactive waste because of the horrible damage it causes to the environment, humans and sentient beings. For the sake of ourselves and future generations we need to address this issue. (0071-1 [Bartholomew, Alice])

**Comment:** Every NPP and nuclear WMD looses radiation. Every nuclear facility releases radiation. The entire fuel cycle of WMD and NPPs release radiation. (0075-4 [Lewis, Marvin])

**Comment:** Uranium is different from all other minerals extracted from the earth, in a number of ways. Together with its byproducts (such as plutonium) and its end products (many kinds of radioactive waste) uranium is a health hazard: not only for those who work in the industry, but for all the inhabitants of this planet and for all future generations. (0090-2 [Kerr, Beverly])

**Comment:** Radiation in nature is called the background level. But radiation from any source is harmful. Even if radiation from human activity is below the background level, it is still harmful. (0090-3 [Kerr, Beverly])

**Comment:** But please, don't look at compliance. Look at impact. And one of the key impacts that nobody's looking at is the disproportionate effects of radiation. Maybe it's an appendix. Maybe it's we don't know the causation but there's evidence. Maybe it's I don't know what. But if it's silent, oh, my God, oh, my God. We know children are impacted many times more. We now have strong data showing that little girl children are twice as impacted as little boy children. We know that elders are more impacted. That disproportionate impact is a reality whether your regulations reflect it or not. But you are not doing compliance here. You are doing impact here. (0119-5-2 [Olson, Mary])

**Comment:** And they need to generate more regulations. If they are monitoring the waste casks, they'll know because there's going to be gamma radiation emitted from these things. And it's going to allow a certain amount of neutrons to be emitted from the shipping casks during routine operations and transportation. Even without a transport accident -- I know we've been doing it for over 30 years; the gentleman spoke about that earlier -- the people are exposed to this ionizing radiation from the nuclear waste shipments. So whoever made the nuclear waste should keep the nuclear waste right where it's at and not expose the public by transporting from here to there. There's no reason for that. The casks radiate radiation, and they're very, very dangerous. And I know you guys know that because you say you're monitoring it. And I hope you'll make some stronger regulations that are really going to protect the public. (0119-9-2 [Kerr, Julius])

**Comment:** The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0121-2 [Howard, Gloria J])

**Comment:** The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0145-2 [Slezak-Fritz, Joan])

**Comment:** We cannot endanger our citizens. (0169-1 [Wilvert, Rosemary])

**Comment:** Please help protect us from Nuclear Waste (spent rods - Garbage) and the cancers it can cause. (0176-1 [Howard, Gordon])

**Comment:** [There is also significant danger in...] those accidents which may affect workers in contact with the waste. (0196-2 [De Falla, Susanna])

**Comment:** Hope somehow you can keep us safe from the spent fuel radiation. (0199-1 [Poulson, Judi])

**Comment:** Radioactivity leaks from storage pools - into soil, groundwater, and surface waters - should also be included in the EIS scope. (0215-5 [Savett, Adam])

**Comment:** The amount of radiation has increased immensely which is loosed upon the United States. The amount of radiation is comparable to radiation at the advent in the history of the Earth when radiation was so great as to endanger the evolution of life. I respectfully request as follows: the danger of radioactive wastes has reached the point to endanger beneficial evolution. Ending beneficial evolution on this Earth could make the human race into an endangered species. I respectfully urge the NRC to investigate the danger posed by adding the

amounts of radiation in radwastes to the biosphere. This investigation would meet the requirements of the Endangered Species Act. (0217-2 [Lewis, Marvin])

**Comment:** Of course, the EIS should include a discussion of the dose received from workers and nearby public from long term storage. Include dose assessments to workers and the public within the scope of the EIS. (0246-7 [Kohler, Joseph])

**Comment:** The uniquely unsustainable characteristics of nuclear energy must be included in this analysis: the potential for severe and irreparable harm to human health and the environment, including the loss of vast areas of land, as well as the need for proper management and isolation of nuclear waste for hundreds of thousands of years from future generations. (0269-17 [Warren, Barbara])

**Comment:** We [members of the Women's International League for Peace and Freedom] find the routine and accidental exposure to radiation for the purpose of generating electricity to be unacceptable and believe it is imperative for the NRC to stop its condoned exposure of nuclear workers, other human beings and living creatures, and the environment as soon as possible. (0277-1 [Roskos, Laura])

**Comment:** Where radiological risk is assessed in this process, NRC should disclose the dose-response assumptions used to report impact/risk levels. If the NRC risk-evaluation disclosed in a 1990 Federal Register notice of the "Expanded Below Regulatory Concern Policy" that assessed a 100 millirem annual exposure over 70 years lifetime to result in 3.5 fatal cancers per 1000 people (should have read "adult males" exposed) is used, that should be disclosed; if some other dose-response assessment is used, that should be disclosed. If it is different than the 1990 evaluation, there should be a discussion offered as to why a different basis of risk assessment is used. (0285-1 [D'Arrigo, Diane])

**Comment:** In evaluation of the radiological impact to the public of moving highly radioactive spent fuel to central storage, the "dose receptor" must be assumed to be female aged 0--5. In case NRC staff have forgotten their evolutionary biology, there is no individual who is born who did not come as progeny of a female who was once 0--5. This is not a "special case," this IS the "average human" and in terms of the future of our species, it is every human. (0285-11 [D'Arrigo, Diane])

**Comment:** In order to provide a more accurate evaluation of health impact, NRC should assume that the most vulnerable part of our species is the one getting the dose: specifically, the female between age zero and 5 years old. It would be appropriate perhaps to provide a table of risk assessment comparing ages and genders and possibly multiple evaluations of radiological harm (for instance NRC, BEIR VII, ECRR and Gofman's reanalysis of the Hiroshima/Nagasaki data). In this way, NRC could provide a range of information for decision and policy makers that on the one hand displays the range of variation of assessment, and on the other discloses the degree to which radiation risk assessment has under-reported the true impacts to human health via radioactivity since in general, only the adult male is factored. (0285-2 [D'Arrigo, Diane])

**Comment:** We expect to see the statement of IMPACT, not assertion of compliance with NRC regulations. This is particularly important in the case of evaluation of radiological releases, leaks, and any other type of uncontained radioactivity and the health (disease) consequences of radiation exposure. NRC regulations do not provide a "zero risk" basis to the public; therefore compliance is not an accurate statement of no impact. (0285-20 [D'Arrigo, Diane])

**Comment:** The evaluation must include radiation doses to workers, the onsite and offsite environmental impacts during the period of preparation, as well as the post-closure environmental impacts up to and including the time of peak radiation dose. Id., ¶ 7.5. The EIS must also explore all reasonable combinations of geology, engineered barriers, sealing systems, and disposal casks to predict bounding doses. (0286-17 [Curran, Diane])

**Comment:** The EIS should consider the radiological risk posed by storage of spent nuclear fuel from the moment of its discharge from a reactor. (0286-22 [Curran, Diane])

**Comment:** Assessment of radiological risk should be a major function of the proposed EIS, this category of risk being defined as the potential for harm to humans as a result of unplanned exposure to ionizing radiation. (0286-23 [Curran, Diane])

**Comment:** The comparative radiological risk posed by a range of alternative options for storing spent nuclear fuel or high level radioactive waste should be assessed in the proposed EIS as a major indicator of the comparative impacts of these alternatives. (0286-25 [Curran, Diane])

**Comment:** For each scenario that includes disposal in a deep geologic repository, the NRC must estimate the radiation doses to workers, the onsite and offsite environmental impacts during the period of operation as well as the post-closure environmental impacts up to and including the time of peak radiation dose. (0286-75 [Curran, Diane])

**Comment:** The proposed EIS should consider the radiological risk posed by storage of SNF from the moment of its discharge from a reactor. (0286-95 [Curran, Diane])

**Comment:** Assessment of radiological risk should be a major function of the proposed EIS, this category of risk being defined as the potential for harm to humans as a result of unplanned exposure to ionizing radiation. (0286-96 [Curran, Diane])

**Comment:** The proposed EIS should assess the radiological risk arising from a range of conventional accidents. (0286-97 [Curran, Diane])

**Comment:** As a citizen committed to life in this world, I am concerned about the health and safety of my friends and family who live near nuclear power plants, the millions of people who eat food that is irrigated by irradiated water, grown in irradiated soil, and the radioactive particles that are concentrated at the top of the food chain; as well as I am deeply concerned about the health and safety of those in Japan; as well as those who are and continue to be affected by 3Mile Island, and Chernobyl; as well as I am deeply concerned about the genetics and well being of every person and living organism that subsists in this world, as our world is already loaded with cycling radioactive particles, and mining, plants and waste that continue to emit radiation and are at constant risk of accidents. (0287-1 [Anderson, Johanna])

**Comment:** Cumulative Health Impacts to most vulnerable members of the public, including fetuses, young children, women, and the elderly [must be considered in the EIS]. (0296-25 [Shapiro, Susan])

**Comment:** I have been following the nuclear issue from my home in South Carolina for the past three decades. The issue of waste confidence is a paramount concern of mine. Living so close to nuclear power plants with on-site storage is a worry not only for the present, but extending into the future for thousands of years. As a grandmother, this is not the future I would like to



bequeath to my grandchildren. It is our shared responsibility to ensure that deadly waste not be left in a form that could be compromised and radiation exposure risked. (0336-1 [Warshauer, Meira])

**Comment:** I would like to see really strong, solid data released to the public about the amount of radiation that are in these irradiated fuel rods that are too radioactive to use anymore and must be removed from the reactors. And the details, specific inventories of the toxic and radioactive substances inside of these, how long they're going to last, how long they're going to be a hazard to the communities that are hosting these things. And as part of the Environmental Impact Statement, also, there needs to be a thorough discussion of the biological pathways that each of these can make through the environment into different life forms, including humans. (0118-3-3 [Safer, Don])

**Comment:** I am concerned about the potential danger of radioactive waste from nuclear power plants. I believe that it is imperative that they provide clear specific information about how such waste will be disposed of in a safe manner. (0138-1 [Goldfarb, Carole])

**Comment:** What would be the advantages and disadvantages of extended storage on worker exposures at the reactor sites, storage facility sites, and at a repository site? (0265-11 [Halstead, Robert])

**Comment:** What would be the advantages and disadvantages of extended storage on public exposures from the transportation, storage, and disposal of such spent fuel? (0265-13 [Halstead, Robert])

**Comment:** What are the advantages and disadvantages of extended storage (of varying kinds) on worker and public exposures at reactor sites, storage facility sites, and at a repository site? (0271-13 [Fettus, Geoffrey])

**Comment:** What would be the advantages and disadvantages of extended storage on public exposures from the transportation, storage, and disposal of such SNF? (0271-15 [Fettus, Geoffrey])

**Comment:** We do know that hundreds of incidents have occurred at sites where radioactive materials were not recognized as waste and got managed like trash, where pallets of waste containers were stacked in unstable configurations, where containers were improperly labeled, where shipping records were never retained, containments were breached, personnel were not properly trained resulting in their own exposure to toxic amounts of radiation. There were failures to perform required radiological screenings or to implement corrective actions. (0005-17-3 [Laramie, Eve])

**Comment:** Risk assessment in the proposed EIS should be supported by a set of indicators that express the dynamic aspects of the potential risk environment across the time period and suite of scenarios considered in the EIS. (0286-26 [Curran, Diane])

**Comment:** Because this is a generic EIS the bounding values, frequencies, rates of occurrence and conditions should be considered as inputs for scenario analyses. EPA recommends considering bounding rates for normal events including periodic repackaging, anticipated occurrences and accidents in worker and public exposure scenarios related to SNF storage after the licensed end of a nuclear plant. (0325-9 [Bromm, Susan E.])

**Comment:** We need to -- you need to consider the requirements of continuous monitoring of planned and unplanned releases into the air and water and standards, and based on the most vulnerable members of our communities and also on the public awareness of what the daily releases are, both planned and unplanned. (0004-25-4 [Shapiro, Susan])

**Comment:** I would ask that the NRC consider when doing its rule making for waste management, especially under the scenario where much of the waste remains at nuclear facilities across the country, that they consider better mandatory reporting. Not just of unusual events, but of common releases and regular monitoring of radioactive releases into the environment. Considering both leakage and general admission from long-term storage on the site, or what will eventually wind up being long-term storage. But also considering that venting, leaks and regular distribution of liquid radioactive waste, is essentially waste that has been, that the plant has chosen not to store. So that part of waste management should consider what is now considered regular venting of radioactive gas and the dumping of contaminated water during refueling. That's essentially waste you're not capturing. Now, I understand that that's part of what the NRC considers normal operation of a plant, but if the state and local communities that are not only responsible for the health and safety of the people around them, were to be notified more rigorously and it were mandated along with a regular notification to the NRC, to be put into the public record, I think that would benefit the surrounding people, not just from a general knowledge standpoint, but because state and local communities provide the logistics that keep these plants running. Not just the first responders but, you know, things such as like road maintenance and garbage pickup. And I think that state and local facilities have to budget for this. And I think this should be part of any general waste management rule, should be a better reporting regime. (0118-22-1 [Levine, Gregg])

**Comment:** The woman from NIRS talked about real-time, online access to monitoring. And I can't second that strongly enough. And if there really is minimal danger to the public, then the amounts of environmental radiation -- so you say monitoring's just something that's classically off gas or strontium levels can be up like one marker element that measure that I can then report on so that people can get a sense of what the sort of daily operation loads are for these sites, what their burden is if they live ten, 20, 30 miles outside one of these sites. I would love to see that. I don't know if that comes under waste confidence or it comes under EIS or it comes under individual site licensing. But I think the NRC needs to find a way to regulatorily require the industry to make this information available. (0119-10-4 [Levine, Gregg])

**Comment:** Water contamination whether it is straight groundwater or contamination of surrounding lakes from which reactors get cooling water, must be minimized. Water contamination should be documented and reported to everybody. (0092-5 [Kukovich, Kenneth M.]

**Comment:** Consideration for the water in wet storage. - Leakage study - will ground water be tested for any indication of leakage from storage pool at any site? (0096-4 [Wiley, JiYoung])

**Comment:** In my research I found that 48 of the nuclear power plants have radioactive tritium leaks. And this seems to be an issue that follows these power plants. And I think that that's something that the NRC should look into and create some kind of public awareness for the people that live around the plants. We happen to live very close to a nuclear power plant and we weren't aware of the tritium leaks until here just recently. And it sounds like to me that this has been going on for quite some time. So, I would be very appreciative if you all would mention that and move it to the top of the list to help us protect the public. And as the NRC's mission

statement reads, they are supposed to protect the public and the environment. Thank you for allowing me to speak. (0118-10-1 [Kerr, Julius])

**Comment:** NRC must fully analyze... measures to increase public access to information concerning future SFP leaks and groundwater contamination that occurs as a result. (0286-119 [Curran, Diane])

**Comment:** Site Specific Cumulative Impacts of self-monitoring by reactor operators of planned and unplanned off-site releases. A comprehensive evaluation, including capture species studies, and continuous, independent radiological monitoring of releases of radiological products into the environment must be conducted for at a minimum 1-2 years, to determine the adequacy of self-monitoring and reporting by reactor operators. (0296-15 [Shapiro, Susan])

**Comment:** There's so many examples to point to. We just took a tour of the dumping ground for Enrico Fermi's waste, a couple days ago at Redgate Woods, 25 miles from downtown Chicago, where those Manhattan Projects and just after that a media dumping ground for those reactor wastes located. It's now a park in the Cook County Forest Reserve System. And there's instances, you know, in just a 70 year period of time, the only institutional control that's out there is a couple of stone markers which have been vandalized. They are actually eroding under the elements. Picnic areas out there, drinking water pumps were significantly, radioactively contaminated, even to the point of them needing to be padlocked so that people couldn't use them anymore. Surface waters are badly contaminated and there were no water samples being taken by the Department of Energy for the first 25 years. (0118-17-8 [Kamps, Kevin])

**Comment:** From experience with the nearby Sequoyah Fuels facility, I can relate that no thought was ever given to decommissioning a working refining facility and at the end of the facility's rocky working life, decisionmakers turned to each other and just threw up their hands in bewilderment about how to effectively and concisely decommission the plant. On a tour, there were drums of radioactive material sitting on the ground and on pallets outside the facility in the open air. I personally have known several former area residents who succumbed to cancer likely attributable to the facility's lax operation and schleppey decommissioning. (0297-3 [Tibbits, Kathy])

## 10. Comments Concerning Safety

**Comment:** For all others [reactor designs], impact and loss of vessel integrity and likely scenarios for management, fuel pool criticality issues, drain down spires and other leakage versus dry storage, data on the performance of various models of dry storage containers since we now have several decades of data to inform future choices, on hardened dry storage versus various scenarios for hardening. (0004-13-12 [French, Dominique])

**Comment:** And secondly, there's a technical set of – there's a certain amount of technical knowledge that you don't have that's specified in one of your own documents whose name I don't remember but I'll provide it to you in my written comments, where a lot of technical work about casks, about the durability of casks, about corrosion, about inter-cask transfer, about, you know, how you're going to maintain the spent fuel pools for a couple of hundred years. All of those issues need physical laboratory technical work to be done before you can evaluate those environmental impacts. (0004-6-7 [Makhijani, Arjun])

**Comment:** The dry casks currently used, I'll just focus on a couple models that I'm most familiar with. The ventilated storage casks, the VSC-24s, at places like Palisades in Michigan, Point Beach in Wisconsin, Arkansas Nuclear One, have little to no quality assurance upon them. And, in fact, those casks are so badly designed and fabricated that they are no longer ordered. They are fully deployed at those reactors I've mentioned. They are fully loaded and sitting on the shorelines of Lake Michigan, for example, in Michigan and Wisconsin. But they have not been ordered in 15 years in this country for good reason, because they are shoddy. So those very casks showed the dangers of such things as explosions at Point Beach in May 1996 as it was being loaded, due to hydrogen gas generation, which was then ignited by the welding torch. That's how badly designed and manufactured those casks are. (0005-5-14 [Kamps, Kevin])

**Comment:** Another cask that is widely used in the United States is the Holtec cask family, used, according to Holtec's own website, at 33 different reactors in the United States. And whistleblowers both from industry, namely, Oscar Shirani from Exelon, Commonwealth Edison, and even from NRC, itself, namely, Dr. Ross Landsman, the now-retired dry cask storage inspector for Region III in the Midwest, questioned -- seriously questioned the design and manufacture of the Holtecs, which are currently deployed across the United States. They are also --by the way, it's not within the scope of onsite storage, but they are also certified by NRC for transportation. But both of those gentlemen, both of those whistle blowers question the structural integrity of the Holtecs not going 60 miles per hour on the roads or rails, but sitting still at zero miles per hour at reactor sites. So certainly the quality of the casks is very much appropriately within the scope of this proceeding. It has to do with the safety and the security of dry cask storage. (0005-5-15 [Kamps, Kevin])

**Comment:** And I'd like to move on to another form of leakage, and that is leakage from dry cask storage, which fortunately so far has not involved radioactive particle leakage into the environment, but I think there are some worrisome indications that that may not be too far off into the distant future. Specifically at the Surry Nuclear Power Plant in Virginia there have been leaks from internal seals, so multiple seals have actually failed, fortunately not all the way through to the outside air, but I think, again, that's a matter of time. And so eventually dry casks themselves, which are after all only made from materials like steel, and then radiation shielding made of concrete in some instances, these materials are going to fail over time. After all, they are out in the open elements. They are exposed to the rain, to freeze and thaw cycles, and such. And so the eventual degradation and failure of dry casks should also be in scope for this environmental impact statement. And I would like to point to a document that I hope that NRC will give ample time to, that is a General Accounting Office report from September 2009, if I'm not mistaken, which looked at that very question of degradation of dry casks and actually made the assumption -- I may have to turn my computer off here, I'm getting feedback - that actually made the assumption that casks would have to be replaced about once a generation. I don't remember the exact time figure used. So that should also be in the scoping of this environmental impact statement, that dry casks will eventually fail and need to be replaced. (0005-5-6 [Kamps, Kevin])

**Comment:** The NRC must resolve many technical issues including long-term waste integrity, vulnerability and deterioration. (0055-7 [Enebo, Karin])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. (0062-10 [Jessler, Darynne])

**Comment:** Lack of quality assurance on design and fabrication of dry casks, as revealed by industry and even NRC whistleblowers, calls into question the structural integrity of dry casks currently used for on-site storage. (0062-11 [Jessler, Darynne])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. (0063-6 [Matsuda, Thomas])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. Lack of quality assurance on design and fabrication of dry casks, as revealed by industry and even NRC whistleblowers, calls into question the structural integrity of dry casks currently used for on-site storage. (0067-4 [Kammerer, Greg])

**Comment:** Lack of quality assurance on design and fabrication of dry casks, as revealed by industry and even NRC whistleblowers, calls into question the structural integrity of dry casks currently used for on-site storage. (0068-10 [Sheridan, Paul])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. (0068-9 [Sheridan, Paul])

**Comment:** All current dry on site storage needs to be reviewed and improved to higher standards or security and corrosion and leak prevention. (0069-8 [MacWaters, Chris])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. (0071-7 [Bartholomew, Alice])

**Comment:** Risks of dry cask storage must also be considered. Lack of quality assurance of dry casks, as revealed industry and even NRC whistleblowers, calls into question the structural integrity of dry casks. (0072-10 [Shuput, Steve])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. (0074-3 [Derbigny, Rodney])

**Comment:** Also the EIS must consider the risks of current dry cask storage. (0080-7 [Cochran, Moncrieff] [Maurer, William])

**Comment:** Lack of quality assurance on design and fabrication of dry casks, casts doubt on the the structural integrity of current dry casks, most of which are stored outdoors in plain sight, and are not designed to withstand terrorism and earthquakes, and have had many accidents. (0080-8 [Cochran, Moncrieff] [Maurer, William])

**Comment:** Also the EIS must consider the risks of current dry cask storage. (0093-7 [Nichols, John])

**Comment:** Lack of quality assurance on design and fabrication of dry casks, casts doubt on the the structural integrity of current dry casks, most of which are stored outdoors in plain sight, and are not designed to withstand terrorism and earthquakes, and have suffered accidents. (0093-8 [Nichols, John])

**Comment:** Another response for the 50 or 100 years of on-site storage into the future would be, again, degradation of the dry-casks. And I wanted to specify some examples of degradation that

have already occurred. Like at the Surry Nuclear Power Plant, which is the oldest commercial dry-cask storage in the country. There have been instances of the leakage of the inerting gas due to failure of inner seals and supposedly, not all levels of seals have failed. So if that were to occur, though, and it will eventually, over time, as these inner seals and other structures on the dry-casks fail with corrosion and age-related degradation. If you lose that inerting gas, like helium which is a heat transfer mechanism, but it's also a protection for the fuel cladding against oxidation. Because once the inerting gas goes out of the cask, then air will flow in and you'll have oxidation. And so the risks of the age-related degradation, the corrosion, the oxidation of the fuel, itself, once the structures begin to fail, for all future handling and storage, on-site and away from reactor. So that needs to be considered. And we already have instances of that. And I did mention the design and manufacturing flaws on casks, like at Palisades, where you have defective welds to begin with. And, again, supposedly no leakage of radioactive gases or particles into the environment yet, but certainly those defects are contributing factors to the eventual failure of the cask to contain the high level radioactive wastes. And that's going to worsen over time. (0118-17-2 [Kamps, Kevin])

**Comment:** And, moving on to another cask design, the Holtec casks, major quality assurance violations identified by an industry whistle-blower from Commonwealth Edison/Exelon Oscar Sharani, and supported by Dr. Landsman, the NRC dry-cask storage Inspector. Major violations of QA having to do with design and fabrications of the dry-casks, having to do with improper welding, brittleness introduced into the casks, and calling in to question the structural integrity of the Holtec dry-cask storage technology. And I'll follow this up in writing with a summary of Oscar Sharani's QA allegations as well as Dr. Landsman's support for those allegations. So that will be on the record. Concerns with the pads that the dry-casks are located on. Again, for example, at Dresden in the Exelon fleet, violations of NRC Regulations that were simply granted a waiver. (0118-2-7 [Kamps, Kevin])

**Comment:** I would like to focus my comments on quality assurance or lack thereof on dry-cask storage, and ask that that be a major consideration in the scope of the EIS. So I would like to put forth the experience that I'm familiar with, with lack of quality assurance on dry-cask storage in this country, so that you're clear on what I'm talking about. One, would the dry-cask storage system, known as the ventilated storage casks or VSC-24s that are deployed and fully loaded with high level radioactive waste at three nuclear power plants in this country, Palisades and Point Beach on the Lake Michigan shorelines, which are the drinking water supply for 40 million people downstream. As well as at Arkansas Nuclear 1. And the quality assurance problems are so severe with these that they are no longer ordered by any Utilities for use in this country. And that's been the case for over a decade. It involves such things as the potential and they actual incident at Point Beach, of an explosion due to a buildup of hydrogen gas during the loading of these dry-casks. So since they're not being loaded anymore, I guess that may not be a problem with this particular model, but I am concerned that it might be a problem with other cask models. But there were other quality assurance problems with the VSC-24s, including improper welding. And even loss of, yes, loss of the design documents for these casks. (0118-2-8 [Kamps, Kevin])

**Comment:** And so risks, under such a scenario, would include the risk of a nuclear chain reaction on the bottom of Lake Michigan. And it sounds farfetched to some people, but I would point NRC back to a technical meeting it itself hosted several years ago with Energy Solutions, the current holder of the license, VSC-24s, where NRC staff had 65 requests for additional information about that very subject matter. Of water infiltration into a VSC-24 cask. And as Don Safer mentioned, the possibility that not only due to age-related degradation, but even to the accident scenario itself, the fuel finding itself in a critical mass in the presence of water as a neutron moderator causing a chain reaction in Lake Michigan, which would make emergency

response very dangerous, if not a suicide mission with the neutron flow and the gamma radiation coming off of that. And even the possibility that the radiation shielding would have been breached, due to age-related degradation or the impacts of the accident itself. And it's not just that one site, this is just an example. (0118-9-3 [Kamps, Kevin])

**Comment:** Include in Scope QA Problems Casks, Industry Experience Failures, and Seismic Risks: Industry and NRC whistleblowers identified major quality assurance violations with current U.S. dry cask storage design and fabrication. These QA violations must be corrected for dry cask storage systems before they can be considered for use in Hardened On-Site Storage. (0148-29 [Lampert, Mary])

**Comment:** Hopefully these casts would be similar in size to a large shipping container so that existing material handling equipment could be used to load, unload and or move them about without "inventing" a mega hauler vehicle. By keeping the "footprint" of these casks similar to a large 40 foot container, the stacking and or placement of them might also be semi or fully automated which would not only save money but again keep the exact location of any specific cask secret! The monitoring of these casks 24/7/365 could even be done via satellite since these casks are similar in size to rocket launchers which are easily seen from space. (0163-4 [Leichtling, Don])

**Comment:** Both industry and NRC whistleblowers have identified major quality assurance violations with current U.S. dry cask storage design and fabrication. (0189-4 [Valtri Burgess, Vivian])

**Comment:** The risks of current dry cask storage must also be considered in this EIS. (0207-2 [Harris, Deborah W.])

**Comment:** Dry casks must be designed and fabricated well, with full quality assurance. They must be designed to withstand terrorist attack (as by camouflage, fortifications, and adequate spacing in between casks), to safeguard against accidents, and to prevent radioactivity leakage into the environment for the decades or centuries the wastes will be stuck at the reactor sites. (0215-4 [Savett, Adam])

**Comment:** The EIS must consider the risks of current dry cask storage. Lack of quality assurance for design and fabrication of dry casks casts doubt on the the structural of current casks, most of which are stored outdoors in plain sight, and are not designed to withstand terrorism and earthquakes. Accidents with dry casks have occurred. (0242-12 [Agnew, David])

**Comment:** Fuel inspection periodicities, criteria, methodologies and corrective actions for problems identified should be included in the scope of the EIS. (0246-6 [Kohler, Joseph])

**Comment:** What would be the advantages and disadvantages of extended storage on the design of a repository waste package, considering a variety of dual purpose canister designs? (0265-10 [Halstead, Robert])

**Comment:** The Waste Confidence EIS should include an evaluation of methods of inspection and monitoring both for canister internal conditions and for dry storage system external structures and support pads. Additionally, the Waste Confidence EIS should consider the implications of monitoring to ensure continued safety in relation to public acceptance of

extended storage at reactor sites and at consolidated storage facilities. (0265-20 [Halstead, Robert])

**Comment:** The NRC waste confidence EIS scope should include in its analyses the spectrum of storage container designs, both horizontal and vertical, and fuel assembly capacities that are now in use, as well as take into account industry trends in this technology, including newly introduced below-grade storage modules. For long-term impact analysis, each likely will have differing degradation, failure, and other changes in protective characteristics, depending on prevailing environmental conditions at the site. (0265-3 [Halstead, Robert])

**Comment:** Monitoring SNF and cladding degradation in canisters. Our understanding is that, once SNF is removed from pools and canistered, the ability to monitor the degradation of SNF and cladding is limited\*meaning that NRC decisions regarding extended storage and transportation are based mainly on professional judgment, not on monitoring data. Without monitoring data, the NRC's basis for decisions to extend ISFSI license terms, or to return SNF to pools for repackaging, or to transport SNF for offsite storage is weak and subject to legitimate challenge\*particularly, perhaps, if high burn-up fuel is involved. (0270-1 [Niles, Ken])

**Comment:** SNF will be managed safely until sufficient repository capacity is available for disposal. It appears (referring to finding #4) that the NRC generally assumes that a still-operating reactor assures that SNF in both wet and dry on-site storage is managed safely\*because the still-operating pool is available to address issues that may arise. However, since the ability to monitor SNF and cladding degradation in sealed canisters is limited, and the hazards in repackaging dual purpose canisters are substantial, and experience in conducting such repackaging is limited, this assumption appears more warranted regarding the current safety of SNF in on-site dry storage than regarding prospective safety. (0270-11 [Niles, Ken])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: degradation of SNF and impacts of aging and high burn-up fuels on cladding/package over time. (0272-6 [Weisenmiller, Robert B.])

**Comment:** Because design and fabrication flaws exist in dry fuel storage casks already installed at reactor sites, the current containers should be repaired if possible, or be replaced to provide safer mid- to long-term storage of the irradiated fuel assemblies. Replacement casks must be designed and built according to stringent design and fabrication quality assurance criteria. (0277-8 [Roskos, Laura])

**Comment:** There are a lot of "unknowns" in dry cask storage, but there can be no doubt it's dangerous and we want as little of it as possible in SoCal!! (0279-1 [Hoffman, Ace])

**Comment:** The EIS should fully consider the technical and safety issues associated with long-term dry storage: cladding deterioration, containment seal and boundary integrity, concrete deterioration, the ability to convincingly demonstrate compliance with transportation safety requirements after extended periods of on-site storage. A more complete development of these and other relevant technical issues is contained in the Nuclear Waste Technical Review Board report, Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel, December 2010. (0280-5 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Weart, Wendell] [Weiner, Ruth] [Winograd, Isaac])



**Comment:** Pyrophoria should be assumed as a persistent condition of commercial reactor fuel, not limited to the first years out of the reactor core. Because a non-oxygen environment is assumed to be a primary means of preventing burning of fuel clad, NRC evaluation should include the potential for leaks in cask seals, both stationary casks, and transport containers. (0285-13 [D'Arrigo, Diane])

**Comment:** Dry cask storage was undertaken without sufficient study and technical evaluation. (0285-7 [D'Arrigo, Diane])

**Comment:** The EIS should analyze, in depth, the environmental impacts of uranium spent fuel degradation. After a total storage period of up to 300 years (i.e. out to the year 2250), there is a far greater likelihood of casks deteriorating to an extent that transfers from one cask to another of much, most, or all of the spent fuel would be required. Transportation accidents involving degraded spent fuel should be evaluated. The impacts on transfer of degraded high burnup spent fuel at the repository site should also be evaluated. (0286-19 [Curran, Diane])

**Comment:** In assessing the potential for radioactive release from stored spent nuclear fuel as a result of a cask fire, the proposed EIS could rely on a body of analytic and empirical information that is not fully published, provided that the NRC has engaged an independent Red Team to determine through representative tests whether a cask fire can be initiated and, if so, what release of radioactive material would be likely to occur. (0286-38 [Curran, Diane])

**Comment:** Quality assurance of design and fabrication of dry casks is necessary to withstand terrorism and, any catastrophic environmental event. These assurances include, but aren't limited to, storage location, hydrogen explosions, and inner seal integrity. (0289-3 [Lambert, Gwen])

**Comment:** The EIS should identify and incorporate the product information from the manufacturers of these storage systems. This information would include, but not be limited to, the warranty of the product, the intended useful life, as well as a history of any leaks, releases, or other issues associated with each individual system. (0291-10 [Harlan, Thomas])

**Comment:** The EIS needs to take into account the structural integrity of the various spent fuel storage systems that are utilized around the country. (0291-9 [Harlan, Thomas])

**Comment:** Integrity of the dry cask approved by the NRC, i.e. the Holtec Casks being used at many plants, approved by the NRC even though they failed multiple peer reviewed safety testing. (0296-36 [Shapiro, Susan])

**Comment:** The design and fabrication of dry cask storage units currently used at some reactors are inadequate. Industry and NRC whistleblowers have reported a lack of quality assurance in some current dry cask storage units, which has revealed seismic damage, hydrogen explosions, inner seal leaks, radioactive gas leaks, design and fabrication flaws, and security deficiencies. The NRC should mandate that only the highest quality of dry cask storage units are to be permitted. (0323-10 [Birnie, Patricia T.])

**Comment:** The spent nuclear fuel (SNF) canister's drying process leaves some moisture remaining inside storage canisters after they are sealed. The high radiation field inside canisters would interact with water vapor producing radiolytic hydrogen. Additional moisture also can preferentially diffuse inside canisters through microcracks due to pressure differentials inside

and outside the canister caused by cooling of the fuel. For these reasons EPA recommends assessing the generation and accumulation of hydrogen inside SNF dry cask storage canisters due to radiolysis. (0325-3 [Bromm, Susan E.]

**Comment:** As SNF cladding and canister welding degrade with time, the canister will gradually depressurize through microcracks and confinement could be compromised. Radioactive materials may begin releasing to the environment at relatively slow rates. Current effluent monitoring programs at controlled site boundaries are typically not sensitive enough to detect such releases at early stages and, furthermore, may not necessarily be assumed to continue after plant decommissioning. We recommend, therefore, evaluating potential releases due to canister and cladding degradation. In assessing the probabilities and impacts of such scenarios, EPA recommends considering best available industry data, current scientific knowledge and well documented trends regarding SNF inventories and material degradation. The behavior of cladding for high-burnup SNF deserves particular attention since the average burnup is likely to increase in the near future. (0325-4 [Bromm, Susan E.]

**Comment:** Both industry and NRC whistleblowers have identified major quality assurance violations with current U.S. dry cask storage design and fabrication. These QA violations must be corrected for dry cask storage systems before they can be considered for use in Hardened On-Site Storage. (0326-12 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** The many problems that have occurred over the years and decades with dry cask storage - from explosions, to leaks, to design and fabrication flaws, as well as security vulnerabilities -- must be included in the EIS scope, and preferred alternatives identified, such as HOSS. (0326-13 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** The NRC must resolve many technical issues including long-term waste integrity, vulnerability and deterioration. (0001-3 [Anonymous] [Butler, Edward] [Evans, Michael W.] [Flowers, Bobbie] [Gilbert, Valerie] [Levey, Laura] [Malina, Matt] [Neiman, Laura] [Puca, Rob] [Richkus, John] [Tignanelli, Doreen] [Valentine, Jennifer] [Varekamp, Patrick])

**Comment:** Also, many spent fuel pools are not hardened against terrorist attacks, and U.S. spent fuel pools are packed far more densely than they were originally intended, and we are very concerned about consequences of that overcrowding. (0004-18-10 [Fuchs, Katherine])

**Comment:** [Need to look at] heat waste impacts of the integrity on aging materials, including cladding, storage systems, and spent fuel. (0004-25-6 [Shapiro, Susan])

**Comment:** I'm calling about the problem of the nuclear waste, the spent fuel confidence -- the confidence in the storage of this waste from the nuclear industry. And our trust is shaken due to the fact of the Fukushima nuclear disaster, A, but, you know, them delving into it deeply, you see that we have no plan for this waste long term over the course of time, and this stuff has to sit in those pools, you know, for five years just to get full enough to go in the dry cask. And most of what we've ever made is still sitting in the fuel pools at the -- you know, the originating plants. And this is, you know, dangerous for our population, and to our health, and to our children, and we are very, very concerned about that. (0005-10-1 [Strickland, Christine])

**Comment:** The risk to human health is too great to gamble on nebulous notifications, opaque proposals, and truncated solutions to the countrywide problem of waste. The American people know that the industry has a track record of hazardous operations, although most of us don't like to think that fact, but we know that hundreds of incidents have occurred at sites where radioactive materials not recognized as waste got managed like trash. Pallets of waste containers were stacked and unstable. Configurations containers were improperly labeled. Shipping records were never retained. Containments were breached. Personnel were not properly trained, result in their own exposure to toxic amounts of radiation. There were failures to perform required radiological screenings or to implement corrective actions. This issue is one of trust. So we do not have confidence. (0005-11-3 [Star, Priscilla])

**Comment:** We have no solutions for even safely storing it. (0005-16-2 [Strickland, Christine])

**Comment:** The Commission also needs to keep in mind that these storage facilities are deteriorating. Some of these facilities are built decades ago. To be able to store spent fuel safely many years after nuclear plants licensed life, deterioration has to be considered. (0038-6 [Goze, Yunjoo])

**Comment:** The American people know that the industry has a track record of hazardous operations, although most of us don't like to think about that fact. We know that hundreds of incidents have occurred at sites where radioactive materials not recognized as waste got managed like trash. Pallets of waste containers were stacked in unstable configurations. Containers were improperly labeled. Shipping records were never retained. Containments were breached. Personnel were not properly trained resulting in their own exposure to toxic amounts of radiation. There were failures to perform required radiological screenings or to implement corrective actions. The issue is one of trust. We don't have "confidence." (0049-6 [Laramée, Eve])

**Comment:** Please stop the decades long practice of unsafe temporary storage of nuclear fuel rods and waste materials. (0069-1 [MacWaters, Chris])

**Comment:** The safety and security risks of storing irradiated nuclear fuel at reactor sites in pools and dry casks are too great for this scoping process to go forward, given NRC's legal errors. (0083-2 [Naples, Jean Marie] [Poulson, Judi] [Salazar, Joe])

**Comment:** Thank you for the opportunity to participate in the recent public meetings on Waste Confidence. Although I have participated, my participation does not imply that I feel in any way confident in proper safety being used in the matter of radioactive waste. (0091-1 [Lewis, Marvin])

**Comment:** And then there's the issue of we're keeping this spent fuel there so long. What is the structural wear and tear of the storage and the maintenance and the inspection schedules? And I think also the dry cask storage needs some help, for example, the effects of the earthquake at the North Anna Nuclear Plant. It actually moved it some inches. And that's why that site specific is really important because you may not have earthquakes in one area and if you know dry cask storage is accessible to that, it needs to be looked at. And of course, there needs to be the advances in the hardened on site storage. (0119-7-4 [Sorensen, Laura])

**Comment:** Protect communities from nuclear waste. (0131-1 [Branham, Rebecca])

**Comment:** Require EIS for ISFSI: Dry cask storage on site must be recognized for what it is - a major federal action- and therefore an EIS must be required before permitting the construction

of Independent Spent Fuel Storage Installations at reactor sites- as affirmed by the 9th Circuit Court. (0148-28 [Lampert, Mary])

**Comment:** PROBABILISTIC RISK ASSESSMENT. Because of uncertainty, PW understands that NRC policy is not to simply rely on PRA's alone to judge what is necessary to protect public health, safety and property. Uncertainty requires defense in depth, low density pool storage and hardened dry cask storage of assemblies > 5 years out of reactor. (0148-37 [Lampert, Mary])

**Comment:** Probabilistic Risk Assessment: Consequence analysis performed in this process recognizes the limitations and pitfalls of probabilistic risk assessment and balances PRA with defense in depth. (0148-8 [Lampert, Mary])

**Comment:** I feel all radioactive material needs to be taken very seriously and the most restrictive containment processes possible taken. (0150-1 [Alexander, Charles])

**Comment:** The NRC must be reformed to the extent that it makes clearly PUBLIC the onerous effects that nuclear waste MAY HAVE ON VARIOUS STORAGE facilities, such as those presently in New Mexico. These dangers include environmental damage in its impact on land, water, and atmosphere. (0196-3 [De Falla, Susanna])

**Comment:** Radioactive waste has been an unsolvable problem for nuclear reactors since this form of energy generation began. No one wants the responsibility of long term storage and there is no long term planning without opposition related to liability. Short term plans have defaulted into indefinite longer terms. Concentration of radioactive material is incompatible with human health. Risk of terrorism continues and escalates with our increasingly desperate circumstances. Pollution of ground and water increase. Accidents are inevitable. Aging structures will continue to pose threats. Sustainable energy resources are available and await practical infrastructure which is also potentially available and the sane alternative. (0239-1 [Whitefield, Anne])

**Comment:** Finding 3 must include a similar fundamental change based on the length of time safe used fuel storage is necessary. The proposed EIS must include a reasonable basis for that confidence, if one exists. (0244-4 [Lacey, L. Darrell])

**Comment:** NRC needs to grapple directly with the matter of SNF storage and its associated environmental and safety impacts so that the public has a clear sense of the alternatives. For example, NRC should assess via this EIS the current state of the highly radioactive irradiated nuclear fuel in spent fuel pools. (0271-9 [Fettus, Geoffrey])

**Comment:** Such delays imply a need for much more detailed understanding of the risk involved in continued storage of used fuel at reactor sites, either in dry cask storage or in fuel pools, and the risk and cost involved in creating and implementing the system needed to take used nuclear fuel from the locations where the federal government accepts it to accomplish acceptably safe emplacement in a geological repository. The NRC's EIS needs to provide the interested public with information on what these delays imply for Waste Confidence. To the extent that the consequences of lengthy delay are uncertain, further research by NRC or other parties to achieve better understanding becomes an important priority, and a listing of research needs to achieve such understanding should be included in the EIS. (0278-3 [North, D Warner])

**Comment:** My first comment addresses the notion of providing an adequate, documented measure of confidence to support safely maintaining spent fuel in storage for several hundred years, which is beyond the original design and licensing bases that typically ranged between 20 to 50 years. The NRC and several components of the nuclear industry have begun efforts to assess fuel storage components aging mechanisms with a goal of understanding preventative measures and of ensuring the continued ability to provide confidence in the continued safe spent fuel storage for several hundred years. Although these efforts related to spent fuel storage component aging will most likely continue for some time after this EIS is scheduled to be published, I encourage the Staff to give a full discussion of these efforts: the progress, the status and schedules, and any preliminary results and conclusions. Let the public know the details of where we stand on these issues. (0282-1 [Haughney, Charles])

**Comment:** Risk assessment in the proposed EIS should be supported by a set of indicators that express the dynamic aspects of the potential risk environment across the time period and suite of scenarios considered in the EIS. (0286-100 [Curran, Diane])

**Comment:** In considering radiological risk, the proposed EIS should repudiate the arithmetic definition of risk. (0286-107 [Curran, Diane])

**Comment:** In assessing the likelihood of a radiological incident, the proposed EIS should rely on diverse sources of information, and should not rely solely upon the findings of probabilistic risk assessment. (0286-39 [Curran, Diane])

**Comment:** In considering radiological risk, the proposed EIS should repudiate the arithmetic definition of risk. (0286-41 [Curran, Diane])

**Comment:** All of the categories of "regulatory significance" of these 23 degradation phenomena - confinement, criticality, retrievability, shielding, structural, and thermal - listed in the NRC table reproduced above are relevant to estimating environmental impacts, some of which could be severe. Others could contribute to severe degradation outcomes. (0286-62 [Curran, Diane])

**Comment:** Consider the state of knowledge for the interactions between different degradation mechanisms as well as the possible effect of high burnup, according to the Nuclear Waste Technical Review Board: These [degradation] mechanisms and their interactions are not well understood. (0286-63 [Curran, Diane])

**Comment:** In sum at present the NRC lacks a realistic basis to assess degradation of high burnup spent fuel storage over long periods, the onsite and offsite radiological impacts of unloading damaged spent fuel, repackaging it as needed, and reloading it into a new cask. (0286-65 [Curran, Diane])

**Comment:** The degradation characteristics of stainless steel fuel are different than zircaloy fuel and need to be explicitly included in the scope of the EIS. All scenarios need to explicitly consider the impacts of stainless steel cladding, including the cladding that was known to be degraded during irradiation. (0286-68 [Curran, Diane])

**Comment:** Impacts on radioactivity on the integrity of aging materials including cladding, storage systems concrete and steel, and existing spent fuel pools must be included in the EIS scoping. (0296-26 [Shapiro, Susan])

**Comment:** Bounding values should also be considered for other key parameters such as...fuel degradation and heat output; fuel type, burn-up and radionuclide inventory; criticality safety; etc. (0325-12 [Bromm, Susan E.]

**Comment:** This list of things to look at would include: identify impacts of pyrophoric materials and fuel cladding for duration or fuel management; fuel pool leaks and resulting contamination; planned and unplanned gaseous releases, whether -- including when reactor vessel is opened for refueling; activation wastes including reactor components; liquid wastes and liquid waste management, filters, and resins; corroded pipes including those buried for purposes of liquid waste disposal; so-called low-level waste generation; consequences of station blackout for both core and fuel pool; consequences of loss of coolant for both core and fuel pool; consequences of inadvertent criticality in fuel pool. (0004-13-11 [French, Dominique])

**Comment:** I recommend the principles as a starting point for the current scoping process already alluded to by Kevin Kamps of Beyond Nuclear. In brief, they are require low density open frame layout for fuel pools, for fire safety, and calling for dry storage after five-year period. (0004-14-7 [Zeller, Lou])

**Comment:** My organization does not consider -- or I should say, we don't have confidence in long-term waste storage in spent fuel pools for a number of reasons. (0004-18-1 [Fuchs, Katherine])

**Comment:** The Commission has even compiled, I think, a very substantial record on the issue of spent fuel leaks -- spent fuel pool leaks as well as the issue of potential spent fuel fire. So I think there's a great record that the Commission can draw upon and should draw upon to help in this effort here, and I think, again, that's something the Commission has recognized in chartering this group. (0004-20-3 [Repka, David])

**Comment:** But with respect to the issues of leaks and fires, certainly the scenario of when a repository becomes available may inform those analysis but, again, ultimately the question is what are the probability and consequences of leaks, what are the probability and consequences of spent fuel fires? (0004-20-5 [Repka, David])

**Comment:** And the impacts of fire exemptions, which have been given in the past, and the impacts that will have on spent fuel fires must be looked at. (0004-25-13 [Shapiro, Susan])

**Comment:** Last -- two years ago, we had an EF5 tornado that demolished North Alabama and passed within five miles of Browns Ferry. And the Browns Ferry fuel pools only have metal roofs above them, and we're of the conviction that an EF5 tornado would demolish those roofs and suck all the fuel pool out of there in the event of a hit by a EF5 tornado or possibly a lesser one. (0004-26-1 [Horn, Stewart])

**Comment:** Since the court concluded that the NRC failed to properly examine the risk of spent fuel pool leaks, we fail to see how the environmental impacts of spent fuel - yeah, spent fuel pool leaks can be evaluated generically as each spent fuel pool is sited in a unique environment. And thus the hazardousness and risks of leaks are site specific. (0004-4-5 [Johnson, Ron])

**Comment:** I would just suggest that with respect to spent fuel pool fires and the leaks, that you explain very clearly the relative risks and consequences. The consequences would be in my view relatively time limited. (0004-7-5 [Ginsberg, Ellen])

**Comment:** I would suggest that in the scope of what you consider, you look at better explanation of how used fuel -- used fuel fires and spent fuel pool leaks might occur. It is my view, my personal view with all due respect to the D.C. Circuit, that they didn't fully appreciate the facts underlying spent fuel pool fires, the timing of those, how and when they occur. And so we'd really encourage the agency to spend time and effort in the process of developing the EIS, explaining those matters. (0004-7-7 [Ginsberg, Ellen])

**Comment:** The extremely low probability of either fires or significant leaks in spent fuel pools should be considered in NRC's analysis. This is in keeping with the court's comments regarding these two distinct issues. In addressing those issues -- these issues, the IBEW respectfully asks that NRC only evaluate potential scenarios that are considered reasonably credible. And regarding spent fuel pools and dry cask storage, experience in the United States has shown that spent fuel can be safely maintained in either storage medium for an extended amount of time and well after permanent reactor shut-down. (0004-8-4 [Burton, Bruce])

**Comment:** Another one that I hope NRC will look at is the National Academy of Sciences report from 2005 which was -- I don't think "classified" is the right word, but it was not released. There is an unredacted report that would be accessible I imagine to the NRC, already has been. There was a redacted version published for public consumption the next year over the objections of the NRC, actually. And really what that NAS report documented and verified is that the warnings, the fears that Alvarez and others reported on in 2003 were to be believed, and they called -- the NAS called for further studies into the risks of pool accidents but also intentional attacks upon pools. (0005-5-10 [Kamps, Kevin])

**Comment:** And so I would just like to go through a number of pools that have leaked in this country. I'll list them and the body of water into which they leak. So Indian Point, Units 1 and 2, both pools in New York State there have leaked into groundwater, which then flows into the Hudson River. Salem Unit 1, which is in New Jersey, very close to Delaware, and that pool has also leaked, and the body of water -- the surface water that it flows into is the Delaware River. Also at Connecticut Yankee in Connecticut there has been pool leakage, and that is into the Connecticut River, which then flows into Long Island Sound. And another pool leak in the United States was in Lynchburg, Virginia, at BWXT Technologies, and that leak was into the James River. These are all NRC licensed facilities. (0005-5-2 [Kamps, Kevin])

**Comment:** And a couple more leaks from NRC licensed pools in the United States, the Hatch Nuclear Power Plant, that leakage into the Altamaha River in Georgia, and most recently -- to me, learning about it anyway -- little known, is pool leakage from the Davis-Besse Nuclear Power Plant in Ohio. Again, many of these leaks first go into groundwater, but that groundwater then flows into the nearest surface waters, and in Davis-Besse's case, that's Lake Erie in the Great Lakes. And I wanted to mention one more pool leak even though it's not an NRC licensed facility to the best of my knowledge, it's a Department of Energy facility, and that is Brookhaven's high flux beam reactor at Brookhaven National Lab on Long Island. And the leakage there is into the aquifer that underlies Long Island, source of drinking water for more than a million people. And even though it is not pool. And so the reason I listed all those is you can see that we have quite an epidemic of pool leaks in the United States. I think that as these

facilities age with age degraded degradation that those pool leaks will become more widespread and spread to other facilities. (0005-5-3 [Kamps, Kevin])

**Comment:** So I do hope that the court's concern to the NRC will be taken seriously and that pool leaks will be included in the scope. (0005-5-4 [Kamps, Kevin])

**Comment:** I had mentioned it earlier, but I hope that the NCR staff will give ample attention to a document from January 2003. It's a report by Alvarez and others. There's about a dozen authors, one of which is the NRC chairwoman, Allison Macfarlane, and that was a extensive comprehensive report on the risks of pool fires. And I don't have the figures memorized for square miles of land that could be contaminated to dangerous levels due to radioactive cesium-137 fallout from a pool fire. I don't know that casualty figures were included in that report, but I think that's a good starting place to look at the dangers of pool fires. And, in fact, it's fully referenced and actually references NRC reports that also looked at pool fires. So there's a solid basis for these warnings. That would be another important document to be looked at. (0005-5-9 [Kamps, Kevin])

**Comment:** At Indian Point, spent fuel has leaked carcinogenic nuclear waste into groundwater and the Hudson River. (0008-2 [Evans, Dinda])

**Comment:** Its [Indian Point] unfortified storage structure has been considered as a target of terrorists. (0008-3 [Evans, Dinda])

**Comment:** Some of the issues that I request that the NRC and Licensees address in this rulemaking include: Fuel pool fires that involve oxidation vs substitution energies. (0009-6 [Lewis, Marvin])

**Comment:** At Indian Point, spent fuel has leaked carcinogenic nuclear waste into groundwater and the Hudson River and its unfortified storage structure has been considered as a target of terrorists. (0027-1 [Eisenstark, Sarita])

**Comment:** At Indian Point, spent fuel has leaked carcinogenic nuclear waste into groundwater and the Hudson River, and its unfortified storage structure has been considered as a target of terrorists. (0030-1 [Flanagan, Lynn])

**Comment:** There is no longer any legal basis for plants like Indian Point to avoid studying the environmental impacts of long-term nuclear waste storage in fuel pools or dry storage. (0030-2 [Flanagan, Lynn])

**Comment:** All the risks and uncertainties associated with that must be taken seriously and must be thoroughly investigated in the process of an honest Environmental Assessment. (0037-5 [Fleetham, Chelsea])

**Comment:** The Commission needs to evaluate and analyze possible risks associated with storage pools and dry casks. (0038-2 [Goze, Yunjoo])

**Comment:** Groundwater contamination from storage pool leaking is very troubling. As the D.C. Circuit noted, the Commission has to analyze possibilities of future leaks and health effect of those possible leaks. The Commission already admitted a few incidences of leaks but dismissed those leaks as harmless because it concluded that the harmful impact from those leaks were



negligible. This does not guarantee that future leaks also will be harmless. (0038-4 [Goze, Yunjoo])

**Comment:** The Commission needs to examine both possibilities and consequences of storage pool fires. (0038-5 [Goze, Yunjoo])

**Comment:** At Indian Point, spent fuel has leaked carcinogenic nuclear waste into groundwater and the Hudson River, and its unfortified storage structure has been considered as a target of terrorists. (0044-1 [Mohan, Debi])

**Comment:** This plant has for years been leaking radioactive materials into the Hudson River and endangering water supplies. The plant should be shut down completely. (0052-1 [Williams, Curt])

**Comment:** I urge the NRC to consider the dangerous practice of stacking tons of spent fuel at nuclear sites in aging and overcrowded fuel pools with no option of permanent safer storage alternatives an extinction level event (ELE) waiting to happen. (0055-1 [Enebo, Karin])

**Comment:** A fuel pool disaster, as many of us have learned from the dire situation at Fukushima Daiichi in Japan, once critical HAS NO KNOWN TECHNOLOGY TO MITIGATE. It is an unstoppable chain reaction. (0055-4 [Enebo, Karin])

**Comment:** A thorough exploration of long-term repercussions for nuclear storage is needed. This should involve in-depth examination of technical issues, such as vulnerability of storage structures, potential for accidents, deterioration over time. (0061-2 [Eilenberg, Alisa])

**Comment:** I live not far from Indian Point, where waste pools have leaked nuclear waste into groundwater and the Hudson River. (0061-4 [Eilenberg, Alisa])

**Comment:** This unfortified structure [Indian Point] has potential to be a terror target. (0061-5 [Eilenberg, Alisa])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0062-5 [Jessler, Darynne])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie) -- must be considered in this EIS. (0062-7 [Jessler, Darynne])

**Comment:** The risks of pool fires must be considered in this EIS. (0062-8 [Jessler, Darynne])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie) -- must be considered in this EIS. (0063-4 [Matsuda, Thomas])

**Comment:** The risks of pool fires must be considered in this EIS. (0063-5 [Matsuda, Thomas])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0064-5 [Clark, Kenneth])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0065-2 [Collecchia, Geri])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam S Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie) -- must be considered in this EIS. (0065-4 [Collecchia, Geri])

**Comment:** The risks of pool fires must be considered in this EIS. (0065-5 [Collecchia, Geri])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0066-2 [Swyers, Matthew])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie) -- must be considered in this EIS. (0066-4 [Swyers, Matthew])

**Comment:** The risks of pool fires must be considered in this EIS. (0066-5 [Swyers, Matthew])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0067-2 [Kammerer, Greg])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie) -- must be considered in this EIS. (0068-1 [Sheridan, Paul])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0068-5 [Sheridan, Paul])

**Comment:** The risks of pool fires must be considered in this EIS. (0068-7 [Sheridan, Paul])

**Comment:** Storage pools have already leaked radiation into groundwater and streams, and more will eventually do so. (0069-6 [MacWaters, Chris])

**Comment:** Pools are also subject to catastrophic draining and fires spreading tons of radioactive material into our environment to last for decades to centuries. (0069-7 [MacWaters, Chris])

**Comment:** I'm really concerned about nuclear waste products leaking into ground water resources. We all know - and the government has only lately admitted - that this is what has happened at Hanford, WA. I also understand that there are numerous other locations where groundwater has been contaminated by nuclear run off downstream, including Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie). (0070-1 [Selquist, Donna])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River). (0071-5 [Bartholomew, Alice])

**Comment:** The risks of pool fires must be considered in this EIS. (0071-6 [Bartholomew, Alice])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3, Salem 1, CT Yankee, the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor BWXT Technologies, as well as Hatch and Davis-Besse-- must be considered in this EIS. (0072-7 [Shuput, Steve])

**Comment:** The risks of pool fires must be considered. (0072-8 [Shuput, Steve])

**Comment:** The risks of pool leaks into groundwater, which then flow into surface waters downstream, as have occurred at Indian Point 2 & 3, Salem 1, CT Yankee, the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor, BWXT Technologies, as well as Hatch and Davis-Besse, must be considered in this EIS. (0074-2 [Derbigny, Rodney])

**Comment:** Please consider the very likely risks of pool leaks & fires, & the risks of current dry cask storage which quality is shoddy as revealed both by industry & by ethical, courageous NRC whistleblowers (heroes). (0076-2 [Sorgen, Phoebe])

**Comment:** Though not common knowledge, catastrophic radioactivity leaks have been all too common & will unfortunately reoccur. (0076-4 [Sorgen, Phoebe])

**Comment:** The NRC needs to include the various safety, security, and environmental risks of both pool and dry cask storage of irradiated nuclear fuel in its EIS. (0077-1 [Bosold, Patrick])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0080-3 [Cochran, Moncrieff] [Maurer, William])

**Comment:** The EIS must consider the risk of pool leaks into groundwater, which then flows into surface waters downstream. Such leaks have occurred at several facilities. (0080-5 [Cochran, Moncrieff] [Maurer, William])

**Comment:** The EIS must consider the risks of pool fires, which could release into the environment many times more radiation than was released at Fukushima because pools at most U.S. nuclear reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4. (0080-6 [Cochran, Moncrieff] [Maurer, William])

**Comment:** The EIS should consider the risk of pool leaks into groundwater, which then flows into surface waters. Such leaks have occurred at several facilities in the U.S. (0084-2 [Vale, Karen])

**Comment:** The EIS should also consider the risks of pool fires, which could release into the environment many times more radiation than was released at Fukushima because pools at most U.S. nuclear reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4. (0084-3 [Vale, Karen])

**Comment:** Fuel pool fires appear to be an outstanding item at Fukushima. I suggest that the testing has not extended to all problems inherent during and subsequent to a fuel pool fire. Also the assumptions of what will work and when were developed during a time when 'single failure criterion' and flooding design was considered uncontested. (0087-1 [Lewis, Marvin])

**Comment:** Second, fires at the fuel pools at Fukushima appear to have burned with the zirconium-steam reaction which is a substitution reaction along these lines: Zirconium steam yields zirconium oxide hydrogen. The recent changes allowed in more concentrated fuel pool stacking may increase the risk of a fire by an oxidation reaction: Zirconium Oxygen yields Zirconium oxide and much more energy. The greater energy from an oxidation reaction would increase the severity of the accident. (0087-3 [Lewis, Marvin])

**Comment:** Fires that happen in cores are unlikely to be supplied with oxygen from the air as cores are pressurized by steam. Fuel pools are open to the air. Zirconium fires reacting with the air must also reach an ignition temperature. If conditions are reached to ignite a zirconium oxygen fire, a fuel pool can experience run-away reaction rates for the fires. (0087-5 [Lewis, Marvin])

**Comment:** The temperature at which zirconium oxygen fires will runaway has not been established adequately in fuel pools. These temperatures may be related to surface, alloying, chemistry of coolant, coolant flow and other parameters. A study of these parameters is needed as Waste confidence requires use of fuel pools for a period of time before transfer of SNF to casks or geological repository. (0087-7 [Lewis, Marvin])

**Comment:** These pools of radioactive waster can catch fire and should be reviewed in the EIS. It is worthwhile noting that the pools at most U.S. atomic reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4. (0092-7 [Kukovich, Kenneth M.]

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0093-3 [Nichols, John])

**Comment:** The EIS must consider the risk of pool leaks into groundwater, which then flows into surface waters downstream. Such leaks have occurred at several facilities. (0093-5 [Nichols, John])

**Comment:** The EIS must consider the risks of pool fires, which could release into the environment of many times more radiation than was released at Fukushima because pools at most U.S. nuclear reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4. (0093-6 [Nichols, John])

**Comment:** Please enter into the record that at least one concerned citizen of the Hudson Valley, namely me, requests that everything possible be done by our elected and appointed officials to get rid of nuclear waste anywhere near the Hudson River Estuary or any other river or estuary for that matter. (0097-1 [O'Neill, Kevin])

**Comment:** All over the country, leaks from High Level Radioactive Waste storage pools, as well as leaking pipes are leaking into our soil, groundwater and surface water. (0105-4 [Hoodwin, Marcia])

**Comment:** Because of the landmark court victory, there is no longer any legal basis for plants like Indian Point in New York to avoid studying the environmental impacts of long-term nuclear waste storage in fuel pools or dry storage. At Indian Point, spent fuel has leaked carcinogenic nuclear waste into groundwater and the Hudson River, and its unfortified storage structure has been considered as a target of terrorists. (0108-1 [Schlamm, Rhoda])

**Comment:** My immediate concern is the outdated nuclear facility at Indian Point. The fact that its storage tanks have already leaked nuclear waste into the Hudson River, plus the concern that they could be a terrorist target is more than enough to get rid of them and to move forward toward shutting down this dangerous plant. (0112-1 [Chess, Deborah])

**Comment:** And if there's a leak or a fire what's the probable, you know, it's scientific fact, the probable pathways that are going to release these into the environment and the quantities. And so I think it's irresponsible of the NRC to not disclose that information to the public. You're asking the public to weigh in on this, I appreciate that. And I think you have to give the public the information that they need to be able to make an informed decision. Further, following up on the fuel canisters, the casks of these that are on-site, the dry-cask storage, I think studies that have been done, whatever studies have been done, about the degradation of the fuel rods in there and what the life cycle is. What's going on inside of those fuel casks, inside of where the rods are. And just what is happening in there and whether the likelihood, what is the likelihood of the material degrading to the point where you have a pile of the fuel rods in the bottom with a possibility of going critical. Or whatever the possibilities are and whatever the likely scenario, as these materials are stored on-site for much longer than was ever contemplated. Again, there's a real lack of information that the public has been given and there's just this land assurance that, oh, you can store these materials for, you know, whether it's a generation or 100 years. (0118-3-4 [Safer, Don])

**Comment:** And then the other thing I'd like to address is the spent fuel. We have far too many nuclear power plants with an enormous amount of spent fuel stored in a very crowded, congested fashion. And many of us are just very concerned about the implications of a major disaster in a spent fuel pool. (0118-4-2 [Warren, Barbara])

**Comment:** A, checkerboarding, shifting the fuel around, which seems that it would be fairly useless, unless you have analyses to show it otherwise. It there's partial drainage of the water, or if debris blocks air flow in a drained pool. Back on the spray cooling, that people are talking

about. Again, it seems ineffective and we would like to see specific analyses indicating why you may think otherwise. (0118-7-4 [Lampert, Mary])

**Comment:** I wanted to address this round of my comments on pool risks that should be a part of the scope of this EIS. I'll start with leaks from pools which apparently the D.C. Circuit Court of Appeals has already ordered NRC to look into. And so I would urge NRC to look at the history of documented leaks from high-level radioactive waste storage pools in the United States. And I've got six NRC Licensees here. (0118-8-1 [Kamps, Kevin])

**Comment:** I think some of the lessons that NRC should learn or look into and learn from, in these instances of four weeks in the United States would be things like the fact that these pool leaks, in some cases, went on for years or even decades before being detected, because of the lack of monitoring wells in the ground water or the misplacement of those wells, so that the plumes simply past them by without detection. These leaks were of various sorts. They weren't simply age-degraded degradation, although that is a major and worsening issue, for sure. But some of these leaks had to do with the clogging of drains that simply allowed pools to overflow in various ways. And, so that's some of what I had to say about pool leaks. (0118-8-2 [Kamps, Kevin])

**Comment:** Another issue I would like to address specifically is the issue of sudden drain-down to the pools. And one example that we experienced a near miss with, was at Dresden Unit Number 1... So, the scenario is those heavy loads blowing a hole in the bottom of the pool, draining the water away, and then the waste catching on fire. And as another commenter mentioned, these pools are very densely packed and so air circulation is not going to cool the waste. So, along those lines, is a question that should be looked at in the scope of this proceeding. Which is the admission temperature of zirconium fuel cladding, and I believe a 2.206 emergency petitioner named Mark Leyse, if I'm pronouncing his last name correctly, has challenged NRC's assumptions about the temperature of admission of zirconium, which is a very significant issue. Because, of course, the lower the temperature the quicker that will be a problem in an accident situation. In addition to the pool leaks, I'm sorry, the sudden drain-down scenario, there's the boil down scenario that Mary Lampert just addressed. ...So how fast breaking this short-circuiting of electrical circuitry due to steam in the reactor building could occur as a major issue there. (0118-8-4 [Kamps, Kevin])

**Comment:** I would also ask with that in mind that perhaps it's examined that we roll back re-racking permits for the pools that in some sort of generic environmental impact or generic licensing guideline overall that we mandate a decreased density of spent fuel in the pools because one of the problems is that these pools were originally designed -- I believe -- for less fuel in them than they have now so that if for some reason there's a power interruption or a loss of coolant accident, pools heat up more quickly or lost their cooling water more quickly exposed the cladding to air more quickly and thus run the risk of fire more quickly and that survivability of or the safety parameters of pools indicates that accidents could be lengthened a little if we would bring the quantity of fuel in the pools down. So I think there should be some sort of consideration in the ruling that would force plants to move fuel out of pool storage into dry storage. And I also think that we need to mandate a better form of onsite dry storage. (0119-10-1 [Levine, Gregg])

**Comment:** It should include leaks from spent-fuel pools, those current and future leaks. (0119-6-6 [Agnew, David])

**Comment:** And that is that I heard earlier that there would be no new research regarding spent-fuel pool fires, and I would ask why not. We're planning something for tens or hundreds of thousands of years. Why not continue to do research. (0119-6-8 [Agnew, David])

**Comment:** Dr. Gordon Thompson, Report to the Attorney General Commonwealth of Massachusetts, June 2, 2011, pg., 18 (NRC's EHD, Pilgrim Proceeding) showed that jury-rigged systems may fail to add water to an affected pool in sufficient quantity to prevent a pool fire. Therefore, reducing the probability of a pool fire should be NRC's priority. The most effective and reliable measure to prevent a pool fire would be to re-equip the pool with low-density, open frame-racks. (0148-13 [Lampert, Mary])

**Comment:** Dr. Thompson stated conclusively that the foregoing leads to the following conclusions.

(a) Fukushima showed clearly that the operators' capability to mitigate an accident at the Pilgrim or a similarly designed reactor can be severely degraded in the accident environment.

(b) EDMGs are inadequate to mitigate the range of fuel-damage events that could occur at the Pilgrim plant5. This is based on NEI's EDMGs on adding water to spent-fuel pools.

(c) Due to inadequacies in the EDMGs, it is clear that there is a substantial probability of a spent-fuel-pool fire during a reactor accident at the Pilgrim plant resulting from a variety of external and internal factors.

NRC must by its scoping process respond to Dr. Thompson's findings.

(4) Adding Water to BWR Spent Fuel Pools Forces A Choice - Either Sacrifice Reactor or Pool. (0148-15 [Lampert, Mary])

**Comment:** (a) Problem: Densely-packed spent fuel pools. Spent fuel pools were designed to be temporary and to store only a small fraction of what they currently hold. Example: Pilgrim Nuclear Power Plant's spent fuel pool was designed to hold 880 assemblies. The NRC allowed Pilgrim, for example, to amend its license to hold 3,859 assemblies in the same place by packing the assemblies closer together. This enabled Pilgrim to continue generating waste without an offsite storage option in order to complete their current license (June 2012) and not expend monies for drycasks. The licensee stated that during license renewal it intends only to remove the requisite number of assemblies from the pool to make room for the next download - leaving the pool densely packed, unless required to do otherwise. (0148-17 [Lampert, Mary])

**Comment:** Risk: Spent Fuel Pool Fires- Vulnerability. Several events could cause a loss of pool water including leakage, evaporation, siphoning, pumping, aircraft impact, accidental or deliberate drop of a fuel transport cask, reactor failure, or an explosion from inside or outside. Scoping must evaluate these scenarios. For example over the past 30 years, there have been at least 66 incidents at U.S. reactors in which there was a significant loss of spent fuel water. Ten have occurred since the September 11 terrorist attacks, after which the government pledged that it would reinforce nuclear safety measures. The probability of external events causing pool water events has increased; because of an increased threat of terrorism, post 9/11, and increased occurrence of extreme storm events resulting from climate change. (0148-18 [Lampert, Mary])

**Comment:** Densely packed pools are especially prone to fire. To avoid criticality of assemblies placed close together, neutron absorbing panels are placed between the assemblies. The extra panels will restrict air and water circulation if there is a water loss. Further, if the equipment

collapses, as might occur in a terrorist attack, air and water flow to the stacked assemblies would be obstructed causing a fire, according to a NRC report.

Boraflex: In addition NRC has been aware for decades that corrosion (Boraflex degradation) is occurring in spent fuel pool storage racks, the barriers that prevent a nuclear chain reaction in a spent fuel pool. Because spent fuel storage racks must be maintained subcritical, Boraflex degradation can result in a serious safety concern. (0148-21 [Lampert, Mary])

**Comment:** Highlighted "recent examples of where the surveillance programs and corrective actions were not effective in dealing with Boraflex degradation (and that) These instances highlight that ineffectual monitoring and corrective actions can lead to unidentified and unmitigated degradation that may challenge the subcritical margin for the SFP." Because there are no guarantees that more examples will not occur in the future, NRC's policy of defense in depth supports NRC requiring reducing the number of assemblies in the pool to a low density, open frame design. (0148-22 [Lampert, Mary])

**Comment:** Mitigation Effectiveness, Unsupported: NRC's most recent Waste Confidence update (December 2010) said that "Mitigative measures imposed since September 11, 2001 provides high assurance that the spent fuel in both spent fuel pools and dry storage casks will be adequately protected." Further it states that, it had adopted the important recommendations for the NAS report relevant to spent fuel pools." However there is no demonstration that each reactor site has adopted the recommendations; and, most important, the effectiveness of those recommendations is unsupported. Recommendations by the National Academy of Sciences Safety and Security of Commercial Spent Nuclear Fuel Storage Public Report, April 2005 to reduce risk, do not eliminate it.

For example:

-Reconfiguring the Pool or Checker-Boarding: Shifting the fuel around will be useless if there is partial drainage of the water or if debris blocks air flow in a drained pool. Low density open frame racking is the only way to go.

-Spray cooling systems installed in the pool: If water is lost from a spent fuel pool recently discharged fuel can ignite in a period as short as 1-2 hours. Actual period depends on the time since the reactor shutdown for refueling. There is at present no pre-engineered means of spraying water into a drained pool to keep the fuel temperature below the ignition point. Human access with hoses could be precluded by fire or high radiation fields generated as part of the attack, or by other disabling mechanisms such as chemical weapons. Sophisticated attackers might attack the reactor and the pool, using the radiation field from the damaged reactor to preclude access to the pool. Once ignition had occurred, spraying water into the pool would feed the fire through the exothermic steam-zirconium reaction. A massive and probably impractical flow of water would be needed to overcome the effect. (0148-23 [Lampert, Mary])

**Comment:** Develop enhanced onsite capability for damage control. Solution - Mitigation Providing Real On-Site Waste Confidence: The Massachusetts and NY Attorney Generals, Pilgrim Watch and a host of public interest groups and officials across our country have called for NRC to step up to the plate and prioritize and require low density pool storage and hardened, dispersed dry cask storage as an interim and safer measure until a scientifically acceptable offsite permanent storage option becomes available. (0148-25 [Lampert, Mary])

**Comment:** Radioactivity Leaks from Storage Pools. Storage pool leaks into soil, groundwater, and surface waters - also needs to be included in the EIS scope. Leaks from pools into groundwater at more than a half-dozen U.S. nuclear sites have occurred, such as at Indian



Point. Waste Confidence to address this issue requires robust monitoring and low density pool storage. (0148-26 [Lampert, Mary])

**Comment:** Onsite Storage: Require low density, open frame pool storage; hardened, dispersed dry cask storage for assemblies out of reactor > 5 years, and address leaks radioactivity from storage pools. (0148-4 [Lampert, Mary])

**Comment:** U.S. plants typically contain several times as much spent fuel as the one at Fukushima's Unit 4, and stored in a densely packed configuration that would be harder to cool in the event of a rapid loss of pool water. Pilgrim, for example, has 3,279 assemblies in its elevated pool that was originally designed for only 880 assemblies.

Stakeholders repeatedly have recommended that the spent fuel pool hazard be decreased by accelerating the transfer of irradiated fuel > 5 years out of the reactor in dry storage, thereby reducing the density of the fuel remaining in the pools.

The Fukushima accident shows that NRC's assumptions about operator's capability to mitigate an accident at Pilgrim NPP, or similar reactors, are unrealistically optimistic and that operator's ability to carry out mitigative measures can be severely degraded in an accident environment. Mitigative measures (extensive damage mitigative guidelines- EDMGs) are inadequate to address the range of reactor and spent fuel pool events that can occur at reactors in the U.S. and therefore there is a probability of a spent fuel pool fire. (0148-9 [Lampert, Mary])

**Comment:** It is important that the potential environmental and/or health effects of radiation leaks be considered in the location where the spent nuclear fuel is actually stored after the reactor is shut down, not where it may be stored. This is especially important near the earthquake/tsunami vulnerable Pacific Rim locations. (0167-1 [Torres, Madge])

**Comment:** Radioactivity leaks from storage pools should be included in the EIS scope. (0187-3 [C, John])

**Comment:** The risks of pool fires must be considered in this EIS. Radioactivity leaks from storage pools – into soil, groundwater, and surface waters – should also be included in the EIS scope. (0189-3 [Valtri Burgess, Vivian])

**Comment:** The many problems that have occurred over the years and decades with dry cask storage – from explosions, to leaks, to design and fabrication flaws, as well as security vulnerabilities -- must be included in the EIS scope. (0189-5 [Valtri Burgess, Vivian])

**Comment:** The risks of pool fires must be considered in this EIS. (0194-2 [Selquist, Donna])

**Comment:** Besides issues with earthquakes, fires, severe storms, the risks of pool leaks into groundwater, which then flow into surface waters downstream -- as have occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the U.S. Dept. of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), as well as Hatch (GA/Altamaha River) and Davis-Besse (OH/Lake Erie) -- must be considered in this EIS. (0207-1 [Harris, Deborah W.]

**Comment:** The spent fuel pools sitting on top of reactors have to be moved. A better temporary storage method exists. Find the safest way to better control these materials until we can get properly rid of them. (0211-1 [Wood, Richard])

**Comment:** Let's improve on site storage of spent fuel by getting it out of water pools and into robust storage by better dry casks. Let's end leaks of radiation into the soil and groundwater surrounding these plants, as in New York and Vermont. (0221-2 [Kline, Susan])

**Comment:** Spent Fuel Pool Fires and Leaks. Spent fuel pool fires and leaks are not generic issues within the scope of the Waste Confidence proceeding, but are site specific design and safety matters. Spent fuel pool cooling, criticality, structural integrity and related matters were reviewed on a site specific basis when the current generation of operating NPPs was licensed. Many were reviewed again when spent fuel pool capacities were increased by re-racking. All spent fuel pool cooling systems have been recently re-reviewed as part of the NRC's post-Fukushima response and in some cases corrective actions are being taken to strengthen their ability to withstand earthquakes, flooding and loss of off-site power. For new reactors currently under construction, the safety and environmental impacts of storage in spent fuel pools will be addressed on a site specific basis as part of the license review. Likewise, spent fuel pool leakage is an operational matter that is being dealt with elsewhere (see Generic Safety Issue 202 and associated NUREG-0933). If spent fuel needs to be stored for several decades, fires are no longer a concern because heat generation rates decrease to a level where dry storage is possible and has been implemented by many utilities. If the lack of a repository necessitates decades of spent fuel storage, more utilities will opt for this alternative to reduce operating and maintenance costs ( an article in the November- December Radwaste Solutions Magazine states that Dairyland Power Co-operative will save \$3 million annually in pool monitoring and maintenance costs by going from wet to dry storage.) (0226-1 [Bell, Michael])

**Comment:** Spent fuel is arguably the most environmentally hazardous material on earth. As you are aware, it emits massive amounts of life threatening radiation for hundreds of thousands of years. A satisfactory permanent method of protecting earth's population from this hazard has not been identified in more than 60 years of investigation. (0238-1 [Patrie, Lewis])

**Comment:** NRC needs to include assessment of risk of pool fires that could occur from a rapid loss of coolant due to earthquake or terrorist attack and a boil off of coolant due to loss of power. The events at Fuskushima that occurred should be reviewed and included in the the assessments for the EIS. (0241-4 [Ower, Douglas])

**Comment:** Low density configuration of the SFP should be required - for a greater margin of safety. (0242-10 [Agnew, David])

**Comment:** The EIS must consider the risks of pool fires. (0242-11 [Agnew, David])

**Comment:** Analysis must include: sabotage/terrorist acts; current and future leaks from SFPs. (0242-6 [Agnew, David])

**Comment:** The scope must include a discussion of specific temporary storage options. Wet storage in pools, Dry storage in casks, Storage in oxygen depleted enclosures, etc. (0246-9 [Kohler, Joseph])

**Comment:** Include in the generic environmental impact statement scenarios involving wet pool and dry storage along with associated regulations, or lack thereof, intended to protect the public and the environment from these hazards. (0260-3 [Lochbaum, David])

**Comment:** As directed by the Commission, the NRC staff should use the existing information to the extent possible and bolster it with new analyses only as necessary. The staff need not utilize “worst case” assumptions in this analysis. The augmented discussion should focus on explaining how data on past leaks informs the agency on the likelihood and impacts of future leaks, developing the sort of forward-looking analysis that the Court described as needed. To do so, the NRC should specifically explain how its past experience with spent fuel pool leaks has led to regulatory improvements intended to minimize the occurrence and impacts of future leaks. In addition, the NRC can properly focus on relevant engineered features, as well as monitoring programs and reporting requirements, to develop an environmental analysis that uses past data to inform the likelihood and impacts of potential future leaks. By doing so, the agency can build a record based upon existing information – supplemented with new analysis, as necessary underlying its assessment of the low risks (probability and consequences) of future spent fuel pool leaks. (0263-14 [Ginsberg, Ellen])

**Comment:** Emphasizing the work already performed on the consequences of spent fuel pool fires will be particularly valuable, given that the Court of Appeals perceived that the agency did not analyze these consequences at all. In fact, the remand should be satisfied if the EIS more specifically describes the studies already undertaken to assess both the probability and consequences of spent fuel pool fires, ultimately supporting a conclusion that the overall risk (and environmental impact) of these fires is not significant. There is a strong foundation upon which to build, and a clear articulation of both the low likelihood and the consequences of spent fuel pool fires will go far in addressing the remand. (0263-25 [Ginsberg, Ellen])

**Comment:** The Waste Confidence EIS should address active monitoring of dry storage systems. NRC staff identified a number of issues related to monitoring in a Draft Report for Comment, "Identification and Prioritization of the Technical Information Needs Affecting Potential Regulation of Extended Storage and Transportation of Spent Nuclear Fuel," published May 2012. Nevada agrees with the NRC staff focus in that draft report upon monitoring as a "tool for ensuring continued safety" of spent fuel storage, [p. 5-4] and the observation that monitoring methods that can "detect early signs of degradation before a safety function is severely compromised are of greater value than those that only indicate gross failure." [p. A9-2] (0265-27 [Halstead, Robert])

**Comment:** NRC must assess the overfilling of highly radioactive irradiated nuclear fuel pools as a factor in catastrophic events, including drain-downs and fires, but also inadvertent criticality and other events where loss of pool integrity results in inability to stabilize cooling within the structure. (0266-1 [Anonymous] [Fisher, Allison] [Gale, Maradel] [Lish, Christopher] [Mariotte, Michael] [Sheridan, Paul])

**Comment:** The extremely low probability of either fires or significant leaks in spent fuel pools should be considered in NRC's analysis. This is in keeping with the court's comments regarding these two distinct matters. In addressing these issues, the IBEW respectfully requests that NRC only evaluate potential scenarios that are considered reasonably credible. (0267-2 [Hill, Edwin])

**Comment:** Regarding spent fuel pools and dry cask storage, experience in the United States has shown that spent fuel can be safely maintained in either storage medium for an extended amount of time and well after permanent reactor shut-down. (0267-3 [Hill, Edwin])

**Comment:** The Environmental Impact Statement must consider the possibility of pool and cask leaks into the groundwater, which has already occurred at Indian Point 2 & 3 (NY/Hudson River), Salem 1 (NJ/Delaware River), CT Yankee (Connecticut River & Long Island Sound), the US Department of Energy's Brookhaven High Flux Beam Reactor (Long Island's sole source drinking water aquifer), BWXT Technologies (VA/James River), Hatch (GA/Altamaha River), and Davis-Besse (OH/Lake Erie). (0269-23 [Warren, Barbara])

**Comment:** The Environmental Impact Statement must also consider the risk of fires with the spent fuel pools. (0269-24 [Warren, Barbara])

**Comment:** The Environmental Impact Statement must also consider and compare the implications for the variety of possible methods for storing more than 150,000 tons of irradiated nuclear fuel expected to be housed at atomic reactors in the United States in 2050. Storage in spent fuel pools poses an especially severe and unjustifiable risk to public health and the environment. In addition to studying this for the EIS, NRC should take immediate action to reduce the inventory of fuel assemblies in fuel pools. Additionally, the deficiencies of dry casks and needed standards and monitoring should be studied in the EIS. (0269-3 [Warren, Barbara])

**Comment:** Risk of spent fuel pool leaks. Leaks increase the risk that SNF could be exposed to the atmosphere, but what are the factors that increase the risk of spent fuel pool leaks? The type of reactor pool? The quality of its original construction? Pool operations over time? Age? The density of pool storage? And/or, external events (e.g. flooding; earthquakes)? Based on these or other factors, is it possible to categorize pools regarding their risk of leaks? Also, is the range of risk broad or narrow? Can NRC specify a level of risk beyond which it would require accelerated removal of SNF from pools to dry storage? Does NRC intend to make this specification, and, if so, when? (0270-3 [Niles, Ken])

**Comment:** Risk of SNF fires. Our understanding is that SNF fires are caused by exposure of zirconium cladding to the atmosphere after a substantial loss of pool water and onsite power for pool water circulation. If so, the causes and risk factors may be similar to those for spent fuel leaks. The hazard may be increased, however, by the portion of high burn-up fuel in wet storage and/or by near-site conditions. Based on these factors, is it possible to categorize pools according to their risk of SNF fires? (0270-4 [Niles, Ken])

**Comment:** Pool Storage Capacity. Our understanding is that pools operate most reliably as originally designed. Re-racking increases pool capacity, but, with increased SNF packed more tightly, hazards (including pool operation hazards) inevitably increase. The increase may depend, in part, on the type and age of the pool. We will appreciate NRC's synthesis assessment of the hazards introduced as SNF in wet storage increases, and the extent to which these hazards are decreased by transfer from wet to dry storage, even though the ability to monitor and address SNF and cladding degradation is less in dry storage than in pools. (0270-6 [Niles, Ken])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: waste management strategies or measures to reduce risks of extended SNF storage (e.g., repackaging; reduced storage density in reactor pools; using the results of spent fuel

storage vulnerability analyses for possible packaging and pool requirement upgrades; expedited transfer of spent fuel into dry storage; and early or prioritized waste disposal for certain fuel types and/or reactor sites). (0272-5 [Weisenmiller, Robert B.]

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: potential contamination to groundwater from SNF pool leaks. (0272-8 [Weisenmiller, Robert B.]

**Comment:** Require a low-density, open-frame layout for fuel pools: Fuel pools were originally designed for temporary storage of a limited number of irradiated fuel assemblies in a low density, open frame configuration. As the amount of waste generated has increased beyond the designed capacity, the pools have been reorganized so that the concentration of fuel in the pools is nearly the same as that in operating reactor cores. If water is lost from a densely packed pool as the result of an attack or an accident, cooling by ambient air would likely be insufficient to prevent a fire, resulting in the release of large quantities of radioactivity to the environment. A low density, open-frame arrangement within fuel pools could allow enough air circulation to keep the fuel from catching fire. In order to achieve and maintain this arrangement within the pools, irradiated fuel must be transferred from the pools to dry storage within five years of being discharged from the reactor. (0273-9 [Zeller, Lou])

**Comment:** The EIS should rigorously explore all of the potential environmental impacts associated with long-term and indefinite storage of nuclear wastes at reactor sites following reactor shutdown, including the risk of fires....deterioration of spent fuel pools and dry casks. (0275-8 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The overcrowding of spent fuel pools increases the risk that the highly hazardous fuel assemblies cannot be kept adequately cool. Drain-down of the requisite coolant due to a terrorist attack, human error or natural disaster could cause a catastrophic fire or explosion, with huge potential amounts of lethal radioactivity released to downwind and downstream communities, and with environmental damage lasting for centuries. (0277-4 [Roskos, Laura])

**Comment:** Cooling pools are not a safe place to hold spent nuclear fuel indefinitely, particularly at the density that most U.S. pools are now packed. This EIS must examine opportunities to remove spent nuclear fuel from cooling pools. In addition to the leakage and fire risks identified by the D.C. Circuit Court, many U.S. cooling pools are poorly designed and not sufficiently hardened against possible terrorist attack. (0281-5 [Fuchs, Katherine])

**Comment:** Decreasing the density of spent nuclear fuel in cooling pools must be part of this EIS. The density of most U.S. cooling pools is far beyond their designed capacities. Spent fuel density increases the probability of both cooling pool leaks and fires. This EIS should examine alternative plans for long-term on site storage of spent nuclear fuel. (0281-7 [Fuchs, Katherine])

**Comment:** The NRC should consider alternatives to minimize the risks of storage of spent nuclear fuel and high level waste, including placement below ground level, elimination of the current practice of high-density storage of spent fuel in pools, and more robust designs for storage casks. The environmental impact statement should assess the radiological risk arising from a range of conventional accidents or attacks, including those conducted by terrorists. (0284-11 [Collins, Fred])

**Comment:** NRC must bound the possibilities of fuel pool catastrophe--a drain down due to an event such as the Point Beach hydrogen explosion and cask lid ejection--and not simply assume a boil off where replacement of coolant can be expected. (0285-8 [D'Arrigo, Diane])

**Comment:** Mitigation of spent fuel pool leakage risks. The EIS must also include a comprehensive assessment of all relevant measures that may mitigate adverse environmental consequences of future spent fuel pool leaks and any resulting contamination of the environment. Musegaas, Declaration, Section 7. Various feasible measures are available that would avoid, minimize, rectify, reduce, or eliminate the environmental impacts of future radiological spent fuel pool leaks and contamination associated with such leaks. The EIS should include an assessment of the feasibility and efficacy of all reasonable measures to mitigate the impacts of future spent fuel pool leaks on the environment. (0286-10 [Curran, Diane])

**Comment:** In assessing the comparative radiological risk posed by alternative options for storing SNF or HLW, the proposed EIS should give special attention to the potential for radioactive release from stored SNF as a result of a pool fire or a cask fire. (0286-105 [Curran, Diane])

**Comment:** In assessing the potential for initiation of a pool fire at a given facility, the proposed EIS should account for factors including: (i) the potential occurrence of a range of conventional accidents or attacks at the facility; (ii) a range of water-loss and fuel-loading scenarios; and (iii) the potential occurrence of degraded-site conditions due to an incident at an adjacent facility (e.g., a reactor). (0286-106 [Curran, Diane])

**Comment:** The NRC's EIS must analyze in-depth the probability that densely packed SFPs at reactor sites will leak toxic radionuclides to the environment following the cessation of plant operations. (0286-108 [Curran, Diane])

**Comment:** The EIS must analyze in-depth and consider the likelihood of SPF leaks and releases resulting from human error. (0286-109 [Curran, Diane])

**Comment:** In analyzing SPF leaks, the EIS must take into account site-specific factors. (0286-110 [Curran, Diane])

**Comment:** In analyzing SPF leaks, the EIS must take into account site-specific factors [including]... Consequences of Radiological SFP Leaks to Groundwater Resources. (0286-111 [Curran, Diane])

**Comment:** In analyzing SPF leaks, the EIS must take into account site-specific factors [including]... Consequences of Radiological SFP Leaks to Surface Water Resources. (0286-112 [Curran, Diane])

**Comment:** In analyzing SPF leaks, the EIS must take into account site-specific factors [including]... Long-Term Public Health Consequences of Radiological SFP Leaks to the Offsite Environment. (0286-113 [Curran, Diane])

**Comment:** The EIS must include a comprehensive assessment of all relevant measures that may mitigate adverse environmental consequences of future SFP leaks and any contamination of the environment resulting there from. (0286-115 [Curran, Diane])

**Comment:** NRC must fully consider the degree and extent to which immediate clean-up activities may reduce environmental impacts of future SFP leakage. (0286-116 [Curran, Diane])

**Comment:** NRC must assess the efficacy of mandatory groundwater monitoring for minimizing the environmental harm of any future SFP leaks. (0286-117 [Curran, Diane])

**Comment:** The EIS Must Analyze In-Depth the Impact of Decommissioning Activities on SFP Leaks and Contamination that Occurs as a Result. NRC must assess the extent to which all of the matters discussed above, including the probability and environmental consequences of SFP leaks, may be affected by licensee decommissioning activities that are, or may be, undertaken during post-operation timeframes. NRC must assess (1) how future SFP leaks (and the direct, indirect, and cumulative impacts of these leaks) will affect the overall feasibility and cost of decommissioning reactor sites; (2) the impacts of any residual SFP leak contamination that may be left unremediated after decommissioning; and (3) the extent to which decommissioning actions are relevant to the consideration of potential mitigation measures. (0286-120 [Curran, Diane])

**Comment:** The EIS must consider the probability and consequences of spent fuel pool leaks and fires occurring under each of its scenarios. (0286-15 [Curran, Diane])

**Comment:** In assessing the comparative radiological risk posed by alternative options for storing spent nuclear fuel or high level radioactive waste, the proposed EIS should give special attention to the potential for radioactive release from stored spent nuclear fuel as a result of a pool fire or a cask fire. (0286-34 [Curran, Diane])

**Comment:** In assessing the potential for radioactive release from stored spent nuclear fuel as a result of a pool fire, the proposed EIS should rely on an updated, transparent, fully published body of analytic and empirical investigation that adequately describes all relevant phenomena, including: (i) the dynamics of cladding self-ignition across a range of water-loss and fuel-loading scenarios; (ii) propagation of exothermic reactions between fuel assemblies; (iii) hydrogen generation; (iv); heat generation; and (v) atmospheric release of radioactive material. (0286-36 [Curran, Diane])

**Comment:** In assessing the potential for initiation of a pool fire at a given facility, the proposed EIS should account for factors including: (i) the potential occurrence of a range of conventional accidents or attacks at the facility; (ii) a range of water-loss and fuel-loading scenarios; and (iii) the potential occurrence of degraded-site conditions due to an incident at an adjacent facility. (0286-37 [Curran, Diane])

**Comment:** The NRC's EIS must analyze in-depth the probability that densely packed spent fuel pools at reactor sites will leak toxic radionuclides to the environment following the cessation of plant operations. (0286-43 [Curran, Diane])

**Comment:** The EIS must analyze in-depth the probability of future spent fuel pool leaks in light of the established practices that challenge and prevent full and timely detection of such leaks. (0286-44 [Curran, Diane])

**Comment:** The EIS must undertake a comprehensive, in-depth assessment, with due consideration of site-specific factors, of the probability of spent fuel pool leaks during post-operation on-site storage of spent nuclear fuel. (0286-45 [Curran, Diane])

**Comment:** The EIS must analyze the full range of potential consequences stemming from the probability that densely packed spent fuel pools at reactor sites will leak toxic radionuclides to the environment after cessation of plant operations. (0286-46 [Curran, Diane])

**Comment:** With respect to spent fuel pool leaks, determining the probability of future leaks clearly necessitates a consideration of site-specific factors. To begin with, special consideration must be afforded to spent fuel pools that have already leaked. With respect to any known incidents of spent fuel pool leakage, the circumstances surrounding such leakage, the licensee and NRC response to such leakage, the adequacy of any such response, the current and likely future status of such leakage, and other such issues must be analyzed before determining the likelihood of future leakage from these spent fuel pools. (0286-58 [Curran, Diane])

**Comment:** In addition, other site-specific factors must also be considered in order to assess the probability of future spent fuel pool leaks at nuclear power plants. This includes the impact of natural disasters (i.e., earthquakes, hurricanes, floods, etc.) on the integrity of spent fuel pools, and the probability that any such events may create or exacerbate existing spent fuel pool degradation and leaks. Such impacts must take into account current information regarding seismicity in regions where nuclear power plants are located, as well as the most current scientific knowledge regarding sea level rise and other impacts of climate change, including the increased frequency of severe weather events that result in storm surges, flooding, and extended power outages that could compromise safe storage of spent fuel at reactor sites. Site-specific review related to these kinds of external circumstances is necessary since new information reveals such issues can be problematic and since different regions in the U.S. face different geological conditions and weather patterns. (0286-59 [Curran, Diane])

**Comment:** With respect to the environmental impacts of pool fires, the Waste Confidence EIS should also take into account the lessons that have been learned from the Fukushima accident regarding the potential for and consequences of spent fuel pool fires, which the NRC is still evaluating. (0286-6 [Curran, Diane])

**Comment:** Mitigation of long-term spent fuel storage and pool fire risks....the choice of storage modes for spent fuel and high level waste could have significant implications with respect to the risks they pose. For instance, the EIS should consider placement of spent fuel or high level waste below ground level. In addition, the potential for pool fires could be effectively eliminated by eliminating high-density storage of spent fuel in pools. Storage casks could also be protected from attack by using robust design. As Dr. Thompson recommends, a range of storage scenarios should be considered in order to help assess the comparative radiological risk posed by alternative options for storing spent fuel or high level waste. (0286-9 [Curran, Diane])

**Comment:** Risk of pool fires, of course, must be considered in the EIS. Given the catastrophe of Fukushima Daiichi, preventing the release of Cesium-137 is necessary and crucial to the safety of the public and the surrounding environment. Most US pools already contain several times more high-level radioactive waste than Fukushima Daiichi, so the catastrophe potential is more acute and widespread. (0289-2 [Lambert, Gwen])

**Comment:** It should include an assessment of overfilling of highly radioactive irradiated nuclear fuel pools. (0293-2 [Karpen, Leah])



**Comment:** 3rd, Make sure that every used fuel pool has electrical backup in the event of loss of off site electricity. (0295-3 [Larson, Dennis])

**Comment:** Site specific Cumulative impacts of spent fuel pool leaks, i.e. 40% of the spent fuel pools at Indian Point 2 have not been inspected despite historic, current and ongoing leaks of radioactive effluent into the groundwater which are leaching into the Hudson River, on which a public drinking water desalination plant is being considered 3 miles down river. (0296-13 [Shapiro, Susan])

**Comment:** Site Specific Cumulative impacts of potential spent fuel pools fires, based on increased density of spent fuel pools; and prior modifications by exemptions, exceptions and relaxations of Appendix R and 805 fire regulations. (0296-14 [Shapiro, Susan])

**Comment:** Failure to include in scope site specific spent fuel pool leaks, which have considerably different environmental and public health impacts depending on the current condition of the spent fuel pools, including known or undetected spent fuel leaks; site specific conditions, such as geology and seismology; public drinking water supplies; and monitoring; does not meet the specific deficiencies identified by the Court. (0296-6 [Shapiro, Susan])

**Comment:** Failure to include in scope site specific consequences of spent fuel fires are considerably unique depending on the fire protection exemptions granted per each reactor site, the proximity of gas pipeline or other flammable infrastructure, and the evacuation time estimates related to current and projected population densities, does not meet the specific deficiencies identified by the Court. (0296-7 [Shapiro, Susan])

**Comment:** I am interested in the potential impacts of the higher density storage on the Zircaloy cladding of the irradiated fuel rods, particularly of those rods that have been submerged in the pool for a decade or longer -- including impacts on the Zircaloy both under normal and accident conditions. Could the increased heat load and other changes cited above (in Question 13) cause accelerated rates of oxidation and disintegration of the reactive zirconium metal cladding? Is the NRC predicting an increased buildup-of zirconium dioxide, a faster rate of hydrogen generation, and other conditions that could lead to swelling or even the rupture of the thin cladding metal. (0300-4 [Drey, Kay])

**Comment:** In order to ensure adequate spacing between the fuel assemblies, to prevent a criticality accident, and to provide the requisite natural convective cooling, the geometry of the pool components must be carefully assessed -- for example, the size of the space remaining inside the pool (at the edges and at the bottom level). Because the racking density could affect the cladding temperature and other heatup characteristics of the stored fuel, the proposed reracking will no doubt generate increased concern about a potential accident. (a) What contingency plans have been designed in the event of leakage or the accidental drainage of coolant from the fuel pool, or other postulated accident conditions, including the loss of offsite power? (b) Would adequate coolant be available from the reactor water makeup system or other sources to keep the fuel rods covered, and thus prevent a meltdown?! (0300-5 [Drey, Kay])

**Comment:** Third, currently there are leaks at Hatch, Georgia, Indian Point, New York, and Davis-Besse, Ohio. These leaks have not been remedied and will cause unknown harm. (0315-2 [Pirch, Charlotte])

**Comment:** In a related action, in May 2012 the NRC released the report, "Identification and Prioritization of the Technical Information Needs Affecting Potential Regulation of Extended Storage and Transportation of Spent Nuclear Fuel" (ML12130A189). Comments were due on July 2, 2012. This report is important to the WC EIS in that it is a technical evaluation of the long-term use of dry casks, including an analysis of technical needs and knowledge gaps. This is especially important as the risk to the environment and human health would stem from accidents or leaks from the long-term use of dry casks or long-term pool storage. The foundation of assurance (that waste can be safely stored on-site) is the long-term performance of the dry casks. Without a complete technical evaluation of the dry casks, we have no idea whether they will perform as expected for another 50 years, 100 years or an indefinite period of time. (0321-21 [Mahowald, Philip R.]

**Comment:** As we understand it, there are some very serious potential issues associated with the long-term storage of highburn-up fuel, such as embrittlement, stress corrosion cracking, delayed hydride cracking, metal fatigue and other types of degradation that could compromise cladding integrity and structural integrity of cask components that have yet to be resolved. Will the NRC's generic EIS assume that all pools and casks contain high burnup fuel? (0321-5 [Mahowald, Philip R.]

**Comment:** We fail to see how pool leaks (resulting from long-term spent fuel storage) can possibly be evaluated generically. The risks and consequences of pool leaks will be different for each site, depending upon a number of factors, including local hydrology, depth to groundwater, proximity to surface waters, and the use of ground or surface waters as a community water supply (i.e., risk to human health). These very site-specific issues cannot be evaluated generically. (0321-8 [Mahowald, Philip R.]

**Comment:** Again, the consequences of a spent fuel fires will be different for each site, depending on the type of fuel used, whether there are properly trained responders, potential radiological releases, the populations near the plant, and resultant economic impacts from the radiological releases (from the spent fuel fire). (0321-9 [Mahowald, Philip R.]

**Comment:** The NRC's current data and analyses of spent fuel pool fire risks are completely inadequate to satisfy NEPA.

NEI claims that the NRC "has previously compiled numerous technical studies regarding the risks and environmental impacts of onsite spent fuel storage that it can rely on in assessing both the probabilities and consequences of spent fuel pool fires." NEI Comments at 10. As Dr. Thompson points out, however, the NRC has not published any study regarding spent fuel pool hazards for over ten years, and none of its prior studies meet the standards for an EIS. While the NRC claims to have performed some studies since then, they are classified or otherwise withheld from public disclosure. And the NRC has even lost track of its classified studies. A recent Government Accountability Office report stated, for example, that:

Because a decision on a permanent means of disposing of spent fuel may not be made for years, NRC officials and others may need to make interim decisions, which could be informed by past studies on stored spent fuel. *In response to GAO requests, however, NRC could not easily identify, locate, or access studies it had conducted or commissioned because it does not have an agencywide mechanism to ensure that it can identify and locate such classified studies.* (citing GAO-12-797, Spent Nuclear Fuel: Accumulating Quantities at Commercial Reactors Present Storage and Other Challenges (August 2012) (emphasis added)). Thus, even if the

NRC has done significant analyses of spent fuel pool fire risks, it has neither kept good track of them nor published any reports with the level of information and accountability required by NEPA. Under the circumstances, the NRC has significantly more work to do before it can claim to satisfy NEPA's requirement of providing enough information to "give the public the assurance that the agency 'has indeed considered environmental concerns in its decision-making process.'" Robertson, 490 U.S. at 349 (quoting *Baltimore Gas & Electric Co. v. NRDC*, 462 U.S. 87, 97 (1983)). Moreover, the NRC's secrecy regarding spent fuel pool fire risks is both unnecessary and counter-productive. (0322-6 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** NEI argues that the NRC already has collected a significant amount of data on the effects of spent fuel pool leaks, and concluded that such leaks will not result in significant environmental impacts. According to NEI, the NRC staff should use the existing information to the extent possible and bolster it with new analyses only as necessary. Moreover, the staff need not utilize "worst case" assumptions in this analysis.

NEI's arguments, however, flout the mandate of the D.C. Circuit Court of Appeals. As the Court explained, the agency's existing studies are inadequate because they rely on studies of past leaks. As the Court observed, "the harm from past leaks - without more - tells us very little about the potential for future leaks or the harm such leaks might portend." 681 F.3d at 481. The Court also found inadequate the NRC's assertions regarding "untested" prospective regulatory improvements to spent fuel pools, and existing monitoring and compliance programs that are "in no way sufficient to support a scientific finding that spent-fuel pools will not cause a significant environment (sic) impact during the extended storage period." Because of these shortcomings, the Court ordered the NRC to undertake a new, forward-looking analysis.

In order to comply with the Court's order, as outlined in Mr. Musegaas's Declaration, the NRC's environmental analysis should, among other things: assess the impact of new seismological information on the probability of SFP leaks and on the environmental impacts that may occur as a result; assess potential long-term impacts of SFP leaks on adjacent aquatic ecosystems, independent of NRC's regulatory framework related to dose consequences; and assess cumulative impacts of SFP leaks in addition to other rampant radiological leaks from other components. Musegaas Declaration at 9-17. In addition, the EIS should examine an array of mitigation measures, including immediate clean-up, mandatory comprehensive groundwater monitoring, measures to prevent initiation or exacerbation of future leaks, preventative measures to proactively prevent future leaks from non-spent-fuel-pool components, and measures to mitigate impacts to aquatic ecologies in adjacent affected waterways.

NEI's Comments also inappropriately presuppose that the probability and consequences of future SFP leaks pose "low risks." NEI Comments at 9. This cuts off the analysis at the knees. NRC must undertake its EIS without such an assumption, and without narrowing the focus to existing conclusions about the probability and risks of SFP leaks. (0322-7 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** Overcrowding of irradiated fuel assemblies. Most spent fuel pools at U.S. reactor sites contain five times or more the quantity of irradiated fuel assemblies the fuel pools were designed to hold. The higher density causes higher risks, especially if the cooling water were to drain down and uncover the fuel assemblies. The uncovered rods could self-ignite and cause colossal releases of radioactivity --- endangering human lives, and contaminating food crops, animals, water and air for hundreds of miles and generations to come. (0323-1 [Birnie, Patricia T.]

**Comment:** Necessity of requiring off-site emergency power for all spent fuel pools. Cooling water must be constantly provided to the spent fuel pools. Pumps providing fresh cooling water require electricity to operate. Diesel power can provide short term emergency electrical power, but is not a long term solution. Nuclear power owners should be required to ensure an adequate off-site source of electricity for continuous pump operation in case of loss of power, or in case of the failure of submersible pumps for those fuel pools that are in flood plains, or are subject to tsunamis, or are downstream from vulnerable dams. (0323-2 [Birnie, Patricia T.]

**Comment:** We urge you to include the following comments on...reactor aging problems. Because of spent fuel pool aging, the use of unproven materials and designs in the initial construction, and inadequate maintenance, some fuel pools have leaked and have released radioactive water into the river, lake or ocean, the sources of their cooling water, and into the ground water. Spent fuel pools must be monitored until they are emptied and dismantled. (0323-6 [Birnie, Patricia T.]

**Comment:**

The analysis of external events should address the potential for and impacts of fuel pool fires, as identified by the D.C. Circuit Court (New York v. NRC, 681 F.3d 471 (D.C. Circuit 2012)). Presently the majority of spent nuclear fuel is stored in spent fuel pools in high density configuration. Through either accident or deliberate act, there is the potential for loss of coolant and potentially fire. If a fire were to occur, it is possible that spent fuel in the pool would combust and disperse radioactive particulate matter. (0325-6 [Bromm, Susan E.]

**Comment:** We also recommend the draft EIS discuss the likelihood of maintaining pool storage for extended periods after cessation of plant operations. While some period of pool storage will be necessary, it seems likely that dry cask storage will be predominant over the longer time periods considered in the analysis. The U.S. Nuclear Waste-Technical Review Board (NWTRB) report on "Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel" (December 2010) is a valuable source of information independent from NRC that can be used to guide the analysis of external events. Use of the event list developed by a credible independent source would raise level of credibility of the SNF EIS under development. EPA suggests analyzing normal, off-normal events and accidents (i.e., manmade and natural events) as they were identified in this report. (0325-7 [Bromm, Susan E.]

**Comment:** Radioactivity leaks from storage pools - into soil, groundwater, and surface waters - should also be included in the EIS scope. After all, leaks from pools have already occurred at more than a half-dozen nuclear sites across the U.S., such as from Indian Point into groundwater which then flows into the Hudson River, not far upstream from New York City. (0326-11 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** I submit this comment to urge that NRC consider the findings and conclusions contained in a comprehensive report on the risks of fires in high-level radioactive waste storage pools causing catastrophic radioactivity releases.

"A 1979 study done for the NRC by the Sandia National Laboratory showed that, in case of a sudden loss of all the water in a pool, dense-packed spent fuel, even a year after discharge, would likely heat up to the point where its zircaloy cladding would burst and then catch fire. This would result in the airborne release of massive quantities of fission products."

"...the property losses from the deposition downwind of the cesium-137 released by a spent-fuel-pool fire would likely be hundreds of billions of dollars." (0331-1 [Kamps, Kevin])

**Comment:** I submit this comment to urge that NRC consider the findings and conclusions contained in a comprehensive report on the risks of fires in high-level radioactive waste storage pools causing catastrophic radioactivity releases.

"A 1997 study done for the NRC estimated the median consequences of a spent-fuel fire at a pressurized water reactor (PWR) that released 8-80 MCi of [Cs-137]. The consequences included: 54,000-143,000 extra cancer deaths, 2000-7000 km<sup>2</sup> of agricultural land condemned, and economic costs due to vacuation of \$117-566 billion. This is consistent with our own calculations using the MACCS2 code. It is obvious that all practical measures must be taken to prevent the occurrence of such an event." (0331-2 [Kamps, Kevin])

**Comment:** Alvarez has stated that as much as 10 times the Cs-137 released by the Chernobyl catastrophe is contained in Fukushima's Unit 4 pool. Arnie Gundersen of Fairewinds has estimated that Fukushima has unleashed half the Cs-137 of Chernobyl. Thus, a pool fire at could dwarf 2011's releases. (0335-2 [Kamps, Kevin])

**Comment:** In evaluation of fuel pool leaks, NRC must include an assessment of impact on so-called "low-level" radioactive waste types and volumes assuming complete exhumation of contaminated soil. (0285-12 [D'Arrigo, Diane])

## 11. Comments Concerning Accidents

**Comment:** The NRC must resolve many technical issues including...the potential for accidents; and lessons learned from Japan's devastating 2011 Fukushima Daiichi meltdown. (0001-4 [Anonymous] [Butler, Edward] [Evans, Michael W.] [Flowers, Bobbie] [Gilbert, Valerie] [Levey, Laura] [Malina, Matt] [Neiman, Laura] [Puca, Rob] [Richkus, John] [Tignanelli, Doreen] [Valentine, Jennifer] [Varekamp, Patrick])

**Comment:** There's not going to be time to think through what happened at Fukushima -- what happened with those fuel pools. And then there's the local situation right here in South Carolina where we have three nuclear power plants. Oconee and a series of dams. What happens if one fails? They also have earthquakes in that area. Not big ones, but big enough to destroy a dam. (0004-17-2 [Thomas, Ruth])

**Comment:** When it comes to using nuclear fission people leave out the fission in it these days. Human error, flooding, the weather, whether maintenance is maintained perfectly, all of these things. What does the Nuclear Regulatory Commission call them? Abnormal occurrences and unusual events. Any kind of thing, small is going to have an impact, but yet in the environmental impact statements the connection isn't being made between the conclusions and statements and rulings that they make and actual evidence, reality, what is going on, what has gone on at Fukushima. This is being rushed through until there isn't going to be time if they have their way, whoever you are. (0004-17-3 [Thomas, Ruth])

**Comment:** We've seen in Fukushima, you know, what happened with the Mark I design. It's not a very stable design. (0004-18-2 [Fuchs, Katherine])

**Comment:** There's another big issue with this facility, which is, it also has the defective hardened vents in the Mark 1 reactors of the Fukushima type, and my understanding is that at Fukushima, all three hardened vents failed, and that's why the reactor buildings blew up. And what's going to happen at Browns Ferry if we get into an overpressure situation and the hardened vent fails there? We're going to have a disaster like Fukushima. We think that the fuel pools should be moved off the top of those dangerous reactors, which are of poor design, and that dry cask storage should be utilized instead of the fuel pools. (0004-26-2 [Horn, Stewart])

**Comment:** And I think that Fukushima Daiichi Unit 4, which was an earthquake and a tsunami that caused that catastrophe, shows that Unit 4 -- that pools, in that case a Mark I General Electric boiling water reactor, are vulnerable to such things as explosions. The Unit 4 reactor was not operating on March 11th, 2011, when catastrophe struck, but, in fact, an explosion took place there. And that building -- the entire reactor building and the pool that it contains are at risk of total collapse to this day if a big enough earthquake hits that site. An earthquake of magnitude 7.0 perhaps would be enough to collapse that building. The pool water would be lost, and the waste would catch on fire and release its contents directly into the environment, and the radioactive cesium-137 contents of that pool are 10 times the amount of cesium-137 that was released by the Chernobyl catastrophe. So it's a very serious matter, so certainly natural disasters could unleash such catastrophes. (0005-5-11 [Kamps, Kevin])

**Comment:** I am asking that the NRC first resolve the many technical issues, including long-term waste integrity, vulnerability and deterioration; the potential for accidents; and lessons learned from Japan's devastating 2011 Fukushima Daiichi meltdown before moving forward with any EIS, or at the very least, including the above items in any EIS drafted. (0021-1 [Zigmund, Sean])

**Comment:** As we have witnessed in the Fukushima incident, storage pools are very vulnerable to natural disasters. Even though the D.C. Circuit did not require site-by-site examination, different designs and locations of nuclear plants can produce very different consequences for natural disasters. The Commission should account for these differences. The Commission also needs to pay careful attention to terrorist attacks, human errors, and equipment malfunction. (0038-3 [Goze, Yunjoo])

**Comment:** It is beyond my scope of imagination that this risk [of a Fukushima-type disaster] has been so grievously ignored as our government fights the war on "terror" at astronomical expense while it is a fact that every US citizen within an undetermined radius of any domestic or foreign nuclear power site is at risk of a radiological terror that will never end. (0055-5 [Enebo, Karin])

**Comment:** Luckily only a few nuclear plants went off-line due to the storm [Sandy]. Many residents were without power weeks after the storm. Cell phones worked spottily. I question how emergency resources will do their work adequately in an emergency as suffered by Fukushima. The SERs which I have read are lacking in the ability to view emergency procedures in the light of what has happened at Fukushima. What can anyone do without power on site or off-site? Will the coolant flow be sufficient to handle fuel pool cooling? Will the handling equipment be sufficient to all tasks, such as righting overturned spent fuel storage casks and HOSS casks due to flood waters? (0056-2 [Lewis, Marvin])

**Comment:** All possible lessons that can be learned from the Fukushima disaster must be applied to this review, so as to spare us from similar horror. (0061-3 [Eilenberg, Alisa])

**Comment:** The precarious situation at Fukushima Daiichi Unit 4 --where a 7.0 earthquake could cause the complete collapse of the reactor building -- risks 135 tons of irradiated fuel catching fire, and releasing ten times the radioactive cesium-137 as was released by the Chernobyl nuclear catastrophe, directly into the environment. This would dwarf the radioactivity released thus far by the Fukushima nuclear catastrophe. But pools at most U.S. atomic reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4, meaning the potential catastrophes downwind, downstream, up the food chain, and down the generations would be even worse here in the event of a pool fire, whether caused by a sudden drain down (due to an earthquake, heavy load drop, terrorist attack, etc.) or a slower motion boil down (due to loss of off-site electricity, whether due to a natural disaster such as a hurricane, an intentional attack, a reactor accident causing abandonment of the nuclear power plant site, etc.). (0062-9 [Jessler, Darynne])

**Comment:** The precarious situation at Fukushima Daiichi Unit 4 --where a 7.0 earthquake could cause the complete collapse of the reactor building -- risks 135 tons of irradiated fuel catching fire, and releasing ten times the radioactive cesium-137 as was released by the Chernobyl nuclear catastrophe, directly into the environment. This would dwarf the radioactivity released thus far by the Fukushima nuclear catastrophe. But pools at most U.S. atomic reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4. (0065-6 [Collecchia, Geri])

**Comment:** ...most U.S. atomic reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4, meaning the potential catastrophes downwind, downstream, up the food chain, and down the generations would be even worse here in the event of a pool fire, whether caused by a sudden drain down (due to an earthquake, heavy load drop, terrorist attack, etc.) or a slower motion boil down (due to loss of off-site electricity, whether due to a natural disaster such as a hurricane, an intentional attack, a reactor accident causing abandonment of the nuclear power plant site, etc.). (0068-8 [Sheridan, Paul])

**Comment:** Pools at U.S. atomic reactors have more high-level radioactive waste than Fukushima Daiichi Unit 4, so catastrophe would be even worse here. (0072-9 [Shuput, Steve])

**Comment:** First, 'single failure criterion' has failed at Fukushima. SFC assumes that, if a structure or part fails on the chain to a above class C accident, only one more safety related part or structure may be assumed in calculations to fail. Many safety related parts or structures failed, and Fukushima experienced an 'greater than class c' accident. I request that 'greater than class c' accident scenarios be recalculated without the assumption of single failure criteria and published before any licenses issue. (0087-2 [Lewis, Marvin])

**Comment:** The reasons that recent changes may result in an increase in the severity of an accident are several and cumulative. The fuel pools have been designed to earthquake standards which considered outdated data. Recent earthquake experience, like Fukushima and Virginia, demonstrate earthquake data not seen previously. Fukushima is the first experience where 2 different tectonic plates moved simultaneously far from each other. The earthquake at a Virginia NPP was small, but in a location which appeared safe from earthquakes. The stacking in fuel pools needs to survive earthquakes. If the earthquake data is outdated, the risk of stacking failure increases. Increased chance of criticality in the spent fuel results from stacking failure due to designs based on outdated data. (0087-4 [Lewis, Marvin])

**Comment:** High Level Radioactive Waste storage pools, as shown by the Fukushima Daiichi disaster, are very dangerous. (0105-3 [Hoodwin, Marcia])

**Comment:** Particularly in light of the ongoing disaster at Fukushima Daiichi, it would serve the USA and the citizens to take a good hard look at possible consequences, safety regulations, inspection and maintenance, and environmental impacts from any deviation from normal operations. (0106-2 [Maiorca, Michelle])

**Comment:** Even if the probabilities for harm are "low," the happening of one unexpected disaster can have substantial ramifications; Fukushima is the most recent and prime example. (0107-7 [Fredrickson, Amy])

**Comment:** Be THOROUGH -- We learned a lot of lessons from the 2011 Fukushima Daiichi meltdown--Use what was learned from this horrific occurrence. (0111-2 [Evans, Patricia])

**Comment:** Of course NRC's Fukushima Task Force has recommended make up water, but that would still allow for boiling in the first place. And, granted, all of these proposals have to be done carefully. Mary Lampert pointed out the list of over filling the pool and flooding the basement where their safety system is located. So there have to be safeguards. Another 2.206, petition demands that we've made that has again not found any traction at NRC as to require, by regulation, and require enforcement, enforce those regulations, such basic safeguards on pools as water level monitors, gauges, temperature gauges and monitors. Radiation monitors and I say this because of the lessons that should be learned from Fukushima where in the first days and even weeks of that accident, it was very unclear what the situation in the pools was. And even to this day, that remains to be the case. Was Pool Number 4, Fukushima Daiichi empty and on fire? I think the Jury is still out on that. Was a section of that pool on fire because there are walls in pools that subdivide the pool. Of course the confusion over whether there was water present led to the drastic action of trying to drop seawater by helicopter into the pools. Which, again, depending on the circumstances the seawater drop could have knocked out safety systems. They were already knocked out of course, but just basic safeguards are lacking at the present time. We've tried to rectify this through the 2.206 process. We've been stonewalled by NRC up to this point. So I would ask the scope to include all of these issues, thank you. (0118-9-6 [Kamps, Kevin])

**Comment:** Lesson from Fukushima: The earthquake and tsunami at Fukushima caused extensive damage at the site. As the resulting accident proceeded, hydrogen explosions produced further damage. Plant operators and other personnel were obliged to work in a highly disturbed environment where many items of equipment were non-functional and many parts of the affected plants were inaccessible. Operators encountered high radiation fields, high temperatures, smoke, debris, and steam. Supplies of electrical power and fresh water were interrupted for long periods. It does not require an earthquake or tsunami for a reactor like Pilgrim (a carbon-copy of the Fukushima reactors) to fail. Failure can occur from extreme natural events, acts of malice, loss of electrical power, serious design flaws, human error, dropping casks, lack of regulatory oversight and overconfidence. (0148-12 [Lampert, Mary])

**Comment:** Further, the MACCS2 consequence tool approved by NRC for consequence analyses is flawed and clearly outdated post-Fukushima, and until the NRC modifies its cost-benefit analysis guidelines to incorporate lessons learned from Fukushima before using such an analysis to assess the environmental impacts of spent fuel storage, NRC's EIS must place heavy reliance on defense in depth. (0148-38 [Lampert, Mary])



**Comment:** I understand that the NRC Commissioners soon will vote on whether or not to require filters and rupture discs on vents used to relieve pressure from containments in a severe accident in reactors designed and manufactured by General Electric.

These Mark I and Mark II reactors demonstrated their vulnerability to such accidents at Fukushima in March 2011. These reactors suffer from serious and fundamental design deficiencies, provide only a small amount of the nation's electricity, and should be permanently closed.

But nearly two years after Fukushima, the NRC has done nothing to enhance the safety of these reactors. In a severe accident the amount of radioactivity released offsite from an unfiltered vent would be very large and damaging. It makes no sense not to add a filter to protect our families and property from contamination. Filtered systems are available, tested and in use today--for example in Sweden, Germany, France, Switzerland and will be installed in Japan. We shouldn't have to learn the hard way, as did Japan, the danger of not requiring filters and rupture discs before the accident. As part of the Fukushima Lessons Learned Task Force, the NRC Staff recommended such filtering. It only made sense when considering that during normal operations and design-basis accidents gaseous releases are filtered but they are not filtered during severe accidents when the releases offsite would be the greatest. But the nuclear industry has been lobbying against this common-sense measure.

I urge the NRC Commissioners to act to permanently close these dangerous reactors. Short of that, I urge the Commissioners to make a statement that public safety is indeed important, and require installation of these filtered vent systems. (0156-1 [Yeatts, Jordan])

**Comment:** The precarious situation at Fukushima is an example of something we need to take every possible precaution against. (0194-3 [Selquist, Donna])

**Comment:** The problems with spent fuel storage experienced during and after the Fukushima earthquake should be considered. The EIS should include specifics on the methods used to monitor for and purge hydrogen from fuel storage areas. Firefighting systems should also be evaluated. The scope of the EIS should specifically address past problems with the Fukushima storage areas and K-basins to demonstrate mitigating actions to preclude similar problems. (0246-4 [Kohler, Joseph])

**Comment:** NRC could take immediate action to dramatically increase safety for all nuclear reactors in the nation and correct this neglected post-Fukushima safety measure by doing the following: Requiring reactor owners to begin to restore spent fuel pools to their original design capacity for fuel rods by moving them to HOSS storage under rapid phased scheduling. Fuel rods older than 5 years should all be removed from pools. (0269-26 [Warren, Barbara])

**Comment:** NRC could take immediate action to dramatically increase safety for all nuclear reactors in the nation and correct this neglected post-Fukushima safety measure by doing the following: Require extra dry casks at each nuclear reactor for emergency needs to move fuel rods. (0269-27 [Warren, Barbara])

**Comment:** Included in this should be lessons learned from the recent Japanese disaster, where drain downs and fires were concerns, or a host of other scenarios. Further, the Scoping Notice should engage in similar set of analysis with respect to dry storage, contrasting the

environmental impacts of radioactive releases and health consequences from a disruption of current dry storage, fuel pools and "hardened" dry storage. (0271-23 [Fettus, Geoffrey])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: lessons learned from Fukushima and their implications for extended spent fuel storage and transportation. (0272-12 [Weisenmiller, Robert B.]

**Comment:** NRC must include the real-world cases at Fukushima: Melted fuel melting through the reactor vessel and potential for continued cooling BWR with structural damage creating potential for pool failure with no cooling option. (0285-9 [D'Arrigo, Diane])

**Comment:** For example, the NRC's receipt of post-Fukushima seismic geologic data and analyses regarding seismic risks to nuclear reactor and spent fuel storage sites is crucially important to a host of issues that must be addressed in the Waste Confidence EIS. Under the schedule established by the NRC Staff in a March 2012 Request for Information, reactor licensees are not due to supply this information until September 2013 for reactor sites in the eastern and central U.S. and March 2015 for western reactor sites... Given the significant role played by seismic events in accidents ranging from spent fuel pool leaks to pool fires and their potential effects on long-term storage sites, this information is crucial to the NRC's ability to take a "hard look" at all three topics remanded by the Court. (0286-5 [Curran, Diane])

**Comment:** Lessons from Fukushima. The EIS should, to the extent it can at this early date, draw lessons and understandings from Fukushima. This is especially true as it relates to spent fuel located within pools and the potential for fire of the same. The EIS should not only consider causation but should focus on the remedial or mitigation efforts following the event. It should examine this in light of the current emergency response plans as well as any emergency response plans that are going to be in place following the cessation of electrical production at the nuclear power plants. (0291-19 [Harlan, Thomas])

**Comment:** It is my personal belief that, given the natural disaster-triggered events at Fukushima and the vulnerabilities of many of our reactors in this country, located on faults and near rising sea & river level flood zones under rapidly changing climatic conditions, the precautionary principle would halt any additional production of nuclear waste until the unsolved problem of what to do with it is resolved. (0307-2 [Shaw, Sally])

**Comment:** Second, the risks of the GE Mark I reactor high-level storage pools after the failure of Fukushima Daiichi failure. (0315-1 [Pirch, Charlotte])

**Comment:** The risks of pool fires must be considered in this EIS. The precarious situation at Fukushima Daiichi Unit 4 -- where a 7.0 earthquake could cause the complete collapse of the reactor building -- risks 135 tons of irradiated fuel catching fire, and releasing ten times the radioactive cesium-137 as was released by the Chernobyl nuclear catastrophe, directly into the environment. This would dwarf the radioactivity released thus far by the Fukushima Nuclear catastrophe. (0326-9 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** I'm speaking to this morning 11 miles from the confluence of the most active earthquake fault surrounding any reactor here at Diablo Canyon. We're looking ahead now at issues that need to be dealt with in one or two centuries, if you look at your early chart, going forward now 100 to 200 years, and I can tell you there are certainly sections of this coast of

California that have been reclaimed by the Pacific Ocean in the last century, and as mother nature proceeds, is likely to reclaim much more of California's coast on which these two reactors sit within half a mile of the Pacific Ocean. So, to say that you can divorce these geologic uncertainties in a generic fashion wouldn't be prudent, and recall, even in the case of the Mineral, Virginia earthquake, in that case where the hazard had been underestimated was the spent fuel cask that suffered the most visible damage in that event. (0004-15-3 [Weisman, David])

**Comment:** So those are lessons to be learned across the country regarding floods, but I think that with the climate crisis, with rising sea levels, coastal reactors, varied location should be taken into account with worsening hurricanes, worsening storm surges that could implicate not just the dry casks but also the pool cooling mechanisms. I think seismic risks should be seriously considered within the scoping of this proceeding because we saw in August 2011 significant damage to the dry cask storage at North Anna Nuclear Power Plant just 11 miles from the epicenter of the earthquake. There was concrete damage on the surface to the dry casks. There was movement of the vertically oriented dry casks several inches in the earthquake. There was movement of the panels on top of the horizontally oriented dry casks. That damage, that movement of the concrete is very safety significant because that concrete serves as radiation shielding for the gamma radiation that is streaming off the inner canisters at lethal levels. So the seismic risks, the flooding risks, the risks of rising sea levels should be within the scope of this proceeding. (0005-7-3 [Kamps, Kevin])

**Comment:** Dry casks have also suffered many accidents, such as hydrogen explosions, inner seal leaks risking fuel rod corrosion and radioactive gas leaks, as well as seismic damage. (0062-13 [Jessler, Darynne])

**Comment:** Dry casks have also suffered many accidents, such as hydrogen explosions, inner seal leaks risking fuel rod corrosion and radioactive gas leaks, as well as seismic damage. (0067-6 [Kammerer, Greg])

**Comment:** Dry casks have also suffered many accidents, such as hydrogen explosions, inner seal leaks risking fuel rod corrosion and radioactive gas leaks, as well as seismic damage. (0068-12 [Sheridan, Paul])

**Comment:** Dry casks have also suffered many accidents, such as hydrogen hydrogen explosions, inner seal leaks risking fuel rod corrosion and radioactive gas leaks, as well as seismic damage. (0072-12 [Shuput, Steve])

**Comment:** Seismic risks to dry cask storage must be included in the EIS. This was shown to be important by the Palisades' violations of NRC earthquake safety regulations and damage done to North Anna's dry cask storage by the August 23, 2011 earthquake. (0148-30 [Lampert, Mary])

**Comment:** Seismic risks to dry cask storage must also be included in the EIS. (0187-4 [C, John])

**Comment:** Seismic risks to dry cask storage – such as Palisades' violation of NRC earthquake safety regulations, as well as the damage done to North Anna's dry cask storage by the August 23, 2011 earthquake – must also be included in the EIS. (0189-6 [Valtri Burgess, Vivian])

**Comment:** Dry casks have also suffered many accidents, such as hydrogen explosions, inner seal leaks risking fuel rod corrosion and radioactive gas leaks, as well as seismic damage. (0207-4 [Harris, Deborah W.]

**Comment:** The EIS must consider seismic risks to dry cask storage. (0242-13 [Agnew, David])

**Comment:** Identify which nuclear reactors are in the most dangerous locations: near active earthquake faults, below dams that could flood the reactor site, ones sited near high population areas, etc. Casks from these sites should be moved to the safest reactor sites. (0295-4 [Larson, Dennis])

**Comment:** Site specific geology, specifically site specific seismology risks to dry cask storage. (0296-21 [Shapiro, Susan])

**Comment:** Seismic risks to dry cask storage - such as Palisades' violation of NRC earthquake safety regulations, as well as the damage done to North Anna's dry cask storage by the August 23, 2011 earthquake - must also be included in the EIS. (0326-14 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** In this regard, damage to containers for high-level radioactive waste in Japan due to the 3/11/11 Great Eastern Japan Earthquake would be akin to damage to dry cask storage containers for irradiated nuclear fuel at the North Anna nuclear power plant in Mineral, Virginia. On August 23, 2011, a magnitude 5.8 quake, epi-centered just 11 miles from the nuclear plant, struck. Although Dominion Nuclear told a CNN film crew on the day of or day after the earthquake, as it toured the nuclear plant site, that no damage had occurred at the dry cask storage facility, this was not true. Vertical dry casks had been shifted several inches, and horizontal dry casks suffered significant surface concrete damage. (0328-1 [Kamps, Kevin])

**Comment:** Being located on the East Coast, Pilgrim was on hurricane alert during the Hurricane Sandy event. The proposed dry cask storage that Entergy is currently building is in the coastal zone and is in the hurricane zone. This is a unique weather feature that needs to be taken into account in a site-specific EIS. (0004-23-5 [Sheehan, Margaret])

**Comment:** The geological issues, including seismology and fracking impacts must be looked at. (0004-25-9 [Shapiro, Susan])

**Comment:** Okay, and so with the latest reports from the NRC, from your department, and from the United States geological survey, had mentioned that the earthquakes on the east coast had been stronger than had originally been reported, are the considerations going to be in place too with the earthquakes, and ground movement, and that sort of thing, too, along with these proposals for nuclear waste confidence and storage? (0005-3-2 [Gray, Erica])

**Comment:** More recently at Oyster Creek, again, there are dry casks and a pool at Oyster Creek that have to be protected against floodwaters and their ravages upon system structures and components. And yet again, it was precariously close to a very dicey situation at Oyster Creek with mere inches between the floodwaters and the service water pumps that could implicate the cooling in the pool. (0005-7-2 [Kamps, Kevin])

**Comment:** A case in point is India River Nuclear Power Plant, which is so close to New York City and other urban populations. Having seen what dangerous damage unexpected natural disasters can do to nuclear installations, those in authority need to recognize their responsibility to see that these places are truly safe. (0035-4 [Bradbeer, Wilma])

**Comment:** The DEIS should list sites safe from floods, earthquakes, tsunamis and contact with ground or surface water. Could a river change its course during the time radio-active waste is harmful? If a site is a distance from the reactor whose wastes it will store, what are the hazards and costs of transporting those wastes from reactor to temporary storage? (0053-5 [Unger, Art])

**Comment:** The NRC must resolve many technical issues including...the potential for accidents. (0055-8 [Enebo, Karin])

**Comment:** Without mandatory backup generators or containment structures like that protecting reactors, loss of cooling as you well know, could lead to overheating which in turn could lead to the explosive release of more, radioactive cesium than twice that released by all atmospheric testing here to date and 40x that which was released by the Chernobyl explosion. Radioactive cesium, with a half-life 30 years, would then contaminate a huge amount of our State rendering it uninhabitable for several hundred years, and would destroy the part of our economy based on farming and fishing. Mothers and fathers would live with the fear of their children ingesting cancer causing contaminated soil and the simple act of playing outdoors would lead to nightmares just as it has for parents in Fukushima Province. (0058-8 [Dubois, Gwen L])

**Comment:** And, again, it needs to be remembered that it will take 25 to 50 years, if not longer, to move the waste there as well, is this issue if the dam breaks themselves. Another 50 or 100 years of age-related degradation and environmental stress on those dams, would certainly increase the risk of those dams failing. Of course, there's also another century of security risks to worry about at those dams, so that should be considered. (0118-17-1 [Kamps, Kevin])

**Comment:** So risks of failure during storage, failure due to such things as earthquakes, especially on the Lake Michigan shoreline, are ongoing concerns. (0118-2-5 [Kamps, Kevin])

**Comment:** Furthermore, ALL nuclear reactors must be re-examined for structural soundness under the stress of earthquake or flood, since recent 1000-year flooding, earthquakes, forest fires and volcanoes suddenly becoming active. (0129-4 [VanWicklen, Betty J.])

**Comment:** What is Diablo doing with this terrible Nuclear Waste----storing it on site next to earthquake faults. WHY DO WE PERMIT DIABLO TO EXIST ? (0192-1 [Denneen, Bill])

**Comment:** There is also significant danger in accidental spills. (0196-1 [De Falla, Susanna])

**Comment:** The second step is to make sure that the most effective technologies will be used to limit the release of radionuclides from existing storage during normal and accidental conditions (earthquakes, flood, fires, tornadoes, acts of terrorism, etc., or any combination of these). (0237-4 [Thomas, Ruth])

**Comment:** The Waste Confidence EIS should fully discuss and evaluate the effect of human factors with respect to system and component design, fabrication, operations, and response to incidents and accidents. Human error should be considered as a safety factor in routine operations, as well as a causal factor or exacerbating factor in accidents. Considering the

extended time period being evaluated for dry storage of spent fuel in welded canisters without repackaging, it is especially important to assess the potential implications of human errors in canister loading and closure; assess the need for NRC inspection of canister loading operations at reactors; and assess the need for long-term monitoring of canister performance in dry storage. (0265-14 [Halstead, Robert])

**Comment:** The Environmental Impact Statement must also consider ... the possibility of damage from earthquake, hurricane, or terrorist or other causes of drain-downs or boil-downs (such as power loss). (0269-25 [Warren, Barbara])

**Comment:** The EIS should rigorously explore all of the potential environmental impacts associated with long-term and indefinite storage of nuclear wastes at reactor sites following reactor shutdown, including... earthquakes, flooding (resulting from tidal and storm surges or infrastructure failures). (0275-9 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** Seismic Risk: It is instructive that part of the reason Nuclear Fuel Services decided NOT to reopen the reprocessing facility was the discovery of a previously unknown earthquake fault nearby which was projected to make the cost of rebuilding to accommodate the risk too much to justify continued reprocessing. Thus, unexpected natural conditions could make the projections of confidence less reliable. (0285-16 [D'Arrigo, Diane])

**Comment:** The EIS should assess the radiological risk arising from a range of conventional accidents or attacks that could affect stored spent nuclear fuel or high level radioactive waste. (0286-24 [Curran, Diane])

**Comment:** In assessing the impacts of a potential radiological incident involving atmospheric release, the proposed EIS should consider types of impact including: (i) plume exposure; (ii) ground contamination and resulting exposure; (iii) exposure via food and water pathways; (iv) health effects pursuant to total exposure; (v) abandonment of assets; (vi) cleanup costs; (vii) direct and indirect economic impacts; and (viii) social impacts. (0286-40 [Curran, Diane])

**Comment:** Impacts of increasing knowledge of active geological systems due to scientific advancements in seismology and increased man-made geological impacts, such as fracking which may increase the likelihood of earthquakes, earth movement or volcanic activity. (0296-30 [Shapiro, Susan])

**Comment:** Since the damage from Hurricane Sandy has been examined, critical problems with potential flooding of pools and even dry casks causing spread of contaminated flood waters to spread uncontrollably calls into question the criteria used to certify safety/risks of these safety measures. (0310-1 [MacDonald, Joan])

**Comment:** The current method of storing nuclear waste in cooling pools (often open to the air) leaves us all vulnerable to all kinds of potential hazards such as earthquakes, floods, Hurricanes, terrorists. (0316-1 [Lawton-Singer, Cynthia])

**Comment:** We urge you to include the following comments on...human error and human nature. Scientists can and do design elaborate technical devices that are "foolproof" and that can operate with amazing results (such as nuclear reactors). However these devices are operated by humans who are not as foolproof as human inventions. These humans sometimes fall asleep on the job, bring their addictions to work, are subject to accepting bribes, falsify required

records, and make operating substitutions that can cause reactor failure. We see no way to ensure that this human element can be eliminated. (0323-7 [Birnie, Patricia T.]

**Comment:** I am very concerned about the conditions of spent fuel at Calvert Cliffs and the potential catastrophe that could occur in our region should a loss of backup power occur. (0058-1 [Dubois, Gwen L])

**Comment:** While we appreciate that a considerable amount of fuel has been moved from the pool to dry casks, a step that should be applauded and copied by owners of nuclear power plants across this nation, there still remains a huge amount of radioactive material [at Calvert Cliffs] vulnerable to manmade and natural disasters. (0058-2 [Dubois, Gwen L])

**Comment:** Restacking [fuel pool] which the NRC has allowed to increase capacity lowers 'K', the criticality coefficient. If a criticality occurs, the temperature can rise to the point of ignition of the zirconium. The fuel pool has coolant to avoid this type of fire. Earthquakes can cause coolant flow to fail especially if designed with outdated data. Fuel pools have not been redesigned in light of the new earthquake data. NRC and licensees should take the new earthquake data into consideration before fuel pools are considered adequate by the NRC to issue licenses. (0087-6 [Lewis, Marvin])

**Comment:** The fact that currently NRC Regulations do not require back up power on the pools. They're simply connected to the grid. I don't know of any voluntary efforts by industry to provide emergency backup power to pools, for example. And that's a point we've raised in 2.206 petitions, but we have not found any traction at NRC to require emergency backup power on the pools to prevent boiling in the first place. Because, as Mary Lampert and I have pointed out, the dangers of short circuiting, safety significant systems due to the steam being released by a boiling pool. (0118-9-5 [Kamps, Kevin])

**Comment:** The waste should remain safe without relying on electricity, cooling water or a human crew. (0180-1 [Bahr, Richard])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: environmental impacts from long-term storage of densely configured SNF in pools located in earthquake and tsunami susceptible areas and the associated risk of fire. (0272-4 [Weisenmiller, Robert B.]

**Comment:** Loss of power at reactor sites (for example, from superstorms or sabotage) could disable the pumps required to keep the spent fuel pool cool. This could cause the boil-off of cooling water and the ignition of the fuel, or an uncontrollable chain reaction. The NRC must require that emergency power from off-site sources be available at nuclear power plants at all times, and that submersible pumps be installed and operable particularly at sites that are vulnerable to flooding. (0277-5 [Roskos, Laura])

**Comment:** Backup power sources: Despite having much more radioactivity capable of escaping into the environment than a reactor core, reactor pools do not have thick-secondary containment, and are not required to have their own emergency back-up power or water make-up capabilities. Power back up systems alternatives, including solar and wind power back up requirements must be considered to prevent slow motion boil down environmental impacts, due to

loss of off-site electricity, whether due to a natural disasters; an intentional attack; a reactor accident; station blackout; and abandonment of the nuclear power plant. (0296-24 [Shapiro, Susan])

**Comment:** But pools at most U.S. atomic reactors contain several times more high-level radioactive waste than does Fukushima Daiichi Unit 4, meaning the potential catastrophes downwind, downstream, up the food chain, and down the generations would be even worse here in the event of a pool fire, whether caused by a sudden drain down (due to an earthquake, heavy load drop, terrorist attack, etc.) or a slower motion boil down (due to loss of off-site electricity, whether due to a natural disaster such as a hurricane, an intentional attack, a reactor accident causing abandonment of the nuclear power plant site, etc.). (0326-10 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** Underwater submersion could lead to inadvertent nuclear chain reactions in the fissile materials, namely Uranium-235 and Plutonium-239, still present in the wastes. In the presence of neutron-moderating water -- just as in an operating reactor core -- fuel rods that have been brought together in a critical mass, as due to damage from the earthquake, could spark a chain reaction. Taking place on the bottom of Lake Michigan, this would worsen already disastrous radioactivity releases escaping from a breached container. It would also make emergency response a suicide mission, as the gamma and neutron radiation being emitted from a damaged cask, with compromised radiation shielding, undergoing an inadvertent chain reaction, would deliver a lethal dose at close range in as little as seconds. Another potentially disastrous scenario, burial under sand due to an earthquake, could cause wastes to dangerously overheat. So could a situation where flood waters, or mud, blocks the bottom vent on the dry casks. (0329-1 [Kamps, Kevin])

**Comment:** Elsewhere in the report, the authors explain that a refueling atomic reactor will often remove the entire core of thermally hot irradiated nuclear fuel into its storage pool. Whereas a pool would typically take up to 10 days, upon loss of water circulation, to boil down to the tops of the stored irradiated nuclear fuel, such a full core offload of thermally hot fuel directly from a just-operating reactor core into a storage pool could lower than boil down time to a single day. Once the tops of the fuel assemblies are exposed to air, they could quickly overheat and catch fire, unleashing catastrophic amounts of radioactivity.(0332-1 [Kamps, Kevin])

**Comment:** We need some serious consideration of worst-case scenarios, and other possible "unforeseen" difficulties, and a realistic approach to consequences. (0106-3 [Maiorca, Michelle])

**Comment:** For perpetual storage and repository scenarios, events with a probability of one in one hundred million per year, consistent with the most recent repository regulations, should be considered in this EIS analysis. (0244-14 [Lacey, L. Darrell])

**Comment:** The EIS must include bounding estimates for the number of cancers caused by a worst case release of radionuclides from any plant. (0286-52 [Curran, Diane])

**Comment:** The EIS must include bounding estimates for... the worst case property damage. (0286-56 [Curran, Diane])

**Comment:** Bounding values should also be considered for other key parameters such as the frequency of natural disruptive events. (0325-10 [Bromm, Susan E.]



**Comment:** Bounding values should also be considered for other key parameters such as... human errors, manufacturing errors, and fuel loading errors. (0325-11 [Bromm, Susan E.]

**Comment:** The effects of a disaster along the California Coast would affect the lives of over 100 different Federal, State and Tribal entities that support their culture, protect Sacred Places, and live our culture of today along the California coastline and Pacific coast. A disaster from the storage of Nuclear Waste or from the Nuclear plants operations failure would bring to and end the life of California Native American Nations and Pacific coast Tribes, and depending on the toxic wastes streams either air or water, over a 1000 Indigenous Tribal Nations from Alaska to Chile would be effected or lost forever, the Ocean is Our Life. (0284-5 [Collins, Fred])

**Comment:** NEPA requires that the NRC not limit its evaluation of adverse environmental impacts to humans but that it also evaluate the impact of waste storage on non-human biota in the human environment. See 40 C.F.R. § 1508.14 (defining "human environment" to include "the natural and physical environment"). Studies done following the Fukushima disaster have documented widespread damage to non-human biota. The biological and cultural resources would be gargantuan, and the potential for such a disaster needs to be examined in the broadest format, Native American lives will be affected, and Native Americans must be given the opportunity to have a clear voice in the process. Combining the NEPA and Section 106 compliance, which includes a programmatic assessment of the types of pre-historic and historic properties known and likely to occur within the designated corridors and the development of recommendations to avoid, minimize, or mitigate impacts to pre-historic and historic properties that will guide the agencies in the review of any subsequent development projects. (0284-6 [Collins, Fred])

**Comment:** Having storage of spent fuel will add significantly to a disaster waiting to happen. (0026-1 [Garner, Lowell])

**Comment:** In light of the many accidents at nuclear facilities over recent decades, I am very concerned for their [friends and family living near nuclear power plants] health and safety. (0029-1 [Anderson, Johanna])

**Comment:** As a citizen of this country and of this world I respectfully ask the NRC to diligently investigate the risks to the environment in the event of a failure in any of the many on-site nuclear storage facilities around the country. The scope of this assessment should be wide, as the result of just one failure at one location could be a national disaster. (0037-6 [Fleetham, Chelsea])

**Comment:** So could reactor accidents. After all, the hydrogen that float over to Unit 4 supposedly came from Unit 3. That was a reactor accident. So that's another issue that should be in the scope of this proceeding, reactor accidents leading to pool accidents. And there are a couple different versions of that. There's the fast drain down, and then there's the slower but just as catastrophic if allowed to proceed full course boil down scenario. So those are catastrophic fire risks in pools that should be within scope. (0005-5-13 [Kamps, Kevin])

**Comment:** Some of the issues that I request that the NRC and Licensees address in this rulemaking include:

- Loss of off-site power due to a cyber attack or a coronal mass ejection. (0009-5 [Lewis, Marvin])

**Comment:** In all fairness to licensees, this instant rulemaking should take a back seat to the petition of Thomas Popik dated March 14, 2011, as the Popik petition has the effect of making all nuclear reactors disasters in waiting. Notice of the OPA no,12-129 dated 12-18-2012 NRC to further examine Solar Flares Issues Raised in Rulemaking Petition. I have raised several of the issues re Solar flares previously. Popik's petition raises many more. This present rulemaking needs to stop due to the procedures reflecting collateral estoppel. (0223-1 [Lewis, Marvin])

## 12. Comments Concerning Security and Terrorism

**Comment:** In terms of the security risks, I'll point out that the National Academy of Sciences in 2005 backed up warnings by researchers such as Bob Alvarez, et al., which included the current chairwoman of this Commission that raised a red flag about the risks – the catastrophic risks of pool fires and if the agency needed any more evidence the representative from the State of New York pointed to Fukushima Daiichi Unit 4, which is still precariously on edge of simply collapsing and catching on fire. (0004-11-3 [Kamps, Kevin])

**Comment:** I would like to see the scoping be for terrorism purposes, the line-of-sight issues to the spent fuel cask storage from the public, and secondly, the probabilistic [sic] risk analysis of explosives and explosions and the forces caused by explosions at spent fuel casks is not sufficient. And I won't disclose the setback distances that we used for the study, but they're far short of what actually exists at some of the nuclear plants in this country. (0004-24-1 [Portzline, Scott])

**Comment:** Need to look at terrorism and sabotage, both from the land and the air, and the potential for cyber terrorism, which has not been considered. (0004-25-14 [Shapiro, Susan])

**Comment:** Danger from spillage of carcinogenic and other dangerous substances and from terrorist attack is too great to continue the inadequately protected systems now in place at these sites. (0035-2 [Bradbeer, Wilma])

**Comment:** There is nuclear waste stored all over the country that could be vulnerable in the event of a violent weather system or act of terrorism. If even one storage facility were compromised the immediate and long-lasting effects would be catastrophic for the environment and indeed for human life. (0037-2 [Fleetham, Chelsea])

**Comment:** These are additional issues [i.e., terrorism] to be examined in the course of this study. (0061-6 [Eilenberg, Alisa])

**Comment:** Any analysis that is done for the GEIS should include sabotage, terrorists' acts. (0119-6-5 [Agnew, David])

**Comment:** The storage of this fuel at nuclear reactor sites is a local and national security risk without any solution in sight. (0125-1 [Puett, David])

**Comment:** We cannot continue to operate these potentially dangerous plants without sufficient safeguards for the public. (0127-3 [Mac Kkrell, Thomas])

**Comment:** The spent fuel pool is designed to remain intact following an earthquake but it is not designed to withstand aircraft impacts and explosive forces. GE Mark I BWR's are especially vulnerable because the pool is located outside primary containment in the attic of the reactor

with a thin roof overhead, easily penetrated by a small plane or helicopter loaded with explosives or simply fuel. PWR pools likewise are vulnerable. Reliance on increased airport security is insufficient to prevent an attack. Scoping must show otherwise. (0148-19 [Lampert, Mary])

**Comment:** Contrary to NRC, pools are not robust structures. For example, the National Academy of Sciences Safety and Security of Commercial Spent Nuclear Fuel Storage Public Report, April 2005 stated at 6 that, "The potential vulnerabilities of spent fuel pools to terrorist attack are plant specific there are substantial differences in the designs of spent fuel pool that make them more or less vulnerable to certain types of attack." And, at 41, "The spent fuel pool, (GE Mark I BWR reactors) is located in the reactor building well above ground level. Most designs have thin steel superstructures. The superstructures and pools were not, however, specifically designed to resist terrorist attacks." So that contrary to NRC, GE Mark I Boiling Water reactors, such as Pilgrim, Vermont Yankee and Oyster Creek NPS are especially vulnerable to attack. (0148-20 [Lampert, Mary])

**Comment:** Explain what security methodologies will be employed to prevent a security breach. Explain the benefit of using contacted security employees vice security employees employed by the federal government. At what point would National Guard troops be put in place (e.g. security fails two security drills, National Guard augments security until performance improves). (0246-8 [Kohler, Joseph])

**Comment:** The overriding comment however is that whatever spent fuel alternatives are considered in the EIS process, none that leave spent waste on-site are considered viable since they would represent an extreme vulnerability to attack, sabotage and terrorism and all options must result in their removal to final deep geologic disposal at the earliest opportunity. (0262-3 [Andrews, Richard])

**Comment:** The EIS should rigorously explore all of the potential environmental impacts associated with long-term and indefinite storage of nuclear wastes at reactor sites following reactor shutdown, including ... malevolent acts. (0275-12 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The scenarios considered in the proposed EIS should cover a range of potential future outcomes regarding the propensity for violent conflict, and should cover situations in which stored spent nuclear fuel or high level radioactive waste would experience attacks involving states or non-state actors. (0286-30 [Curran, Diane])

**Comment:** EIS should address radiological risk associated with attacks that could affect stored SNF or HLW. (0286-98 [Curran, Diane])

**Comment:** Terrorism and sabotage risks and impacts, including aerial, terrestrial or cyber attacks must be included in the EIS. (0296-38 [Shapiro, Susan])

**Comment:** Methods and guarantees of long term security regarding on-site high level nuclear waste storage must be included within the scope of the EIS. After 200-300 years after the radiation barrier of spent fuel has been reduced, theft of the spent fuel becomes possible. (0296-39 [Shapiro, Susan])

**Comment:** We urge you to include the following comments on...security enhancements. Today's operating reactors were designed in an era when security issues were not as urgent as they are at present. However, it is currently imperative that the security of reactors, spent fuel pools and dry cask storage units must meet the highest safeguards standards. (0323-8 [Birnie, Patricia T.]])

**Comment:** The validity of Alvarez et al.'s findings were confirmed by no less than the National Academy of Science. NAS's Public Report, "Safety and Security of Commercial Spent Nuclear Fuel," was dated April 6, 2005. A copy of the full NAS report is posted online at <http://www.nirs.org/reactorwatch/security/securityhome.htm> under its chronological date. NAS's study put to rest any doubts about the danger we all face: nuclear waste stored in pools at nuclear power plants is vulnerable to attack. NAS also pointed out that current dry storage is not without its own vulnerabilities to attack. (0334-1 [Kamps, Kevin])

**Comment:** Because of a very important technical fact, the radiation barrier to spent fuel is a couple hundred years, 200, 300 years by the time your cesium137 is pretty much gone. And then, unlike today, and for a couple a hundred years, where theft is not possible, you don't, at least not -- very remotely possible, theft of spent fuel, extracting the plutonium, using it to create, you know, havoc in terms of terrorist radiation bombs, all that becomes much more in the realm of what you can imagine than what you could do with spent fuel today. You can't steal spent fuel today because of the radiation barrier. Of course there's the physical mass of the stuff. But that's not the main barrier. The radiation barrier is the main barrier to preventing mischief from spent fuel, whether it's bombs or radiation mischief. (0004-6-6 [Makhijani, Arjun])

**Comment:** And I'll close with the security question of dry cask storage. There was a test carried out at Aberdeen Proving Grounds in Maryland, it's a U.S. Army facility. In June 1998 a TOW antitank missile was used against a German CASTOR cask, which was actually in use at the Surry Virginia Nuclear Power Plant, one of the smorgasbord of cask designs used at that facility. So the first TOW missile was fired at a concrete flak jacket, which would also serve as radiation shielding. But in this case it served as a missile absorber, and that TOW antitank missile turned that concrete flak jacket into dust, and it blew away. And the second TOW antitank missile blew a hole clean through the wall dry cask itself, 15 inches of die cast iron, about as big around as a grapefruit. And that was the pathway now that the irradiated fuel or what's left of it after the explosion and fire could then escape into the environment. Disastrous amounts of such volatile ingredients as cesium-137 could now escape directly into the environment.

So certainly the security vulnerabilities of dry casks should be within the scope of the environmental impact statement. That's another aspect of hardened onsite storage is empty the pools into quality dry casks that are fortified against terrorist attacks, that are safeguarded against accidents, and that are built well enough to last for at least the many decades into the future if not the centuries into the future that these forever deadly wastes will be stuck at the reactor sites. (0005-5-5 [Kamps, Kevin])

**Comment:** Current dry casks, almost all stored outdoors in plain site, have not been designed to withstand terrorism, such as an attack by TOW anti-tank missiles. (0062-12 [Jessler, Darynne])

**Comment:** Current dry casks, almost all stored outdoors in plain site, have not been designed to withstand terrorism, such as an attack by TOW anti-tank missiles. (0067-5 [Kammerer, Greg])

**Comment:** Current dry casks, almost all stored outdoors in plain site, have not been designed to withstand terrorism, such as an attack by TOW anti-tank missiles. (0068-11 [Sheridan, Paul])

**Comment:** Current dry casks, almost all stored outdoors in plain site, have not been designed to withstand terrorism, such as an attack by TOW anti-tank missiles. (0072-11 [Shuput, Steve])

**Comment:** Regarding weapons capabilities, how we're going to go further in cyberwarfare, drones, God knows what, that could present various challenges to spent fuel pools. (0118-11-3 [Lampert, Mary])

**Comment:** I guess I'll close on this with something that is QA-related, but it's also simply missing in NRC Regulations. And that is safeguards and fortifications against terrorist attacks, intentional attacks on dry-cask storage. Vulnerability to such weapon systems as TOW anti-tank missiles. And, again, I'll submit this for the record. A fact sheet by NIRS, Nuclear Information Resource Service, about a June, 1998, Aberdeen Proving Ground experiment, that's a U.S. Army experiment using a TOW anti-tank missile against a German cask system, called the CASTOR. Which is deployed at the Surry Nuclear Power Plant, for example. The Cadillac of casks really, because of the thickness of the metal, 15 inches thick, die-cast iron. Where the first TOW anti-tank missile obliterated the concrete radiation shielding. And then the second TOW anti-tank missile, drilled a hole through the 15 inches of metal, which is, you know, it's designed to do that. Because it's an anti-tank armor weapon. So that was the escape pathway for volatile radioactive poisons like cesium-137, to escape in a fire if there were an incendiary involved in that attack. So I would request that security, as well as safety, as well as environmental considerations be included on dry-cask storage. (0118-2-9 [Kamps, Kevin])

**Comment:** I think it's very important to look specifically, when analyzing vulnerability to a terrorist attack, to consider BWRs and also to do specific analyses of the effect of a small airplane or helicopter with explosives. (0118-7-3 [Lampert, Mary])

**Comment:** And I would also like to talk about the security risks pools that have been touched upon here, looking at various weapons systems that could do that and what kinds of precautions could be put in place, short of emptying the pools if the industry decides to go that route. (0118-8-5 [Kamps, Kevin])

**Comment:** Nevada generally agrees with the generic study approach suggested and use of the information resources identified, including recent and ongoing NRC rulemaking activities regarding 10 CFR Part 73. Given the long timeframe covered by the EIS, provisions should be made for periodic updating of the terrorism and sabotage analyses to address: (1) advances in the technology of terrorism and counter-terrorism; (2) changes in population density near storage facilities and shipment routes; and (3) changes in understanding and definition of the design basis events and design basis threats. (0265-19 [Halstead, Robert])

**Comment:** NRC should also clarify that it plans to consider the environmental impacts of terrorism related to storage and transportation at both a generic and site-specific level." Notably, NRC planned to do so, at least generically, in its 2011 Report for the Long Term Storage EIS. See LTR at 13. Given the long timeframe covered by the EIS, provisions should be made for periodic updating of the terrorism and sabotage analyses to address: (1) advances in the technology of terrorism and counter-terrorism; (2) changes in population density near storage facilities and shipment routes; and (3) changes in understanding and definition of the design basis events and design basis threats. (0271-17 [Fettus, Geoffrey])

**Comment:** Climate change is likely to have the greatest impact on security through its indirect effects on conflict and vulnerability. (0286-99 [Curran, Diane])

**Comment:** We urge you to include the following comments on...reactor design flaws. Spent fuel pools were not designed with long term storage in mind, or were they required to provide protection from potential terrorist attacks. Therefore, reinforcements of spent fuel pools, and security enhancements must be required for all reactor spent fuel pools. (0323-5 [Birnie, Patricia T.])

### 13. Comments Concerning Cost Considerations

**Comment:** We raise a concern that the environmental impact statement look at that's not necessarily environmental but real, and that economic -- is an economic impact which we feel must be addressed as ratepayer and ratepayer advocates because going forward on all this, who's paying? We have understood that once the deal we accept the fuel for permanent repository gets on the truck, the train, or whatever leaves the site, that's the responsibility of the federal government. But in the 50 to 100 years or more that may precede such an event, how can the agency ensure the fiscal solvency of the utilities that are now in charge of maintaining the security and the safety of all the pertinences that are required to keep spent fuel stored onsite? Will the ratepayers be paying for this 100 years after the plants have ceased to generate either revenue or electricity? (0004-15-5 [Weisman, David])

**Comment:** The cornerstone somewhere in the EIS must be the ability to maintain the fiscal responsibility because without that money the integrity of the facilities, the ability to repackage the cask if necessary won't be there without money unless the federal government is willing to step in and say that they're going to accept those costs now and not at the time when it goes to a supposed federal repository. Remember, there are many corporations, famous institutions, once beloved brand names from Pan Am to TWA to Oldsmobile that are no longer with us, they are insolvent, they are gone. So what would happen if a private utility and their money goes away? Again, absent the federal government assuming all cost responsibilities at that time, how is it paid for? (0004-15-6 [Weisman, David])

**Comment:** Remember too, as long as the waste remains on-site, again according to the current rules, it is the local state municipal agencies who are responsible for keeping the offsite responders, the emergency response teams, the evacuation plans available. And absent the revenue that these provide now to those communities who pays for this over the 50, 100, and 150 years that could follow? So we would ask that economic issues cannot be divorced from this process as well. (0004-15-7 [Weisman, David])

**Comment:** Fiscal responsibility, as was raised before in the economic impacts. (0004-25-11 [Shapiro, Susan])

**Comment:** And actually the GAO report, September 2009, looked at that [building fuel pools or dry casks at permanently shut facilities]. And I believe in the draft of that report, the cost of building pools for that transfer operation was estimated to be \$300 million per site. (0005-5-7 [Kamps, Kevin])

**Comment:** At the Dec. 6 public webinar, I again raised the question of finances, and if the finances would be available in a timely fashion as had not been the case at New Orleans and

the many serious climate problems which the United States has recently faced. (0091-2 [Lewis, Marvin])

**Comment:** Radioactive waste must be transported to its final resting place. Most major roads go thru cities. Cities are having difficulty funding First Responders. I want to know how or if the NRC and licensees have looked at the funding of First Responders and the many other financial issues in a timely fashion. (0091-3 [Lewis, Marvin])

**Comment:** I would like to know how sound financially is the industry, and if the nuclear industry can operate all the way thru the nuclear fuel cycle safely with sufficient funds available in a timely fashion. (0091-4 [Lewis, Marvin])

**Comment:** The other thing is I don't know about the, whatever scenario you use, how it is going to be financed. You say you have, the NRC says there's a fund to cover it, but that fund is being invested again outside the United States. We're going to try to get it back, I presume, if we need it. And there's 1,001 financial questions that don't seem to be addressed and I think they are generic, because nobody operates without money. (0118-14-1 [Lewis, Marvin])

**Comment:** My confusion at this point concerns money! We are approaching something called the fiscal cliff, I don't know if people break their legs when they fall off or whatever, but whatever it is. My problem is when, I don't really understand how we can expect the money to be there when the utilities are shipping money outside the U.S. to invest in Europe and what have you. We're going to be asking the people with the empty pockets to send money back? I doubt it. (0118-14-2 [Lewis, Marvin])

**Comment:** Another, I mentioned it earlier, but the scenario of decommissioned nuclear power plants having no where for the waste to go. No pool because it's been dismantled. So certainly over a 50 or a 100 year period of time, that the need should build new pools on these sites. The need to build hot cells. There's going to be a need to repackage the dry-casks as they fail with time. So, again, Marvin Lewis mentioned that where would the funding come from to build a new pool? I believe in the draft stage of the GAO Report, that was finally published in 2009. If I'm not mistaken, in the draft, the cost for building a new pool at each and every decommissioned reactor site, was in the hundreds of millions of dollars and they may have been lowered to the tens of millions of dollars in the final report. But certainly there's the cost of building those pools or those hot cells. There's also the cost, per cask, of simply replacing worn out casks, once a generation. And so those costs need to be accounted for and in the funding sources, where the money will come from, to do all that, will need to be accounted for, in the scope of this proceeding. (0118-17-6 [Kamps, Kevin])

**Comment:** This money situation really bugs me. I don't know if you read the daily papers, but they all seem to be talking about a fiscal cliff. That the U.S. Government can't get money. I assure you that if we have a problem, that problem will not get the money to get solved. And for some reason, I don't see one dollar mentioned in any of these EISs. Now maybe I'm wrong, but I think money does have a few things to do with the environment and money does has a few things to do with cures that we're going to need and I'd sure like to see a cask of the radioactive waste moved without costing any money. So I sure would like to see some financials in the EIS. And I generally do not see that. (0118-21-2 [Lewis, Marvin])

**Comment:** The finances are a key issue, and therefore what Congress does in this regard, would have an impact. That might seem like a big stretch, but it's something near and dear to my heart and money, let's face it, does and has been a driving factor in NRC's determination of whether they're going to consider, and I'm not trying to be snide on this, economic impact on the Licensees versus protection of public health and safety. (0118-26-3 [Lampert, Mary])

**Comment:** Managing the waste from reactors is expensive if done properly. (0137-1 [Martinez, Catherine])

**Comment:** Findings based on very long (perhaps perpetual) periods of safe and environmentally acceptable storage may be possible technically, if funding sources are ensured with perpetual funding provided concurrent with the use of nuclear generated electricity instead of assumed to be available from future generations. Any "no repository" scenario must address financing of perpetual storage including ongoing monitoring, maintenance, and repackaging. In addition the cost of payments to utilities for failure to accept spent fuel must be included in any analysis. (0244-6 [Lacey, L. Darrell])

**Comment:** In the end, no matter what is decided, the NRC must keep in mind that it is the tax payers of the United States that are paying the cost. Cleanup of spills at old reactors. Accidents during shipments, accidents and at makeshift storage sites, nuclear reactions at yucca Mountain, and more are paid for by us, the taxpayer because Congress and made us responsible for the wastes at these plants. (0251-2 [Hatley, Earl])

**Comment:** The expense of building a plant is overwhelming and we citizens do not want our tax money used to subsidize them. We also don't want our tax money used to pay for the waste storage after the plant is closed. (0258-3 [Homer, Deanna])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: impacts to social and economic resources from extended SNF storage and transportation (e.g., the adequacy of Price-Anderson Act liability coverage in the event of a severe accident or incident, long-term reliability of institutional or corporate management of waste, etc.). (0272-10 [Weisenmiller, Robert B.])

**Comment:** The EIS should rigorously explore all of the potential environmental impacts associated with long-term and indefinite storage of nuclear wastes at reactor sites following reactor shutdown, including ... failure of funding sources to provide sufficient resources to manage and secure nuclear wastes at each reactor site long after the site is no longer a source of any income to its owner. (0275-10 [Brock, Matthew] [Sipos, John] [Sorrell, William H.])

**Comment:** As part of this alternative analysis, the EIS should address the costs associated with the maintenance, upkeep and replacement of the same. As part of the decommissioning process, a spent fuel pool or a similar facility will, following the removal of all spent fuel from the pool, be destroyed. With the requirement that transfers will occur during the course of time that is being examined by the EIS, the costs associated with the construction and maintenance of a new spent fuel or other transfer facility should be identified. (0291-12 [Harlan, Thomas])

**Comment:** The EIS should review the history of transfers to date. What has been attempted and what is the result. This will allow for an estimated valuation of certain costs associated with the transfer as well as the success and likelihood of one once it is undertaken. (0291-13 [Harlan, Thomas])



**Comment:** The EIS should address the issue of institutional control - especially in the form of revenue. How is there going to be sufficient revenue to manage spent fuel storage systems when the plant shuts down and the ratepayers are no longer receiving the benefit of electricity being produced through nuclear energy? The cost, then, of continued storage, maintenance, transfer, and ultimate disposition may fall on ratepayers or citizens of the state that did not have a stake at all when the spent fuel was being generated. (0291-14 [Harlan, Thomas])

**Comment:** If there is going to be storage of the spent fuel for 50 or 100 years or not removed at all, how are the entities that are responsible for emergency response going to be supported to maintain the necessary readiness? The normal tax revenue stream from the nuclear power plant will be gone since it will no longer be operating. Instead it will be replaced by the tax revenue stream from the ISFSI which will have little, if any, tax revenue. (0291-16 [Harlan, Thomas])

**Comment:** The EIS should take this into account and analyze the same. It should do so by identifying the source of income that is to flow to host cities like Red Wing including the diminished amount of tax revenue that is generated from the ISFSI. The EIS should examine, as an alternative, a dedicated source of revenue that will allow for the City to continue to maintain the necessary state of readiness to respond to an incident at the PINGP's ISFSI (including an incident at the spent fuel pool and its facility during any transfer). (0291-17 [Harlan, Thomas])

**Comment:** Fiscal solvency of waste management is not part of the aging management programs evaluated in the new superseding license "renewal proceedings. Therefore a full evaluation of guarantee of long term fiscal responsibility over hundreds of years. (0296-31 [Shapiro, Susan])

**Comment:** Issues related to continued private ownership of high level radioactive waste, including fiscal insolvency and increased liabilities not covered by the Price Anderson Act, which makes the ratepayer the prime insurers, must be fully evaluated. (0296-32 [Shapiro, Susan])

**Comment:** Long term fiscal impacts on local and state governments vs. the Department of Energy taking title to the spent fuel to provide assurance of financial security and solvency by federally maintaining waste management system must be fully evaluated. (0296-33 [Shapiro, Susan])

## 14. Comments Concerning Cumulative Impacts

**Comment:** We need to look at the cumulative impacts of the leaks and fires of the spent fuel pools on cumulative health impacts on the most vulnerable members of our society. That would include impacts on water supply and food supplies. (0004-25-3 [Shapiro, Susan])

**Comment:** An EIS must address the environmental impacts of the proposed action and connected actions, including cumulative impacts. 10 C.F.R. § 51.71(d). (0271-20 [Fettus, Geoffrey])

**Comment:** In order to accurately discern, and portray a realistic picture of, the probable impacts of future SFP leaks, NRC's EIS must consider cumulative environmental effects.... In relation to SFP leaks, NRC must fully analyze the cumulative impacts resulting from past, present, and

reasonably foreseeable future radiological leaks from non-SFP systems, structures, and components. (0286-114 [Curran, Diane])

**Comment:** In relation to spent fuel pool leaks, the NRC must fully analyze the cumulative impacts resulting from past, present, and reasonably foreseeable future radiological leaks from non-spent fuel pool systems, structures, and components. In its analysis, NRC should consider the potential impacts to groundwater resources, surface water resources, and public health. (0286-47 [Curran, Diane])

**Comment:** The EIS should evaluate the cumulative effect of continued storage which would include but not be limited the total natural release of radiation from a fully functioning ISFSI and the impact in the event that there is a release. This should include an analysis of contamination of ground water tables (another local factor related to seepage and absorption), river and other water ways. (0291-20 [Harlan, Thomas])

## 15. Comments Concerning Alternatives

**Comment:** We encourage the NRC to be especially thoughtful before it concludes there are waste confidence issues that can't be addressed in a generic environment impact analysis. We agree with the Commission's direction that there must be a quote, "exceptional or compelling need" to take this approach. We distinguish this from a licensee's desire to move forward on a site specific analysis if it believes that's the most efficient approach under its own particular circumstances. (0004-10-4 [Silverman, Don])

**Comment:** The scoping notice calls for generic analysis of long-term nuclear waste storage intact which cannot and should not be analyzed generically. Impacts will vary greatly from site to site and will depend on special characteristics and sensitive ecologies in each location, all of which are impossible to study generically. Dismissing the unique site characteristic will do nothing to protect individual communities. (0004-12-7 [Barczak, Sara])

**Comment:** We also agree with those who believe in the need to dispel with the concept or notion that this is a generic and a generic environmental impact statement is possible. (0004-15-2 [Weisman, David])

**Comment:** There's almost nothing that can be considered generically. (0004-22-4 [Treichel, Judy])

**Comment:** We oppose a generic environmental impact statement for waste storage. Pilgrim is located on Cape Cod Bay, which has many unique ecological features. It contains rare species habitat for the North Atlantic right whale and contains a national marine sanctuary. Pilgrim sits on top of Plymouth's Sole Source Aquifer, one of the most pristine and significant aquifers on the East Coast. Pilgrim is already leaking radioactive tritium into this aquifer and into Cape Cod Bay. (0004-23-6 [Sheehan, Margaret])

**Comment:** The public impact cannot -- this cannot be a generic -- considered generic, because each site, as has been stated over and over again, has its specific individual features and concerns, and it must be site-specific evaluation. (0004-25-7 [Shapiro, Susan])

**Comment:** Can it be a generic rulemaking? We've heard a lot of comments that says, "Well, we can't do generic rules, because all plants are unique." The Commission has a long history of doing generic rules: Table S3, Table S-4, the license renewal rule. The Supreme Court has

blessed that process in multiple cases. The D.C. Circuit, in the case that sent this rule back, blessed the generic process. Of course, it has to be done correctly. The bounding analysis has to be done correctly, and one of the things that I would hope that people will do when they comment on the draft EIS is to comment on whether that process was done correctly. The examples we've heard about site-specific conditions apply equally to any other generic rule that's -- that the Commission has been on. Yes, every plant is different. That's why you have bounding conditions. Every plant is unique. That's why we have bounding conditions. (0004-27-3 [Silberg, Jay])

**Comment:** NRC must analyze potential environmental impacts of indefinite onsite storages. We continue to believe that such analysis must be done on a site-specific basis. (0004-4-9 [Johnson, Ron])

**Comment:** The state [of New York] would strongly recommend that the rule, the rulemaking, the analysis, provide for site-specific alternatives and site-specific mitigation. (0004-5-3 [Sipos, John])

**Comment:** So you propose to do a generic analysis. The court has left you the room for that but it's not a playing field without boundaries. The court actually set some boundaries about the breadth and depth to which you have to consider the environment impact. I would suggest that you cannot properly conduct an EIS generically alone. Some things can be done generically, you know, what are the impacts of transferring casks in some scenarios where you might have a local accident that's on site. You can bound that and say what's the worst case situation, maybe Prairie Island, you know, something where you have a bunch of stuff wind up in the river. But I would say that the offsite impact from severe accidents, severe terrorist attacks, would be qualitatively different at different sites. (0004-6-3 [Makhijani, Arjun])

**Comment:** The Court did not state that site specific deficiencies were outside the decision of the Court. The Court did not state that the rulemaking would be limited to generic issues. (0009-10 [Lewis, Marvin])

**Comment:** The NRC uses the concept of generic to limit issues getting a timely and adequate solution. The three specific deficiencies should not be limited to 'generic' issues vs 'site specific' issues. The Court did not limit the issues to generic vs site specific. If there is any importance to an issue, the NRC itself sends a letter to Licensees and resident inspectors to check at their respective sites. This action demonstrates that the division of site specific and generic is artificial and a means to drop an issue into a generic waste basket so it can linger for decades without resolution. This has happened with cable tray separation and many issues. (0009-2 [Lewis, Marvin])

**Comment:** When necessary seems to be a generic issue, but 'when necessary' must be evaluated site by site as each site has different physical issues that may produce a different 'when.' (0009-3 [Lewis, Marvin])

**Comment:** What is the difference between a generic issue and a site specific issue. In the past the difference was that an issue that the NRC wanted buried was called generic so that it did not have to be settled in the present proceedings. Is that the criteria? Item h. bottom of same column. Will commenters be given access to requests for proposals as soon as issued or will we be required to wait until H freezes over? (0009-7 [Lewis, Marvin])

**Comment:** If the NRC seems to consider a site specific problem generically, why should the onus be put upon commenters to separate generic and site specific? (0075-2 [Lewis, Marvin])

**Comment:** Another issue with generic vs site specific is that often the NRC will allow a license to be issued without a cure to the deficiency allowing generic issues to languish for decades with temporary fixes. (0075-3 [Lewis, Marvin])

**Comment:** So I sincerely hope that that's going to be a thorough review, in the EIS that you do. That could be generic, because there's so many that are extremely crowded. So there's similarities there, but I think the issue of generic has to deal somehow with the fact that we also have sites that are going for renewals. And a generic EIS does not cover site-specific issues. That would mean that a site-specific EIS would be needed for particular problems at facilities that are undergoing license renewal, as well. (0118-4-3 [Warren, Barbara])

**Comment:** One is specific request in this particular activity for staff to pay particular attention within the generic EIS and language that speaks directly to re-licensing staff on how issues, conditions, impacts, risks, not addressed in the GEIS, should be addressed within site-specific, facility-specific, SEISs. Not to just simply provide generic language, but to be very prescriptive and provide, if nothing else, some form of checklist or thorough description of those instances when a more detailed site-specific evaluation of waste storage would be necessary for those re-licensing those site-specific SEISs. (0118-6-1 [Shepard, Larry])

**Comment:** And, secondly, just to make a comment that with regard to specific re-licenses and talking about the time frames involved in waste storage, where for instance in Calloway County in Central Missouri, where projections for storage would leave one to try and make an assumption all the way to 2104, the year 2104. That there might indeed be many site-specific components, depending on the location, but may require a much more thorough investigation of risk for storage. And, quite frankly, the presumption would be that there is a great, a tall hurdle for the re-licensing staff to clear, in order to avoid an adverse rating under EPA's Section 309, Review Authority under the Clean Air Act. (0118-6-2 [Shepard, Larry])

**Comment:** I know that the Court ruling says that this can be generic. I'm asking the NRC -- I think you know why it shouldn't be. I think you understand that each reactor has a different situation. They each are a different age. Some are on the ocean. Some are on a river. Some are cooled with a lake. There's climate issues in different parts of the country. There's temperature. There's weather patterns and storms. There's fault lines. And the effects of global warming. And then we have evacuation issues that are different for different populations. (0119-7-6 [Sorensen, Laura])

**Comment:** Please...no generic eis. (0165-3 [Zimmermann, Warren])

**Comment:** Careful consideration must be given to each particular site before any approvals are granted for storage. Every site has unique geographic characteristics which can severely amplify unforeseeable events. (0200-1 [Pyburn, Susan])

**Comment:** I don't understand how the NRC can hope to present an Environmental Impact Statement sometime in the year 2013. There are Nuclear Power Plants all over the country, each with different challenges, different ratings, different management, and different levels of competence. To suggest that all of these factors, and all of these locations, can be considered

in such a short period of time does not seem realistic to me. I would hope for a longer period of study and research. (0228-1 [Wallace, Martin])

**Comment:** Similarly, the WCD issues should not be addressed on a site-specific basis. (0263-16 [Ginsberg, Ellen])

**Comment:** Therefore, there is no reason for the NRC to embark upon site-specific analyses when the Court has already upheld the use of a generic rulemaking. NEI supports the Commission's direction that the agency should nonetheless maintain the option of conducting some environmental analyses of waste confidence issues on a site-specific basis in support of licensing decisions, but only in rare circumstances. (0263-17 [Ginsberg, Ellen])

**Comment:** NEI concurs with the NRC's plan to proceed with a generic EIS. (0263-7 [Ginsberg, Ellen])

**Comment:** This approach is problematic in two respects: the impact assessment would not be legally sufficient for NEPA purposes, and the findings would have little or no value to affected stakeholders in any future use of the EIS. From the standpoint of stakeholder acceptance, evaluating "composite generic sites" based on actual sites is a recipe for disaster. Members of the public will be looking for any indication that "their" area is under consideration without any notification or expression of interest. The statement on page 14 that the "staff will also consider analyzing impacts from one or more actual sites for comparison" only exacerbates this perception. (0265-15 [Halstead, Robert])

**Comment:** Also, while we are respectful of certain site-specific concerns raised by other stakeholders, the NRC should not examine site-specific issues in this proceeding; those are better addressed in other proceedings. (0268-9 [Wright, David A.])

**Comment:** The draft EIS should address the following issue regarding SNF storage and transport: site-specific environmental and economic impacts of long-term SNF storage and transportation. (0272-9 [Weisenmiller, Robert B.])

**Comment:** NRC should also preserve for site-specific consideration the full extent of the adverse environmental impacts associated with indefinite storage of nuclear wastes at reactor sites to the extent such an impact depends upon the nature of the local environment, local economy, local land use, and local resources at risk in the event of a catastrophic release of nuclear wastes into the air, soil, water, or groundwater, etc. (0275-18 [Brock, Matthew] [Sipos, John] [Sorrell, William H.])

**Comment:** Any new NRC rule or EIS should similarly provide for the site-specific review of severe accidents to a power plant's nuclear spent fuel facilities and site-specific alternatives to mitigate such impacts. (0275-2 [Brock, Matthew] [Sipos, John] [Sorrell, William H.])

**Comment:** ANA is concerned by the NRC's intention to prepare a generic WCD. The 65 reactor sites across the U.S. are stunningly diverse. They are located near both major population centers and agricultural hubs, surrounded by diverse ecosystems, and at risk from myriad natural hazards. NRC must be extremely careful to include these factors while bounding its analysis. (0281-1 [Fuchs, Katherine])

**Comment:** This EIS must examine the changing design bases at existing and potential nuclear power reactors. Dynamic factors such as shifting populations, improved understanding of geology, and climate change must be analyzed in this EIS and accounted for in a new WCD. Factors that affect reactor sites' susceptibility to natural disasters must be carefully considered, including new developments in seismology and shifting weather patterns, are particularly important to the usefulness of a new WCD. (0281-10 [Fuchs, Katherine])

**Comment:** With respect to long-term spent fuel storage impacts, there are a number of impacts that must be addressed on a site-specific basis or with a bounding analysis that takes into account the degree of risk at the most adversely affected site. (0286-48 [Curran, Diane])

**Comment:** Site specific vs. generic. Health and property damage impacts, which are likely to be bounded by high density population sites with high property value concentrations like Indian Point in the suburbs of New York City or Limerick, near Philadelphia, Pennsylvania. (0286-49 [Curran, Diane])

**Comment:** Site Specific vs. generic. Impacts on river systems may be bounded by sites that are quite different in character. For instance, large scale dispersal of radioactivity from spent fuel storage at Prairie Island could create long-term damage to the entire Mississippi River system, including agricultural lands around it, cities that are vulnerable to flooding on its shores, barge traffic that is a major artery of commerce, and so on. Agricultural impacts alone may be bounded by sites like Fort Calhoun or Duane Arnold in Iowa. (0286-50 [Curran, Diane])

**Comment:** It is impossible to bound ecological impacts in a generic manner. They will require site specific discussion. For instance, the Calvert Cliffs reactors in Maryland are situated in one of the most sensitive and unique ecosystems of the United States - the Chesapeake Bay. The impacts of a major radioactivity release into the Chesapeake Bay ecosystem are likely to be quite different than those of a similar release at Turkey Point in Florida, which has barrier islands and Biscayne National Park a few miles away or Diablo Canyon, in California, where a major release could severely impact the unique ecosystem in the Monterey Canyon. It is important to remember in this context that the inventory of long-lived radioactivity in spent fuel pools in the United States is generally far larger than that in Chernobyl Unit 4, which had a severe accident and radioactivity releases in 1986. It is essential that the scenarios other than the no-action alternative consider the ecosystem impacts on a site specific basis unless it can classify sites based on types of ecosystems and address bounding impacts for similar sites. None of the sites mentioned in this paragraph could be put into a group with any other by that criterion. (0286-51 [Curran, Diane])

**Comment:** The EIS should acknowledge that certain impacts cannot be analyzed in a generic manner. (0286-85 [Curran, Diane])

**Comment:** ...it is clear that no scientifically valid examination of environmental impacts of prolonged storage can be done on a generic basis alone. (0286-86 [Curran, Diane])

**Comment:** The Alliance questions the value of a "generic" environmental impact statement for "temporary" spent fuel storage. Typically, the most "generic" assumption is that nothing can or will go wrong. But in the particular, diverse environments where spent nuclear fuel is produced and stored, that assumption is not correct, and it is incorrect in a whole array of ways. (0288-4 [Brailsford, Beatrice])

**Comment:** While the Commission may choose to regionalize these considerations or group these for similarly situated ISFSI's at power plants, it must provide analysis and include site specific information. (0291-6 [Harlan, Thomas])

**Comment:** Site specific capacities of spent fuel pools and dry cask storage capacities, currently and in the future, must be fully evaluated and considered in the EIS. (0296-12 [Shapiro, Susan])

**Comment:** Site specific off-site environmental impacts are qualitatively different at different sites for a variety of reasons, including the surrounding water quality and composition, and corrosiveness of each site-specific environment, i.e. salt water, briny water. Therefore at a minimum the EIS must consider the environmental impacts of interim or long term nuclear waste storage to the ecosystems of 1) River Reactors; 2) Bay Reactors; 3) Ocean Reactors; 4) Proximity to a Dam; and 5) Proximity to Drinking Water Supply. (0296-16 [Shapiro, Susan])

**Comment:** The approach described in NUREG-1748 also requires a description of the "affected environment" such as land, water resources, ecology, historic and cultural resources, socioeconomics, and environmental justice in the EIS. How will the affected environment be defined or described in the generic WC EIS. (0321-13 [Mahowald, Philip R.]

**Comment:** By using a tiered approach, the NRC could develop a generic WC EIS that would later be supplemented in ISFSI licensing actions or reactor relicensing (in the case of pool storage) to evaluating the site-specific environmental impacts.

Some commenters have suggested that site-specific impacts (of failing to secure a national repository) are evaluated in other NEPA documents and that there is no need to do so in the WC EIS. That just is not true. As mentioned above, there is no analysis of spent fuel storage issues in EIS's for reactor license renewal. As well, the EIS's for ISFSI renewals contain no analysis of long-term spent nuclear fuel storage issues. This is where the WCD and TSR have been the most effective. By stating that there will be a geologic repository, either by date certain or "when necessary" and that spent nuclear fuel can safely be stored on-site for 30 or 60 years beyond the licensed life of the plant, the WCD and TSR have effectively prevented any analysis of the environmental effects of long-term spent fuel storage (i.e., failing to secure a national repository). Without a site-specific WC EIS we will never know that the real environmental effects of failing to secure a repository are. This can change with now. We urge the NRC to consider site-specific environmental effects. (0321-17 [Mahowald, Philip R.]

**Comment:** We fail to see how the "hard look" goal can be met by not evaluating site-specific issues or concerns. The environmental and human health impacts of failing to secure permanent disposal will result from the long-term storage of spent nuclear fuel in either the spent fuel pool or dry casks. These impacts will stem from accidents or releases from casks (which vary from site to site) and pool leaks or fires. Since the environment is unique at each site, how can a generic EIS possibly capture unique site-specific features, such as geology, soil conditions, water features, elevation, population densities around the site, and economic costs and benefits? (0321-3 [Mahowald, Philip R.]

**Comment:** In our view, "failing to secure permanent disposal," means that the spent nuclear fuel is on site (either in the pool or in dry casks) and that the environmental effects of that failure would be different for each site because the affected environment is different for each site. Each reactor site has distinct environmental characteristics that were evaluated as part of its original licensing basis. Not every dry cask storage site uses the same cask design. The environmental

effects of finite (50 or 100 years) or indefinite spent fuel storage therefore must be evaluated on site-specific basis. (0321-4 [Mahowald, Philip R.]

**Comment:** The draft EIS should disclose and analyze all reasonably foreseeable impacts to the environment resulting from NRC actions and approvals. The draft EIS should also distinguish between those actions/activities being analyzed in the draft EIS and those actions/activities not covered that would trigger the need for supplemental environmental analysis under NEPA. (0272-1 [Weisenmiller, Robert B.]

**Comment:** The EIS must clearly delineate those issues that will be left to be evaluated on a site-specific basis, identify how these site-specific issues are to be addressed, and make clear that such site-specific consideration is to be explicitly authorized by regulation subject to the normal requirements of 10 C.F.R. § 2.309 on admissibility of contentions but without compelling any party to have to use 10 C.F.R. § 2.335 to seek a waiver of a rule in order to obtain a hearing on the site-specific aspects of post-operation nuclear waste storage at reactor sites. The site-specific issues must be addressed in each pending licensing proceeding before any lifting of the Commission's current stay on final decisions on all pending and subsequently filed applications. (0275-16 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** As we have stated above, we fail to see how a generic EIS can adequately evaluate the environmental effects of failing to establish a national repository. This is especially troubling to us as previously, the WCD and TSR have not allowed site-specific analyses of long-term waste storage impacts during licensing proceedings (i.e., reactor renewal and ISFSI renewals). For ISFSI renewals there is an environmental assessment process, although the scope is limited. We recommend that the NRC evaluate whether a tiered approach could be used for developing the WC EIS, where some issues might be generic to all pools or sites and other issues would be site specific. This approach is used in reactor renewals, where certain issues have been identified as Category 1 or generic issues (to all plants) that warrant no further evaluation unless new and significant information is identified. Site Specific (or Category 2) issues are evaluated in the Supplemental EIS the NRC prepares as part of the relicensing process (see NUREG-1437). (0321-16 [Mahowald, Philip R.]

**Comment:** So I think that at least you should consider groupings of reactors. But in some respects because if you look at Iowa or Kansas or Nebraska, all of these environments are very unique to the economy and ecology of this country so, or if you look at the reactors in California and how Diablo Canyon might affect the unique ecology of Monterey Bay, you're going to have a very, very hard time. (0004-6-4 [Makhijani, Arjun])

**Comment:** Anything that generates large amounts of waste that need to be stored safely out of harm's way for three thousand years is inherently dangerous--which is why I oppose nuclear power. (0003-6 [Adams, Grace])

**Comment:** I would just like to put forth the preferred action alternative of stop making it. Stop licensing atomic reactors. That is what needs to happen. (0004-11-4 [Kamps, Kevin])

**Comment:** The NRC should also identify alternative actions, including the most obvious, which would be the no-action scenario of keeping reactor licensing and not creating new radioactive waste. (0004-12-5 [Barczak, Sara])



**Comment:** The alternative to not grant such licenses, must include looking at the impacts and beneficial outcomes of stopping fuel production and closing these facilities sooner rather than later. (0004-13-7 [French, Dominique])

**Comment:** We call upon NRC to completely eliminate the waste confidence rule because it is a general rule, it cannot apply to the 65 different commercially operated nuclear power plant sites across the United States. Each site is different and should be treated as such. There should be individual plant environmental impact statements. (0004-14-3 [Zeller, Lou])

**Comment:** I wonder, what is it going to take? If somebody said I know the people I'm talking to were not involved in this happening. They did not decide that we needed nuclear fission to heat water, to make power, to make energy which was really steam generators that were doing it. We need to think about Oak Ridge and the Savannah River Plant, Los Alamos and Rocky Flats. These are all reality sources; the type of evidence that we need that the Nuclear Regulatory Commission and the Department of Energy need to use in making decisions, not list a whole bunch of references that are mainly from their own agency. (0004-17-1 [Thomas, Ruth])

**Comment:** We [Alliance for Nuclear Accountability] don't have a whole lot of confidence in our ability to safeguard this waste, and that's not a reflection on your work, it's a reflection on the material that we're dealing with and, therefore, we don't believe we should be making more of it. (0004-18-9 [Fuchs, Katherine])

**Comment:** And, finally, I would say that there was some question raised today about what is the alternative to be considered in the context of this particular environmental impact statement? And I really submit that we are already in the space of dealing with the alternative. The court remanded the question, but what about the case where there is no repository available, and that is the alternative to a repository. So, I think the question of what is the alternative here is a little bit of a -- perhaps not the right question and it certainly raises hypothetical potentials that don't make a lot of sense here because I think the alternative to no repository is to have a repository and, in fact, that's what the Nuclear Waste Policy Act contemplates and I think that's certainly what the nuclear industry contemplates. (0004-20-6 [Repka, David])

**Comment:** The notice says it's the intent of NEPA to have federal agencies consider environment issues. Well NEPA requires a lot more than considering environment issues. And, you know, it requires analysis of specific alternatives, no-action alternatives. I was really glad to hear that you have a no-action alternative. So I was very reassured by that, that you are going to consider what happens if there's no waste confidence decision, which means, you know, for example, that you won't license any more reactors or re-license any more reactors. (0004-6-2 [Makhijani, Arjun])

**Comment:** The D.C. Circuit defined the major federal action as the waste confidence rule itself. So I would suggest that we be careful in the agency in particular be careful in describing alternatives as opposed to scenarios. The alternative to the rule are several. One is the no-action alternative, meaning that there is no rule promulgated or -- proposed or promulgated. Another as was described in CLI, I believe it's 1216, is a policy statement or an order or an EA and EIS that could be incorporated in site-specific analyses. I think that is an important distinction that as you scope the rule, the EIS, you make sure that you're careful about the parlance you use. (0004-7-6 [Ginsberg, Ellen])

**Comment:** After 60 or more years of producing radioactive waste, we still don't have a plan for safe disposal. That's three generations. We're collectively flying by the seat of our pants or hems of our skirts trying to solve a possibly unsolvable problem. We know these materials are dangerous for millions of years. So we need to stop making the waste. We need to stop issuing licenses for aging reactors, develop a sustainable energy plan in sync with the systems of the earth, water, weather, seismic activity, and with all life forms inhabiting our planet. (0005-11-5 [Star, Priscilla])

**Comment:** We really need solutions to everything, and, you know, especially our -- we have so many other energy ways to get energy with the sun and everything else. We really need to do away with it, period. (0005-13-1 [Shoop, Pamela])

**Comment:** So I think as Americans, if I could just say one thing, it's really time to wake up to think about what sort of a situation we're promoting in our military industrial base. And that's sort of what it gets down to, because once you create all these nuclear power plants, they then feed into reprocessing the fuel again and to nuclear warfare. And I don't think that, that's something that our general public has really caught onto. (0005-14-1 [Iwane, Cathy])

**Comment:** I'll just say we need to stop producing nuclear waste, and there's no solution that's been proven so far. (0005-15-1 [Leonardi, Michael])

**Comment:** I mean, I would like to know -- I mean, as we're going through the scoping process, and since we don't really have an idea exactly where we're going to store waste, why are we fast tracking new reactors, new nuclear power plants? I mean, I'm a little concerned that we for many decades have not had a place to store it and yet we're going forward with these environmental impact statements, but at the same time we're planning to build more nuclear power plants. And so, I mean, frankly, I think that we should probably pause until we have an idea what we're going to do with all the waste that we already have made. So why are we going forward with the new nuclear power plants? And plus, I'd like to say that doesn't seem like there's much public participation in having these power plants built. (0005-3-1 [Gray, Erica])

**Comment:** I'm coming on late to this conference call, so I don't know what was said before me, but we've had all these years to figure out a waste solution, and you guys continue to make waste. And I don't think anybody would buy a house where there was no way to remove the garbage from the house that was made on a daily basis. Why would we continue to buy into a system that continues to make waste with no way of getting rid of it, where it's deadly for 240,000 years? So it needs to stop, and you need to consider the health and welfare of the planet, and the people, and humanity, and living things that are on it, and the terrible danger that it poses to us as a civilization as witnessed by what's going on in Fukushima now. How in good conscience can you possibly continue to make more waste, more deadly waste when you can't figure out a way of in, what, 60 years of getting rid of what you've already made? (0005-8-1 [Lieberman, Andrea])

**Comment:** All licensing should be halted until a safe solution is found. (0012-3 [Pelizzari, Roger])

**Comment:** We need to address the risks of nuclear waste disposal before any U.S. nuclear plant, including Indian Point, may be licensed or re-licensed. (0027-2 [Eisenstark, Sarita])

**Comment:** As required under the NEPA, EIS must include alternatives and each alternative must be rigorously explored and objectively evaluated. Reducing the amount of spent fuel could

be one option. This can be accomplished by halting issuance of new reactor licenses and license renewals. The cost and benefit of this alternative should be explored. (0038-8 [Goze, Yunjoo])

**Comment:** Any chance you will address the risks of nuclear waste disposal before any including Indian Point, may be licensed or re-licensed? (0040-1 [Landau, Doug])

**Comment:** Until permanent safe storage methodology and sites have been identified, I believe NO further waste should be produced and temporary storage sites should be far from any populations. (0041-2 [Kersting, John])

**Comment:** Best case scenario would be to stop the use of nukes entirely and eliminate further production of waste. (0042-1 [Chischilly, Jane])

**Comment:** The Court's decision forces the NRC to address the risks of nuclear waste disposal before any U.S. nuclear plant, including Indian Point, may be licensed or re-licensed. This reckoning is long overdue. (0044-2 [Mohan, Debi])

**Comment:** Make the moratorium on reactor licensing last as long as the longest complete radioactive decay. (0046-1 [Hoffman, David])

**Comment:** We need to immediately stop all production of nuclear waste. (0048-4 [Forlie, Kai Mikkell])

**Comment:** We need to STOP making this waste. We need to stop issuing licenses for aging reactors. (0049-8 [Laramie, Eve])

**Comment:** Spent fuel, which I prefer to call radio-active waste, is harmful to life forms for a long time. All the people and other life forms that might encounter fuel spent for our needs, may not be able to decipher your warning signs. Have we the right to present a hazard to them? For that reason, the DEIS should consider not building any more nuclear reactors. (0053-2 [Unger, Art])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. (0062-1 [Jessler, Darynne])

**Comment:** NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. This includes the rejection of any more combined Construction and Operating License Applications (COLAs) for proposed new atomic reactors.... (0062-2 [Jessler, Darynne])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. (0063-1 [Matsuda, Thomas])

**Comment:** NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. (0063-2 [Matsuda, Thomas])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. (0064-1 [Clark, Kenneth])

**Comment:** This [preferred alternative] includes the rejection of any more combined Construction and Operating License Applications (COLAs) for proposed new atomic reactors. (0064-2 [Clark, Kenneth])

**Comment:** But this [preferred alternative] also includes the rejection of any more 20 year license extensions. (0064-3 [Clark, Kenneth])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. This includes the rejection of any more combined Construction and Operating License Applications (COLAs) for proposed new atomic reactors... (0068-2 [Sheridan, Paul])

**Comment:** ...[S]top making irradiated nuclear fuel. Cease licensing new atomic reactors, and no more license extensions. (0069-2 [MacWaters, Chris])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. (0071-2 [Bartholomew, Alice])

**Comment:** This [preferred alternative] includes the rejection of any more combined Construction and Operating License Applications (COLAs) for proposed new atomic reactors. (0071-3 [Bartholomew, Alice])

**Comment:** Preferably stop making irradiated nuclear fuel and cease licensing atomic reactors. (0072-1 [Shuput, Steve])

**Comment:** Reject more COLAs for new atomic reactors. (0072-2 [Shuput, Steve])

**Comment:** Reject any more license extensions. (0072-3 [Shuput, Steve])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. (0074-1 [Derbigny, Rodney])

**Comment:** And it [the EIS] should include the preferred alternative of stopping the generation of any more high-level radioactive waste at commercial atomic reactors. (0077-2 [Bosold, Patrick])

**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, which is deadly for at least a million years. This includes the rejection of any more combined Construction and Operating License Applications (COLAs) for proposed new atomic reactors, such as those recently rubberstamped by NRC at Vogtle, GA and Summer, SC. But this also includes the rejection of any more 20 year license extensions, as NRC has approved for 73 reactors since the year 2000. (0077-3 [Bosold, Patrick])

**Comment:** I believe that we should be in the business of decommissioning only, allowing no more new reactor licenses. (0079-3 [Haasch, Jane E])

**Comment:** The NRC should prevent the generation of irradiated nuclear fuel by denying licensing of proposed new nuclear reactors and denying more 20-year license extensions. (0080-1 [Cochran, Moncrieff] [Maurer, William])

**Comment:** The NRC should prevent the generation of nuclear fuel by denying licensing of proposed new nuclear reactors and denying more 20-year license extensions. Nuclear plants generate high-level radioactive waste, which is deadly for at least a million years and for which no safe transport and storage methods exist. (0084-1 [Vale, Karen])

**Comment:** It should also identify the no-action alternative: the cessation of licensing and relicensing, which would halt further production of spent fuel. (0085-4 [Curran, Diane] [Fettus, Geoffrey] [Goldstein, Mindy])

**Comment:** The US should follow in that example. The best option is simply to no longer make ANY nuclear waste. Period. (0092-1 [Kukovich, Kenneth M.]

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0115-1 [Abbott, Dana] [Aguilera, Marco] [Alexander, Kathleen] [Allen, Melissa] [Amel, Dean] [Anderson, Stevie] [Angst, Sara] [Anonymous] [Anonymous] [Baekstrom, Chris] [Baier, Mary Ann] [Bartolacelli, Richard] [Bateman, Guy] [Benes, Michelle] [Bennett, Paul] [Berman, Gary] [Bertha, Bertha] [Bishop, Damon] [Blakely, Naomi] [Blevins, Katherine] [Block, Gary] [Bottomley, Pat] [Bratcher, Deborah] [Brimm, Martha] [Brown, Beth] [Bruce, Buffalo] [Buenzle, Tom] [Burke, Barbara] [Burns, Alan] [Burpo, Leslie] [Cappelletti, Regina] [Carberry, Mike] [Carrigan, Milton] [Caswell, Richard] [Cavalier, Corey] [Cherwink, Rob] [Clark, Carolyn] [Clausing, Mary] [Clucas, Donald] [Cockerill, Marc] [Cohen, Judy] [Collins, Carol] [Craig, Anne] [Craig, Carol] [Curllette, Diane] [Davies, Phyllis] [Davis, Randall] [De Cecco, Jorge] [DeMarsh, Julianne] [Dimitri, William] [Doucet, Lisha] [Eichelberger, Don] [Elliot, Ed] [Espinosa, Sally] [Estes, Douglas] [Evans, Dinda] [Falk, Melba] [Feldman, Jane] [Flowers, Bobbie] [Foley, Brian] [Forbes, Jane] [Foskett, MaryAnna] [Fouche, David] [Frankfurter, Aryeh] [Fronce, Linnea M.] [Gibble, Joia] [Gilva, Stephen] [Goldin, Martha] [Goodell, Barbara] [Gosnell, Lisa] [Graves, N.] [Gupton, William] [Hadovsky, Linda] [Halizak, Kimberly Anne] [Hall, Silvia] [Hannah, Rober] [Hansen, Jan] [Hanson, Art] [Hanson, Natalie] [Hargrove, Chris] [Harkins, Lynne] [Haschke, Becky] [Hauke, Molly] [Hendin, Judith] [Hill, Michael] [Horvat, Sabolch] [Howard, Gloria J] [Hughes, Kevin] [Hutchings, William] [Iversen, Gerald] [Jenkins, David] [Jones, Robert] [Jorgensen, Andrea] [Joseph, Randy] [Jurek, James] [Katz, David] [Kenyon, Deborah] [Kiralla, Michael] [Kitman-Trimmer, Lorraine] [Knol, Patricia] [Kohl, Sybil] [Kotch, Brant] [Kunkel, Christopher] [Kutcher, Celia] [Lang, Michael] [Lanski, Christopher] [Larkin, Gail] [Larson, Jean] [Laurie, Annie] [Lazzarini, Howard] [Lester, Janet] [Levin, John] [Lorwin, Lisa] [Lukas, James] [Lynch, Janette] [Marcus, Jack Davis] [Margos, J.F.] [Martin, Brad] [McCall, Charles] [McCollum, Brian] [McDonough, Susan] [Morello, Phyl] [Morris, Daniel] [Moyer, Heather] [Mueller, Kirstin] [Oberlin, Carl] [Oconnell, Daniel] [Oehler, Susan] [O'Leary, David] [Page, Nicholas] [Palmer, R. Brent] [Payton, Renee] [Peirce, Susan] [Pfaelzer, Morgan] [Pino, Dolores C.] [Priestly, Meredith] [Prior, Barbara] [Prola, Jim and Diana] [Rafacz, Bernard] [Rattner, Ron] [Reel, Joseph] [Reischke, Ysan] [Ribnick, Lawrence] [Rigby, Cheri] [Robertson, Kenneth] [Robinson, Julie] [Rosen, Kay] [Rupar, Randy] [Ryan, Sarah] [S., Erin] [Schweiss, Kraig and Valerie] [Settanni, Anne] [Seyfried, Mike] [Shaffer, Matthew] [Shafnisky, Luke] [Shea, Kelly] [Shifrin, Allen] [Simmons, Carole] [Simmons, Ymani] [Skrzynecki, Richard] [Slade, Matt] [Smith, Wiley] [Sparks, Jeanne] [Stadnik, George] [Stavelly, Jary] [Stein, Julia] [Stone, Lisa] [Strawn, Michael] [Struble, Dan] [Szokolai, Maria] [Tallent, Yvonne] [Tepper, Carol] [Trager, Jami] [Unknown, Ralph] [Vaughan, Leila] [Vora, Davina] [Walters, Catherine] [Watts, Elizabeth] [Wedow, Nancy] [Wildermuth, Gordon] [Williams, Terry J.] [Wolski, Mike] [Wong, Houston] [Woodcock, Charlene] [Wynne, Diane] [Young, Nancy] [Zamek, Jill] [Zerzan, Paula])

**Comment:** And just recognizing that we've created this problem for mankind going forward and recognizing the depth and breadth of the problem that it's folly to continue producing this material. And so ceasing the creation of the material for the ephemeral electricity that is gone as soon as you make it, especially in the light of the technologies that are advancing in terms of wind power, solar power and who knows what, to make electricity, is going to be developed. It's just folly to continue spreading these atoms and creating this waste just to boil water to make electricity. So, I'd like to see something of a new look, instead of this tired, old approach that has clearly failed and billions of dollars have been spent. And many of the best minds in the world have worked on and to no really appreciable result. (0118-16-4 [Safer, Don])

**Comment:** And the impacts of NRC approving new reactor licenses or old reactor license extensions on future generations, which will inherit these wastes when that need not happen. We could, you know, an ounce of prevention is worth a pound of cure. We could simply not generate the 100,000 tons of additional waste that is envisioned by 2050, if NRC simply does not approve anymore permits for generating high level waste. (0118-17-14 [Kamps, Kevin])

**Comment:** And just to end here, the preferred alternative that we would like to have NRC look at carefully, is the not allowing reactors to operator into the future. So denial of new reactor construction and operating license applications. And also denial of 20 year license extensions at old reactors. That is a preferred alternative that should be considered. (0118-8-3 [Kamps, Kevin])

**Comment:** I believe that all relicenses that have been issued should be rescinded pending compliance with new standards. According to the way the NRC works, people -- operators -- licensees whose license is out of date get to continue operating anyway. So that shouldn't be a problem for your industry. Certainly no new licenses to generate more radioactive waste should be allowed given that we don't know what to do with it and you're trying to rush through this process of figuring out what can be done with it. (0119-6-4 [Agnew, David])

**Comment:** The next point is the safest solution to the storage of the waste is to stop making it in the first place. It's proven that there isn't anywhere safe for it. Nobody wants it in their backyard. And there's been so much arguing about it. So let's just stop making it and deal with what we have. (0119-7-3 [Sorensen, Laura])

**Comment:** And then finally I just want to say the decision process creates radioactive substances that do not exist in nature. We cannot change the length of time they need to be isolated from the environment. And we can't change the health effects that radiation has on human beings. There's no cure for that. The NRC must operate by the scientific rule of thumb. There is no safe dose of radiation -- period. If nuclear power and waste was safe, we wouldn't be discussing this matter. We wouldn't have court orders. We wouldn't have scoping hearings. We wouldn't have EIS statements. We would just stop making it. And I think it's time to stop making it. (0119-7-5 [Sorensen, Laura])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. (0121-1 [Howard, Gloria J])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the

environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0124-1 [M, Teresa])

**Comment:** The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0125-2 [Puett, David])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0127-1 [Mac Kkrell, Thomas])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0128-1 [Hasselgren, Joan])

**Comment:** Since there has been no agreed upon location for mass storage of "spent" radioactive fuel and fuel rods, the NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0129-1 [VanWicklen, Betty J.]

**Comment:** The need for safety in the storage of spent fuel has been inadequately addressed in this country for years. Eventual elimination of nuclear power is the only public policy that is defensible. (0132-1 [Schwartz, Eric])

**Comment:** While the problem of temporary storage is real, even acute, the real problem is continuing to generate more and more of the stuff every day, with no viable solution on the horizon. (0136-1 [Rea, Paul])

**Comment:** There must be a separate environmental impact statement for each individual storage facility and each time more waste is added to thre storage at that facility. Conditions are different at each facility and what may be acceptable at one may not be at another. One EIS for the entire country is insufficient. (0140-1 [Handelman, Robert])

**Comment:** There ought to be a separate EIS for each site because each site poses different challenges for storage. (0141-1 [Mainland, Edward])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. (0145-1 [Slezak-Fritz, Joan])

**Comment:** Every community housing such waste should have the right to a full NEPA-compliant review of all of the potential environmental impacts of a failure of spent fuel storage on their community and region. (0147-2 [Shaw, Sally])

**Comment:** Put forward a plan to reduce future waste, not continue to encourage its production and importation. (0148-7 [Lampert, Mary])

**Comment:** Instead idual Environmental Impact Statements for each site determining the impact of creating and storing radioactive waste on each reactor site makes the most sense. (0153-1 [Jones, Virginia])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0157-1 [Kraft, Dave])

**Comment:** We should first stop making any new waste. (0158-1 [Hartman, Randall])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and relicensing mature reactors. (0161-1 [Coleman, Chrystal])

**Comment:** Thus it is fitting and imperative that environmental review for licensing and renewal for each plant include INDIVIDUAL as well aggregate environmental impact reports for storage of nuclear waste. (0175-1 [Chapman, Robin])

**Comment:** I urge that you require a separate EIR for each nuclear waste reactor and/or storage site. (0177-1 [Amon, Daniela])

**Comment:** Please require an Environmental Report for on site storage before renewing or licensing new plants. (0182-1 [Waddell, W. Duane])

**Comment:** I do not feel we need nuclear power to thrive but, if you must consider further plants, get rid of all the waste accumulated and figure out how to get rid of additional waste without leaving toxic residues before considering building another or extending the life of old plants. (0186-1 [Forbes, Melinda])

**Comment:** Discontinue NRC licenses enabling atomic reactors to generate high-level radioactive waste. (0187-1 [C, John])

**Comment:** No more NRC licenses enabling atomic reactors to generate high-level radioactive waste. (0189-1 [Valtri Burgess, Vivian])

**Comment:** There should be no more nuclear licenses issued until there is no waste resulting from these activities with a half life of more than 150 years. (0193-1 [Stanley, Edh])

**Comment:** I am opposed to granting any more NRC licenses enabling atomic reactors to generate high-level radioactive waste. (0194-5 [Selquist, Donna])



**Comment:** The preferred alternative is to stop making irradiated nuclear fuel. NRC should cease licensing atomic reactors, which inevitably generate high-level radioactive waste, deadly for at least a million years. This includes the rejection of any more combined Construction and Operating License Applications (COLAs) for proposed new atomic reactors, such as those recently rubberstamped by NRC at Vogtle, GA and Summer, SC. But this also includes the rejection of any more 20 year license extensions, as NRC has rubberstamped at 73 reactors since the year 2000. (0198-1 [Brown, Deb])

**Comment:** Each nuclear plant should be separately evaluated for the safety of its storage of spent fuel and a long term plan put in place to assure that safety in the future. as well as a system to keep the public regularly informed as to actual conditions and possible dangers. (0201-1 [Armstrong, Robert F.]

**Comment:** Please consider changing the waste management rule on individual nuclear power plants. (0202-1 [Wollman, Michael])

**Comment:** We currently have no safe way to transport, store, or neutralize spent nuclear fuel apparatus. We therefore need to halt continued use of nuclear fuel, and concentrate on SAFE, RENEWABLE energy. (0210-1 [Slotnick, Lauryn])

**Comment:** ...[T]he only sensible course of action is to stop making more spent fuel. Therefore, the scope of the Waste Confidence Decision and Rule must include the alternative of discontinuing the production of spent nuclear fuel by not licensing any new reactors and decommissioning all existing reactors. (0213-4 [Taylor, Wallace])

**Comment:** So the Iowa Chapter of the Sierra Club respectfully requests that the scope of the EIS for the Waste Confidence Decision and Rule include the alternative of not producing any more radioactive waste. (0213-7 [Taylor, Wallace])

**Comment:** I urge the NRC to include in the EIS scope the preferred alternative of the agency not approving any more new reactor combined Construction and Operating License Applications (COLA), nor approving any more old reactor 20-year license extensions. (0215-1 [Savett, Adam])

**Comment:** I oppose the Temporary Storage of spent Fuel after Cessation of Reactor Operation for these reasons: Atomic reactors should not be generating high-level radioactive waste. What is the preferred alternative of the agency not approving any more new reactor combined Construction and Operating License Applications (COLA)? (0216-4 [Cobb, Sandra])

**Comment:** However, the best option is to no longer make any nuclear waste. (0227-4 [Murtha, William])

**Comment:** Please amend the NRC licensing and relicensing process to require an individual Environmental Impact Statement for waste at every individual nuclear plant. (0231-1 [Henry, Beth])

**Comment:** Using temporary storage facilities for spent fuel until a final permanent storage site is created, will provide an indefinite alibi to avoid finding a permanent solution to nuclear waste. Fifty years ago the assumption was that there would be a permanent storage solution in the near future. Now in 2012, there still isn't a solution anywhere on this planet. We need to stop

creating this waste and focus on finding a safe permanent storage facility for what we have created in the last 50 years. Other countries are faced with the same storage issue and as residents of this planet, we should use the professionals in the nuclear and environmental industry to find a safe permanent storage facility for all nuclear waste. (0234-1 [Cunningham, Kristine])

**Comment:** The NRC must change its nuclear reactor licensing process to require an individual Environmental Impact Statement for each site determining the impact of creating and storing radioactive waste on each reactor site. The health and safety effects on communities and the environment in proximity to each site needs to be carefully considered individually before granting new licenses and re-licensing mature reactors. (0236-1 [Scott, Cathy])

**Comment:** The first step is to halt production of nuclear waste, which means shutting down existing nuclear power plants. (0237-3 [Thomas, Ruth])

**Comment:** [The] EIS should include the elimination of making more irradiated nuclear fuel waste. This should include no new licenses, no license extensions, and expiration of existing licenses. (0241-1 [Ower, Douglas])

**Comment:** All relicenses issued to date should be rescinded pending compliance with new standards. No new licenses to generate additional radwaste should be allowed. (0242-4 [Agnew, David])

**Comment:** Should be EIS not GEIS. given power station designs, geographic features such as rivers, flood zones, dams, ocean, population, flight paths, SFP within or outside of containment, containments that cannot contain, etc, each reactor is unique. (0242-7 [Agnew, David])

**Comment:** Since we have no way to safely store radioactive waste- that stays lethal for centuries--how dare we continue to produce it. No new reactors, please. (0243-1 [Fast, Wendy])

**Comment:** Thus, my expectation would be an EA or EIS for each location where spent civilian nuclear power fuel is stored. (0246-1 [Kohler, Joseph])

**Comment:** The first answer to the waste problem is to stop licensing and relicensing nuclear power reactors. ABSOLUTELY STOP. MAKE THE CURRENT MORATORIUM ON LICENSING A PERMANENT ONE. ALSO SHUT DOWN NUKES CURRENTLY OPERATING SO THAT MORE WASTE IS NOT MADE. (0247-3 [Geary, B.])

**Comment:** Please STOP LICENSING and RELICENSING nuclear reactors! (0248-1 [Lemon, Patricia])

**Comment:** There is NO Temporary Storage of spent fuel that can contain the radioactive dangers. This is a fact known to anyone educated in these matters. Man has not found a safe way to contain spent fuel and for that reason, it is insane to continue building Reactors. Facts dictate a moratorium on Nuclear permits immediately. Not to do so is irresponsible and deadly to our planet and to the inhabitants thereof. (0249-1 [Reynolds-Sparks, Darla])

**Comment:** This is why we say NO MORE!! Shut them down and build no more new ones. (0251-3 [Hatley, Earl])

**Comment:** I urge that you take favorable action on the WILPF Disarm/End Wars Committee's request that the NRC stop generating any more radioactive waste and not move any radioactive waste from existing sites until a permanent storage solution has been found. (0252-2 [McCollough-Howard, Celeste])

**Comment:** I urge you to make permanent the court-ordered moratorium on issuing operating licenses to new reactors, to no longer issue license extensions to operating reactors, to rescind all license extensions already issued to operating reactors, and to implement and oversee the earliest safe cessation of all U.S. reactor operations. (0253-1 [Birnie, Patricia])

**Comment:** I would like to highlight the forth point being that a of the EIS must include the requirement that there be no further production of this waste; based on no further licenses, no license extension and expiration of existing licenses. Inclusion of this alternative must include a consideration of the environmental and health consequences of the production of nuclear fuel since commercial production of nuclear fuel would be phased out under this alternative, but not others. (0257-1 [Anderson, Johanna])

**Comment:** Since this waste problem has existed nearly 50 years, and no satisfactory solutions have been found, it is time to end the building of nuclear powerplants. (0258-2 [Homer, Deanna])

**Comment:** Include and fully assess this EIS alternative: "All existing nuclear power plants shall cease generating any additional spent nuclear fuel; this being the most effective means to end the ongoing accumulation of wastes that has not been managed and fully disposed. This alternative includes cancellation of all operating licenses; only providing for closure and removal of spent fuel and associated wastes." (0262-5 [Andrews, Richard])

**Comment:** Include and fully assess this EIS alternative: "No additional spent fuel and associated irradiated/radioactive materials shall be produced by any operator until a final off site repository has been constructed and fully commissioned and all such materials have been removed from temporary storage." (0262-6 [Andrews, Richard])

**Comment:** The WCD EIS will comprise only one aspect of the larger environmental analysis relied upon by NRC in issuing initial or renewing existing reactor licenses. Thus, the "no licensing" alternative is most appropriately considered in the environmental analyses supporting the major federal actions of licensing or relicensing a power reactor. (0263-22 [Ginsberg, Ellen])

**Comment:** To address the remand and comply with NEPA, the EIS should assess only the reasonably foreseeable environmental impacts of onsite storage of spent fuel after the licensed life of the reactor, any reasonable alternatives that serve the same purpose and need, and any reasonable alternatives to mitigate environmental impacts. The EIS need not assess the environmental impacts of the licensing or renewed licensing of nuclear plants, or alternatives to those actions. Site-specific licensing actions are major Federal actions accompanied by their own generic or site-specific EISs, which assess the environmental impacts related to plant operation, as well as alternatives. (0263-5 [Ginsberg, Ellen])

**Comment:** Given that the present proposed action is a rulemaking to adopt generic findings related to interim onsite storage of spent fuel after the licensed life of a plant, one alternative to a rulemaking might be to address those issues on a case-by-case basis. However, that

alternative would involve unnecessary, duplicative, and inefficient use of NRC and applicant resources. (0263-6 [Ginsberg, Ellen])

**Comment:** One of the options that the EIS must include is no further production of this waste; based on no further licenses, no license extension and expiration of existing licenses. Inclusion of this alternative must include a consideration of the environmental and health consequences of the production of nuclear fuel since commercial production of nuclear fuel would be phased out under this alternative, but not others. NEPA requires that impacts that are tied together by causation be assessed together. (0266-4 [Anonymous] [Fisher, Allison] [Gale, Maradel] [Lish, Christopher] [Mariotte, Michael] [Sheridan, Paul])

**Comment:** Yet, no government agency in any country has been able to provide confidence that there is or ever will be a solution to the nuclear waste problem. Therefore no analysis of the environmental impact of nuclear waste can be considered complete without acknowledgment of this fact and its obvious implication: that the continued generation of nuclear waste only adds to the intractable nuclear waste problem. (0269-1 [Warren, Barbara])

**Comment:** Therefore, the NRC must make provision for site-specific analysis of factors that relate to spent fuel and a public process in each licensing decision. (0269-10 [Warren, Barbara])

**Comment:** Essential facts must be the basis for any EIS analyzing nuclear waste.

Fact: Nuclear power creates nuclear waste.

Fact: There is NO technical or scientific solution to the nuclear waste problem. This fact alone makes nuclear energy unsustainable.

Fact: More Nuclear Reactors = More Nuclear Waste.

A key principle of Zero Waste approaches is to stop generating waste.

NRC must acknowledge these essential facts. The EIS is the place to answer the question - How can we stop generating nuclear waste? (0269-14 [Warren, Barbara])

**Comment:** An Alternatives analysis is a typical part of any EIS. Once the NRC determines the proposed action, it needs to conduct an analysis of alternatives for all or part of the proposed action. The best way to protect the environment and the public from nuclear waste hazards is to first stop licensing atomic reactors, thus stopping the generation of additional nuclear waste. There are plenty of economically viable, environmentally preferable alternatives to nuclear power generation, and these must be thoroughly considered. The possibility of rejecting licenses for the construction of new reactors and the rejection of applications for license renewal must be considered. (0269-15 [Warren, Barbara])

**Comment:** The EIS must study reducing the generation of nuclear waste as a key alternative strategy to siting permanent repositories or interim storage sites. (0269-21 [Warren, Barbara])

**Comment:** The No Action Alternative Must Be Clearly Stated. (0271-18 [Fettus, Geoffrey])

**Comment:** In addressing the "No Action Alternative," the EIS must analyze the option of barring additional production of this SNF; based on no additional licenses, no license extension and expiration of existing licenses. Inclusion of this alternative must include a consideration of the environmental and health consequences of the production of nuclear fuel since commercial production of nuclear fuel would be phased out under this alternative, but not others. (0271-19 [Fettus, Geoffrey])

**Comment:** In addition, the EIS should analyze an alternative that considers whether any generic waste confidence rule should exist at all and instead consider replacing it with a facility-by-facility approach that is informed by generic guidance from the NRC, but that does not involve a presumption of confidence. (0272-15 [Weisenmiller, Robert B.]

**Comment:** We believe the NRC should completely eliminate the waste confidence rule. Because it is a general rule, it cannot apply to the 65 different commercially operated nuclear plant sites across the US. Each site is different and should be treated as such. There should be individual plant environmental impact statements. (0273-4 [Zeller, Lou])

**Comment:** [T]here should be no new nuclear power plants built. (0274-10 [Sorensen, Laura])

**Comment:** Because the nuclear fuel cycle is incomplete, we [SAFE Carolinas] assert the continuation of nuclear power as an energy source is irresponsible. (0274-2 [Sorensen, Laura])

**Comment:** [SAFE Carolinas] [d]oes not support the continuation of nuclear power plants due to the unresolved spent fuel issue since the beginning of the nuclear industry. (0274-5 [Sorensen, Laura])

**Comment:** The EIS should explore all reasonable alternatives to continued generation of nuclear wastes and continued storage of nuclear wastes at reactor sites in the manner now allowed, including prohibiting further production of nuclear wastes until the Commission can determine that there is date by which a permanent, safe, and secure repository will exist for disposing of nuclear wastes. New York, 681 F.3d at 474 ("The lack of progress on a permanent repository has caused considerable uncertainty regarding the environmental effects of temporary SNF storage and the reasonableness of continuing to license and relicense nuclear reactors."). The EIS should also explore measures that would mitigate the adverse impacts of continued production of nuclear wastes - i.e. alternatives to indefinite use of spent fuel pools, such as transfer to dry cask storage at the earliest possible time and establishing off-site permanent nuclear waste storage facilities at secure locations like military bases, to mention only a few. (0275-14 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** This latest version of the waste confidence decision once again involved an attempt by the Commission to avoid the questions that are at the heart of the dispute about nuclear wastes specifically, what are the environmental impacts that are reasonably possible to occur if nuclear wastes are left at the reactor sites where they were generated for an indefinite period of time; what alternatives exist that would mitigate those impacts, including precluding further generation of nuclear wastes; and what are the relative costs and benefits of the proposed action and each of the alternatives. (0275-4 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** Because of a lack of long-term storage and permanent disposal technologies and the lack of a geologically or politically acceptable location for the nation's irradiated fuel rods and related radioactive wastes, we [Women's International League for Peace and Freedom] urge the NRC to require and oversee the most expeditious cessation of the generation of nuclear reactor wastes. That is, we believe that all facilities that produce or use nuclear power reactor fuel should be shut down as soon as possible. (0277-11 [Roskos, Laura])

**Comment:** While the WCD is only applicable to the period after a reactor's license expires, the NRC acknowledges that it plays a critical role in the license issuance and renewal processes for reactors and spent nuclear fuel storage sites. Thus, broader questions related to the continued

generation of spent nuclear fuel are relevant to this EIS' process and the prospect of cessation of reactor licensing should be studied as a "no action" alternative. (0281-11 [Fuchs, Katherine])

**Comment:** There are several problems with the existing WCD EIS process, the most egregious failure being the lack of "alternatives" put forward. Minimally, the NRC is responsible for identifying and assessing a "preferred alternative" and a "no action alternative" Because a WCD is required in order to license nuclear power reactors it seems that a "no action alternative" would be not issuing a new WCD and an end to nuclear power reactor (re)licensing. NRC must explore multiple alternatives, including a "no action alternative," through this EIS process. (0281-3 [Fuchs, Katherine])

**Comment:** Commissioner McFarlane asserts that no-action would be for NRC to dispense with a "waste confidence" decision and instead do a site-specific analysis for the storage of waste for purposes of licensing. This should be evaluated, as should an action alternative of not granting any more licenses for waste generation. (0285-14 [D'Arrigo, Diane])

**Comment:** The no-action alternative is not to issue a WCD and not to license or re-license reactors. (0286-1 [Curran, Diane])

**Comment:** The EIS should analyze, in depth, the alternative of not issuing a new Waste Confidence Decision and Rule. (0286-88 [Curran, Diane])

**Comment:** The EIS should have a no-action alternative that would be the non-issuance of a waste confidence decision and rule and a continued suspension of new reactor licensing and existing reactor license extension actions until data to make scientifically valid impact estimates of the consequences of long-term storage of high burnup spent fuel are collected and analyzed. (0286-92 [Curran, Diane])

**Comment:** The No-Action Alternative should not rely on the No-Action Alternative of the Yucca Mountain EIS for its conclusions or analysis. Among other things, the environmental impacts in the Yucca Mountain EIS No-Action Alternative were deliberately underestimated by the DOE. (0286-93 [Curran, Diane])

**Comment:** I would like to highlight the forth point being that a of the EIS must include the requirement that there be no further production of this waste; based on no further licenses, no license extension and expiration of existing licenses. Inclusion of this alternative must include a consideration of the environmental and health consequences of the production of nuclear fuel since commercial production of nuclear fuel would be phased out under this alternative, but not others. (0287-2 [Anderson, Johanna])

**Comment:** The availability of a permanent repository for spent nuclear fuel is not at all certain. "Indefinite" storage can be for a very extended period of time, perhaps forever. The Alliance encourages the NRC to develop a "no action" alternative that acknowledges this reality, including the environmental consequences of continuing to license or relicense reactors. (0288-2 [Brailsford, Beatrice])

**Comment:** Each nuclear plant site is different and each plant should have its own environmental impact statement. (0290-5 [Craig, Anne])

**Comment:** First and foremost, there should be an end to generation of radioactive waste. [This would assume no new nuclear power plants, no production of nuclear weapons etc.] (0293-1 [Karpen, Leah])

**Comment:** The first thing to do to, is to reduce the amount of nuclear waste needing to be managed for as long as it is dangerous to biological life forms. The most obvious and direct way to do this is to stop making more nuclear waste. Shut down the factories making nuclear waste. (0295-1 [Larson, Dennis])

**Comment:** The EIS must include a "no action alternative" and an alternative so stopping nuclear waste production, until a permanent storage facility exists. (0296-40 [Shapiro, Susan])

**Comment:** The Draft EIS must contain analysis of the environmental effects of the proposed action and reasonable alternatives, including the "No Action" alternative. (0298-6 [Johnson, Abigail])

**Comment:** Alternatives that could be considered include delaying issuance of a new rule for some specified time frame while additional information needed to make a determination is gathered... The EIS should also consider the impacts of a finding of "no waste confidence" as part of the alternatives analysis. (0298-7 [Johnson, Abigail])

**Comment:** Alternatives that could be considered include...the No Action alternative of not licensing new reactors until the time frame for a repository is better defined. (0298-8 [Johnson, Abigail])

**Comment:** I believe we already have more than enough shelterless radioactive waste. It's time to stop making it. (0300-1 [Drey, Kay])

**Comment:** Stop this nuclear nonsense as we all know there is no safe handling of this stuff. There are no safe places to store the waste and, more importantly, nobody who is not economically invested in this wants this. (0303-1 [Kulp, Judy])

**Comment:** Whatever name you use for it, the problem is the same we don't really have any way to get rid of it [nuclear waste, spent rods, nuclear garbage], except to bury it but it will still be there 1,000,000 years later. We really need to stop making it. (0304-1 [Howard, Gordon])

**Comment:** ...address the risks to the public from the current stock of nuclear generators before licensing the construction of new reactors. (0315-4 [Pirch, Charlotte])

**Comment:** LACK OF A LICENSED, PERMANENT DISPOSAL SITE FOR IRRADIATED FUEL RODS: We believe it is imperative to halt the continuing generation of radioactive waste at nuclear reactors. We urge the NRC to deny any licenses of new reactors, to deny requested license extensions for operating reactors, and to rescind recently issued license extensions --- unless and until, if ever, truly reliable and permanent radioactive waste technologies and disposal sites are developed. We [members of the GE Stockholders' Alliance (GESA)] believe that operating reactors should be required to cease operation at the earliest opportunity. The first reactors on line that should cease operation are the 23 General Electric Mark I BWR reactors and the eight GE Mark II BWRs, all of which have proven, undeniable design flaws. (0323-12 [Birnie, Patricia T.] )

**Comment:** No more NRC licenses enabling atomic reactors to generate high-level radioactive waste. NRC should include in its EIS scope the preferred alternative of the agency not approving any more new reactor combined Construction and Operating License Applications (COLA), nor approving any more old reactor 20-year license extensions. That way, no more high-level radioactive waste, for which there is no solution after 70 years of splitting atoms, will be generated. (0326-6 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** In short, STOP MAKING IT! The only safe, sound solution for high-level radioactive waste is to not make it (or, in NRC's case, allow it to be made) in the first place! (0326-7 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** I still question the wisdom of NRC's approval of the construction with no plan extant for safe waste disposal. In my opinion, NO WASTE IS THE SAFEST ALTERNATIVE. (0336-3 [Warshauer, Meira])

**Comment:** The NRC should, consistent with NEPA legal principles, utilize, adopt, incorporate by reference, or tier from existing analyses, including the NRC's 2010 waste confidence analysis and the Department of Energy's EIS issued for the Yucca Mountain repository to the maximum extent possible. In particular, the Yucca Mountain EIS no-action alternative analysis, which assumed that the Yucca Mountain repository would not be built, analyzes long term onsite storage at reactor sites, including the dry storage option. Two scenarios were considered: onsite dry storage with institutional controls for 10,000 years and onsite storage with the 100-year institutional control period, both of which were characterized by the Department as unlikely. DOE considered, among other things, impacts on surface and ground water and NRC requirements for fire protection. (0004-10-2 [Silverman, Don])

**Comment:** I would suggest that it would not be legitimate for you to rely on the Yucca Mountain EIS for anything. Of course we can read anything. We can be informed by anything. But to fail to do – so my first sort of main comment here just, you know, hearing your response to my question in a preliminary way and I'll probably say more about it in my written comments later, but I think that it would not be legitimate. And I play a lawyer on TV sometimes so it may be not even legally correct to rely on the DOE EIS in the sense that you would omit going to the beginning on every issue and doing your own analysis. You know I write footnotes. There are lots of things I don't agree with because I'm trying to say what's in that document, certainly you can do that. But I don't think you're allowed to agree with the DOE EIS without doing your own complete full and transparent analysis of it, including the no-action alternative or any other alternative that might be considered. That's my sort of initial reaction. (0004-6-1 [Makhijani, Arjun])

**Comment:** There's also been a number of comments on the use of the DOE EIS for Yucca Mountain. I would note that CEQ regulations specifically allow the use of product by other agencies and we think DOE is the expert agency in that regard. So it is entirely appropriate for the NRC to look at that in the context of the no-action alternative. (0004-7-3 [Ginsberg, Ellen])

**Comment:** All relevant material developed by NRC and DOE related to Yucca Mountain should be utilized in the preparation of the proposed EIS. (0244-2 [Lacey, L. Darrell])

**Comment:** The "no action alternative" in DOE's Yucca Mountain EIS provides sufficient scope and depth to fully evaluate the possibility that a repository will never be developed. This analysis



thoroughly bounded the environmental impacts of this extremely unlikely scenario, by evaluating two scenarios under which spent nuclear fuel would remain onsite. (0263-13 [Ginsberg, Ellen])

**Comment:** The US Department of Energy, 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, DOE/EIS-0250F (Washington, DC: DOE, February 2002) cannot be relied upon for analysis of the impacts of long-term storage of commercial spent nuclear fuel in the event no disposal facility is available in the foreseeable future. (0265-2 [Halstead, Robert])

**Comment:** The Yucca Mountain FEIS No-Action Alternative analysis for long term storage did not attempt to quantify the variability of estimated impacts related to possible changes in climate, societal values, technology, or future lifestyles. "To simplify the analysis, DOE did not attempt to quantify these uncertainties even though uncertainties with these changes could undoubtedly affect the total consequences reported in Table 7-7 by several orders of magnitude." [Page 7-41] Table 7-7 quantifies long-term collective drinking water radiological impacts under Scenario 2. It is expected that the scope of the NRC waste confidence EIS will include analyses that examine possible future states that were ignored in the Yucca Mountain FEIS No-Action Alternative impact analyses. (0265-5 [Halstead, Robert])

**Comment:** The Department of Energy's Yucca Mountain EIS No Action Alternative Analysis, which has already been adopted by the NRC, is sufficient to address the court's concerns regarding the possibility that a permanent long-term repository will never be developed. (0267-1 [Hill, Edwin])

**Comment:** Notwithstanding its own work performed to support every WCD up to the 2010 action, the NRC is not the sole source of information related to the potential environmental impacts associated with the storage, transportation, and disposal of high-level waste. An obvious source that cannot be overlooked is the Department of Energy's (DOE's) EIS to support its application for a repository in Nevada. Frankly, the DOE "No Action" alternative to licensing a permanent repository in the reasonably foreseeable future is analogous to the Commission's vacated WCD of 2010. While the NRC Staff cannot merely rely on that EIS, it can perform an independent evaluation of it to determine which parts of it are sufficient reliable that the NRC can take ownership of it. This is not a new concept; in fact, the NRC Staff already performed the review shortly after the DOE EIS was issued. (0283-2 [Zalcman, Barry])

**Comment:** The DOE's Yucca Mountain EIS does not provide a "bounding analysis" for the waste confidence EIS. NEI argues that the NRC can use the discussion of the no-action alternative in the U.S. Department of Energy's ("DOE's") Yucca Mountain EIS for its evaluation of environmental impacts of indefinite spent fuel storage in the event that no repository is sited. NEI Comments at 5. Moreover, according to NEI, "[o]nce the NRC addresses the scenario of no repository, it will have bounded the other scenarios and will have adequately supplemented the prior WCD findings." That assertion is simply incorrect, for several reasons.

The Yucca Mountain EIS's discussion of the no action alternative admittedly underestimates the impacts and is incomplete.

The Yucca Mountain EIS is, by its own terms, inadequate to substitute for a new environmental analysis here. As discussed in Section 8 of Dr. Makhijani's Declaration, the Yucca Mountain EIS deliberately understated the environmental impacts of the no-action alternative in order to avoid

casting it in too negative a light. Makhijani Declaration, ¶ 8.9 (citing Yucca Mountain EIS, Vol. I at 7-9 and 7-10). See also Yucca Mountain EIS, Vol. II at K-2. For the same purpose, the DOE completely avoided quantification or analysis of some impacts. For instance, the Yucca Mountain EIS fails to quantify some of the most important impacts of deterioration of casks after institutional control is lost, though it noted that major waterways and rivers that supply drinking water to tens of millions of people could become contaminated as a result of cask deterioration. Makhijani Declaration, ¶ 8.14 (citing Yucca Mountain EIS, Vol. II at K-29). And as DOE admits in the Yucca Mountain EIS, an uncertainty regarding long-term cladding degradation alone could increase radiation dose and cancer fatality estimates by several orders of magnitude. Id., ¶ 8.16 (citing Yucca Mountain EIS, Vol. II at K-38). (0322-2 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** The NEI's statement that the "no action alternative" in DOE's Yucca Mountain EIS "thoroughly bounded the environmental impacts of this extremely unlikely scenario," is factually and technically incorrect. NEI Comments at 7. The Yucca Mountain EIS no action alternative is purposely and admittedly not bounding; by DOE's own admission, several impacts are not calculated and variation of critical parameters, notably cladding degradation rates, increase cancer fatality estimates by "several orders of magnitude," i.e., a thousand times or even much more. Makhijani Declaration, ¶ 8.16. (The term "several" orders of magnitude is not defined but the term "several" can reasonably be taken to mean three or more orders of magnitude - that is, a factor of 1,000 or more). Therefore, contrary to the NEI's claim, the Yucca Mountain EIS's discussion of the no action alternative cannot serve as a bounding analysis for the scenario in which there is no repository. (0322-4 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** The draft EIS should identify, to the extent feasible, when subsequent NEPA review would be required for significant changes in circumstances or information (relevant to environmental concerns), when new and significant threats develop or when advances in technology warrant reconsideration of alternatives that could help avoid or minimize adverse impacts, enhance the quality of the human environment and further the purposes of NEPA. (0272-2 [Weisenmiller, Robert B.]

## 16. Comments Concerning Evaluation Scenarios

**Comment:** Finally, centralized spent fuel storage should be considered in the EIS. (0004-10-5 [Silverman, Don])

**Comment:** As an aside, the DPC believes that the removal of spent fuel and greater-than-Class-C to consolidated interim storage on a priority basis from our sites, is as likely and perhaps more likely than extended storage at these sites for 400 to 100 years. We base this on the support for consolidated interim storage that's emerged over the past decade from the Blue Ribbon Commission, from the legion of state, regional, local governmental entities, and the near universal support it enjoys from many non-governmental organizations. The establishment of CIS for spent fuel and GTCC from our facilities were provided demonstrative support for waste confidence decision by the Commission. (0004-9-5 [Callahan, Mike])

**Comment:** - Case study for consolidated storage facility - if BRC recommended consolidated storage facility is available, shouldn't NRC conduct the Environmental Impact study at Consolidated Storage Facility since this will create the need of transportation, repackaging, and other activities? (0096-2 [Wiley, JiYoung])

**Comment:** Third, the waste should be decentralized; that is, stored on the sites of nuclear plants, not at a centralized facility, and dispersed around each reactor site if possible. (0180-3 [Bahr, Richard])

**Comment:** Do you really have confidence there will be "central storage" ever and how safe will that be? If central storage is ever established you will just multiply the hazards by transporting highly radioactive spent fuel to it from all the different locations: train wrecks, weather, earthquakes, human error. (0204-2 [Groot, Henriette])

**Comment:** Consolidation of waste to interim off-site "central" storage facilities should be excluded. (0241-3 [Ower, Douglas])

**Comment:** The DPC believes that removal of spent fuel and GTCC to Consolidated Interim Storage (CIS) on a priority basis from permanently shutdown and otherwise decommissioned reactors is one such action that should be considered. We believe this scenario is at least as likely, and probably more likely, than extended storage at these sites for 40--100 more years. (0259-5 [Callahan, Mike])

**Comment:** One hypothetical alternative might be a centralized interim storage facility. However, such a facility is speculative at this point. And a full discussion of the environmental impacts of a centralized interim storage facility would be set forth in an environmental assessment or EIS supporting issuance of a license for such a facility. (0263-24 [Ginsberg, Ellen])

**Comment:** Relative to consolidated or centralized storage facilities, this methodology would totally negate the "consent-based" approach recommended in the Final Report of the Blue Ribbon Commission on America's Nuclear Future. As an alternative approach, this EIS should evaluate the basic attributes of a generic facility and identify favorable and unfavorable siting conditions for each type of facility on a generic basis. Any detailed evaluation of site-specific impacts should be left for the required site-specific NEPA documents at a future time. (0265-25 [Halstead, Robert])

**Comment:** But where would we site a Central Storage Facility or a second repository? The BRC has a suggestion: consent-based siting, with up-front incentives. I suggest that this EIS explore this subject in detail. In so doing, we need to achieve both state and local support and with a reasonable level of permanence. Otherwise the successors and assigns to The Four Horsemen may ride yet again. (0282-6 [Haughney, Charles])

**Comment:** It should exclude off-site interim consideration of waste storage because of unsolvable problems in transporting nuclear waste from one site to another. (0293-4 [Karpen, Leah])

**Comment:** We urge you to recognize and emphasize that one of the fundamental principles behind waste confidence and the nation's civilian spent fuel management efforts, is that the federal government, currently acting through the Department of Energy, is responsible for the development of all necessary infrastructure for long-term spent fuel and greater-than-Class-C management, not the individual NRC licensee/DOE contract holder. (0004-9-3 [Callahan, Mike])

**Comment:** It should be a bedrock principle that the federal government will act to fulfill its constitutional and statutory obligations to protect citizens from safety and security threats. Therefore, the environmental impacts of a postulated failure to establish a repository must be

measured against a surety and reality that the federal government will act in cases where spent fuel safety and security issues arise and are beyond the scope of NRC regulatory authority and licensing programs and responsibilities. (0004-9-4 [Callahan, Mike])

**Comment:** And you'd better set up protocols for the hundreds of aging reactors for what.. .the next 24,000 years? (0095-3 [Klein, Roberta])

**Comment:** Along those same lines of long-term scenarios, 50 to 100 years, if not beyond. And I think perhaps, under the no repository, that would be kind of encompassing, but you know, NRC itself has considered 200 to 300 years of on-site storage informal proceedings. So, perhaps, those scenarios should be spelled out explicitly as well as the no repository scenario. But the issue I'm getting at is the loss of institutional control. And usually that issue is reserved for very long time periods, the 10,000 year, 100,000 year, a million year into the future scenarios under repository considerations. But I think even 50, 100, 200, 300 year time periods, should look at loss of institutional control. (0118-17-7 [Kamps, Kevin])

**Comment:** Only after cessation? Temporary storage is also required during operation. After cessation who are the guardians? How many generations of guardians do you anticipate during the thousands of years of hazardous radioactivity? How many thousands of years do you think people will be able to read warning signs. (How long did it take us to decipher runes and hieroglyphs? Remember the desert Indians who found "pretty blue stones" and died of radiation?) (0204-1 [Groot, Henriette])

**Comment:** NARUC has some confusion over some NEPA basics that we had intended to raise during the scoping meeting but we were unable to attend. What is the purpose and need that the agency seeks to fulfill by various alternative courses of action? The Court ruled that the WCD is a major federal action requiring a Finding of No Significant Impact or an EIS. The NRC has been challenged before over its basis for confidence that there will be a safe, long-term solution to the isolation of commercial spent nuclear fuel and government owned high-level radioactive waste from the human environment. Yet, the responsibility for fulfilling that mandate is assigned to another federal agency, the Department of Energy (DOE,) and arguably DOE has been impeded to a certain extent by the actions and inactions of Congress. In short, the "decision maker(s)" is being asked to examine the environmental impacts of alternative courses of action and select a preferred course of action over which they have no direct responsibility, although the NEPA strategy for the development (and licensing) of a Yucca Mountain repository was for the NRC to adopt the Yucca Mountain EIS to the extent practical. (0233-4 [O'Connell, Brian])

**Comment:** However, it would be useful to compare storage scenarios that do not include institutional controls at existing used fuel locations versus centralized storage that is not adjacent to large water bodies such as oceans and our nation's rivers and lakes. Almost all of our nation's nuclear power reactors where used fuel is currently stored are in close proximity to primary sources of potable water. (0244-10 [Lacey, L. Darrell])

**Comment:** At a minimum this EIS should include analyses of the effects of loss of institutional controls and the adverse safety and environmental impacts that could occur if a repository is permanently unavailable. (0244-13 [Lacey, L. Darrell])

**Comment:** If NRC does not include scenarios with continued perpetual institutional controls as well as cessation of institutional controls at some discrete future time, criticism for not making reasonable and justifiable assumptions will be forthcoming. (0244-16 [Lacey, L. Darrell])

**Comment:** A complete articulation of the societal uncertainties of the allocations of future resources to dispose of previous generations' wastes must be included in the proposed EIS. It is neither ethically nor morally appropriate to assume that future generations will want to spend their resources to indefinitely maintain and protect nuclear wastes created to produce electricity to benefit the current generation. (0244-19 [Lacey, L. Darrell])

**Comment:** Scenarios including development of Yucca Mountain, development of a different (or additional) repository at least 50 years into the future, development of indefinite long-term centralized storage, and development of perpetual long-term storage locations should be included. For very long-term storage scenarios, it is unclear what "reasonable" assumptions can be made about ongoing societal institutional controls. Generally speaking, the assumption of such controls beyond 100 years has not typically been included in EIS analyses. (0244-8 [Lacey, L. Darrell])

**Comment:** NRC should utilize the Yucca Mountain FEIS no-action analysis to inform what may happen without centralized storage - both assuming institutional controls and assuming no institutional controls after 100 years. Additionally, scenarios with each institutional control assumption should be made for centralized storage and repository scenarios. Of course, we already know that institutional controls with a repository are not necessary to ensure safe and environmentally acceptable disposal based on Yucca Mountain analysis results. Safe and environmentally acceptable storage should also be possible with continued institutional controls that include adequate funding. Without ongoing institutional controls, very long-term storage is problematic. (0244-9 [Lacey, L. Darrell])

**Comment:** Finally, your effort should adequately recognize and emphasize a fundamental principle behind Waste Confidence and the nation's civilian spent fuel management effort: that the federal government, currently acting through DOE, is responsible for the development of all necessary infrastructure for long-term spent nuclear fuel (SNF) and Greater-Than-Class C (GTCC) waste management, not the individual NRC licensee/DOE contract holder. (0259-4 [Callahan, Mike])

**Comment:** Should the Commission evaluate the continued indefinite storage at permanently shut-down reactor sites, despite its tenet that it will not endorse such a program, the Commission must assume that the Department of Energy will address any infrastructure issues arising from such indefinite storage at permanently shut-down facilities such as developing, demonstrating, and maintaining the capability to remove and/or repackage any canisters or casks that may require such action. This includes developing, demonstrating, and maintaining the capability to modify sites to conform to new NRC or other federally mandated security requirements. In as much as the federal government is the party that has failed to discharge its responsibilities to remove the SNF/GTCC, and the Department of Energy is the contract holder to carry out these responsibilities, and since the Secretary has – according to that contract – the ability to remove this material from permanently shutdown reactors first, then additional environmental impacts caused by the continued on-site storage at these sites is solely due to the actions or inactions of the federal government, and the Commission must assume these costs will be borne by the government as the responsible party. (0259-6 [Callahan, Mike])

**Comment:** Further, NRC must assess and present the potential consequences should there be no option for geologic disposal. In this regard, the Waste Confidence EIS must fully assess and discuss the potential impacts of extended surface storage, both at existing individual sites, and at potential consolidated storage sites, and this discussion must include the possibility that there will be no geologic storage prior to the loss of institutional control over the storage sites (and indeed, NRC must examine the impacts and consequences of loss of institutional control at all storage sites of whatever configuration). (0271-11 [Fettus, Geoffrey])

**Comment:** What rationale is there that future generations will be better able (and willing) to deal with the technical, security, economic, and political aspects of the existing wastes than we are? As difficult as it may be, this task has to be addressed by the NRC staff in this EIS in a quantifiable manner. (0280-6 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Wear, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** The environmental impacts of the possible abandonment of engineered storage systems in the post 100 year period (2100 on) needs to be quantified and compared to a timely repository case as was done in the DOE Yucca Mountain FEIS and which was adopted by the NRC staff as a part of its review of the Yucca Mountain License Application. (0280-7 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Wear, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** Mitigation in the event of loss of institutional control. The NRC should explicitly consider storage design concept and measures that would mitigate the impact of leaks, fires, and malevolent acts in the event of a loss of institutional control. (0286-11 [Curran, Diane])

**Comment:** The EIS should analyze, in depth, the reliability of institutional controls, because there is extensive evidence that it is not prudent to rely on active institutional controls for more than 100 years after a facility ceases functioning for its principal purpose. (0286-27 [Curran, Diane])

**Comment:** The scenarios considered in the proposed EIS should cover future societies exhibiting a range of variation in prosperity, technological capability, and the quality of governance. (0286-29 [Curran, Diane])

**Comment:** At least one scenario (indefinitely long periods of storage in the event of a repository never becoming available) requires consideration of times longer than those for which institutional control can reasonably be assumed. Therefore it is essential that the EIS consider storage design alternatives that would mitigate the impacts in the event that institutional control is lost. Loss of such control would significantly increase the risks of risks of malevolent acts, dispersal of radioactivity, public radiation exposure due to inadvertent intrusion on to the site, theft of nuclear materials. (0286-73 [Curran, Diane])

**Comment:** Assuming institutional controls for 10,000 years - a period longer than recorded history and far longer than any human institution has existed - is without foundation in fact, experience, or common sense. (0286-80 [Curran, Diane])

**Comment:** ...institutional controls should not go beyond about the year 2250 in the case of storage; intruder barriers cannot be assumed to last for more than 500 years. For storage times beyond 100 years, it would be important to include an analysis of social upheavals or malevolent acts in the analysis. (0286-81 [Curran, Diane])

**Comment:** Accordingly, institutional controls must be part of the EIS in order to fully understand the impact or the time periods identified by the Commission. (0291-18 [Harlan, Thomas])

**Comment:** We also recommend that the scenario of storage of spent fuel if no repository is made available by the end of the century consider the impacts of indefinite duration of institutional control over spent nuclear fuel storage. Such impacts could reasonably include repair or replacement of infrastructure or containment (for example, one major repair during the first 100 years and replacement every 100 years thereafter), as well as the potential cessation of active management controls (for example, after 300 years of storage). (0325-2 [Bromm, Susan E.])

**Comment:** Another issue we're concerned about is the possible use of mixed oxide plutonium fuel in the United States. As you may be aware, the Tennessee Valley Authority is currently considering using MOX fuel. If that does become practice then we're going to have more fuel forms out there to deal with that require, you know, different cooling off periods, different space away from other fuel rods. And I would like to draw your attention to a quote from Daniel Stout with the Tennessee Valley Authority, which I am not going to quote directly because I'm reading off bullet points here. But he said that dry cask storage -- or I'm sorry, that MOX plutonium fuel will require an additional 56 years of dry cask storage before it's able to go into a repository that's been designed for uranium fuel. So as we think about how long we're going to need to be keeping, you know, fuel rods onsite or in dry casks there will be variations for different fuel forms, and we do urge you to take special consideration for MOX plutonium fuel. (0004-18-5 [Fuchs, Katherine])

**Comment:** I wish all of this could be addressed, and we're very much opposed to putting MOX fuel in Browns Ferry reactors also. These reactors have a very poor life history, with many events and many SCRAMs. (0004-26-4 [Horn, Stewart])

**Comment:** Another category would be MOX fuel and the heat levels of MOX fuel being higher than the heat load of more conventional uranium fuel. That means more volume in a repository would be needed because of the impact of the thermal pulse on the repository rock. (0118-17-12 [Kamps, Kevin])

**Comment:** The EIS should provide data for both moderate and high- burn-up fuel (greater than 50,000 MWDt/MTU for PWR and greater than 40,000 MWDt/MTU for BWR), showing thermal and radiological characteristics for representative assemblies after 50, 100, 200, and 300 years of storage. (0265-7 [Halstead, Robert])

**Comment:** For the purposes of this EIS, the NRC must assume that the National Nuclear Security Administration will succeed in persuading some utility to use Mixed Oxide Plutonium fuel (MOX). This EIS must therefore explore the special needs of spent MOX. The Nuclear Waste Technical Review Board has stated that [The] decay heat of a spent MOX fuel assembly would be between 1.3 and 1.7 times higher than that for an equivalent spent-uranium fuel assembly. Consequently, the used MOX would need to be kept in dry cask storage for an additional 56 years to have the same thermal impact on a repository at the time of emplacement. For certain repository designs, that difference could be consequential. The Nuclear Waste Technical Review Board's conclusion that spent MOX fuel stays hotter longer means that it will require longer than average cool-down periods in both pools and dry cask storage before it can be taken to an off-site repository. This EIS should explore appropriate

density and duration for storing spent MOX fuel on-site at nuclear power reactors. (0281-9 [Fuchs, Katherine])

**Comment:** The draft EIS must analyze the full range of spent nuclear fuel types from those already amassed at reactor sites to the high burn-up fuel more recently produced and the MOX spent fuel that may result from current proposals. (0288-5 [Brailsford, Beatrice])

**Comment:** In spite of political, technical and financial obstacles facing the DOE's MOX program, it is incumbent upon the NRC to consider the implications of spent weapons-grade MOX in its waste confidence analysis. (0301-1 [Clements, Tom])

**Comment:** EPA recommends that analyses consider the potential effects of higher fuel burn-up. Higher burn-up generally results in increased levels of oxidation and hydriding of the cladding; higher fuel rod internal pressures due to higher fission gas release from the fuel pellets; and, consequently, higher hoop stresses in the cladding. EPA recommends that these phenomena be evaluated for their effects on fuel integrity during storage as well as during subsequent management operations including transportation, retrieval and placement in a waste package, and, eventually, disposal. Mechanical properties of specific interest include creep, ductility under impact load conditions, and fracture toughness. These properties determine the ability of the cladding to maintain the fuel in the configuration that is, or will be, used for fuel storage licensing analyses, specifically in the criticality, shielding, and retrievability evaluations. High burn up may increase the risk of radioactive releases as the fuel cladding gets thinner. This increased risk persists throughout storage and disposal. High burn-up spent fuel will be hotter and more radioactive and therefore impose higher heat loads, require packaging with improved heat transfer capacity, and new materials that can withstand the effect of higher temperatures on components and materials. As discharge burn-up levels continue to increase, probabilistic risk assessments need to include these effects on the cladding mechanical properties important to transportation, handling, and disposal operations involved in closing the fuel cycle. (0325-5 [Bromm, Susan E.]

**Comment:** And I think along with that scope there, the question needs to be addressed, "How will that be done?" because at places like Big Rock Point in Michigan, other permanently shut down and even fully dismantled atomic reactors, there is no pool left now. All that's left is the dry casks. So where will that transfer take place from the failing dry casks into replacement dry casks? It, of course, has to be done with radiation shielding because the gamma doses coming off the internal canisters, the inner canisters, could deliver fatal doses to workers in as little as a few minutes' time. They are not radiation shielded. There will have to be either pools built, or else dry cells will have to be built at those facilities. (0005-5-8 [Kamps, Kevin])

**Comment:** Repackaging need of the spent nuclear fuel - SNFs stored for number of years either in dry or wet storage will be repackaged for transportation or disposal. (0096-5 [Wiley, JiYoung])

**Comment:** And on the environmental I mean the eventual degradation and failure of the metal and/or concrete structures of the casks and, again, I will submit for the record, a GAO study from 2009, which recognized that danger when it assumed the casks would have to be replaced once a generation. And a real disconnect is going on in the regulations right now. For example, at decommissioned nuclear power plant sites, like Big Rock Point, on the Lake Michigan shoreline, is that there is nowhere to do that repackaging of failed dry casks or even in an emergency to deal with a cask undergoing an emergency, because the pools have been dismantled. So the need to build new pools on these decommissioned reactor sites, or hot cells.



And the dollar figure for that, that GAO identified, was a major consideration going forward. (0118-2-10 [Kamps, Kevin])

**Comment:** The analysis should include repackaging requirements that will vary depending on repository and storage concepts. For instance, storage in transportation, aging, and disposal (TAD) containers as proposed for Yucca Mountain would have minimal impact and repackaging requirements before shipment. Other repository concepts will likely require smaller waste packages and therefore require extensive repackaging at current locations, central storage locations, and/or the repository sites. (0244-12 [Lacey, L. Darrell])

**Comment:** Repackaging involves: a) determination (based on monitoring data or professional judgment) that repackaging is required; b) removal of canisters from dry storage to an on-site operating SNF pool or to a hot cell of some type; c) opening the canister and removing the SNF assemblies; d) placing the SNF in a more confidence-inspiring storage-transport canister; and e) removing the repackaged SNF for continued on-site storage or transport. The DOE "System Architecture" study anticipates a significant potential need for repackaging in a reformulated waste management program. To what extent might repackaging become a factor in NRC's confidence in extended SNF storage and transport? Regarding SNF stored on-site in dual purpose canisters, is it safer to repackage now (assuming "hardened" canisters are available) rather than wait until later, when SNF and cladding degradation may be further advanced? (0270-5 [Niles, Ken])

**Comment:** For the repository pre-closure period, the EIS should evaluate the environmental impacts from the possible repackaging of spent fuel canisters that could now contain failed fuel. This unloading and repackaging at the repository surface facility can be done, but only with: 1) the design and construction of a substantial repackaging facility; 2) greater occupational exposure to the repository workforce; 3) management of additional solid, liquid, and gaseous waste streams associated with the spent fuel re-packaging facility; and, 4) substantial costs that would have been far less likely had the Yucca Mountain program been able to proceed. (0280-4 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Weart, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** The EIS should address how this transfer is to be undertaken under both normal or routine circumstances and in the event of an incident. (0291-11 [Harlan, Thomas])

**Comment:** And the final one I'll mention, in terms of competition for repository space, since there's so much talk of small module reactors at this point, one proposal for a small modular reactor in the tiny village of Galena, Alaska. Again, an indigenous village with environmental justice issues swirling around it, but Toshiba Corporation offered to provide the small, modular reactor over a decade ago, to this village. And, to then someday take away the sealed reactor, which is now a waste disposal container with the high level radioactive waste inside. Where would such small modular reactor wastes go? (0118-17-11 [Kamps, Kevin])

**Comment:** Scenarios in the proposed EIS should cover a range of outcomes in which the nuclear-power industry expands the scale of its operations and/or employs technology that is "new" by comparison with the prevailing technology now used in light-water reactors. Potential new technology could include, in addition to ceramic fuel cladding and current-technology reprocessing:

\* Mixed-oxide (MOX) fuel

\* Burning of light-water SNF in CANDU-type reactors (i.e., the DUPIC cycle)

- \* Reactors fueled by TRISO particles embedded in pebbles or prismatic blocks
- \* Sodium-cooled, fast-neutron breeder reactors
- \* Electrometallurgical pyroprocessing of SNF
- \* Accelerator-driven subcritical reactors
- \* Fusion reactors
- \* Fusion-fission hybrid reactors (0286-102 [Curran, Diane])

**Comment:** Timeframe of the proposed action: In previous NRC environmental impact statements or environmental assessments in support of licensing action, a timeframe is provided. For instance, the Prairie Island ISFSI is currently licensed for 20 years. In a 20-year period and an EA developed by the NRC in support of that decision evaluated environmental impacts over the 20-year period. It's not clear what timeframe the NRC intends to use for the waste confidence EIS. Unfortunately, time periods in the past, waste confidence decisions have been a moving target, first 30 years and then 60 years. We would like to see the scope include specific timeframe. It is our view that this moving target has allowed the federal government to abandon Yucca Mountain and start a process new -- anew. (0004-4-7 [Johnson, Ron])

**Comment:** I think you need to add a 200- to 300-year scenario to your list. (0004-6-5 [Makhijani, Arjun])

**Comment:** It's crucial that the environmental impacts of spent fuel after cessation of Reactor Operation (and actually before) be considered. (0023-1 [Fast, Wendy])

**Comment:** - Case study for 60 years beyond the licensed life for operation - SNFs stored in shut down or decommissioned reactor sites have been store a couple of decades now and possibly no geologic repository available then these SNFs are going to be stored way beyond 60 years on site. Can this be included in the Environmental Impact study? (0096-1 [Wiley, JiYoung])

**Comment:** The framework [of the EIS] itself neglects to consider the potential harmful effects over a sufficient period. Each scenario ends its inquiry at the end of the twenty-first century. Yet, it is well known that high-level wastes decay over a period of hundreds of thousands of years. Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy 27-28 (2012). (0107-2 [Fredrickson, Amy])

**Comment:** Considering power plants were not built with permanent storage in mind, the harmful effects of storing excessive amounts of waste without a permanent disposal site could extend well-beyond the end of the century. (0107-6 [Fredrickson, Amy])

**Comment:** My advice to the Commission at this point, is that for under, in the case of the repository being unavailable, which I think is a very likely scenario. In fact, it may be the most likely of all three that are outlined here, based on the last 25 years of experience. That in your slide which showed the yellow arrow, that that yellow arrow may, in fact, extend and should be evaluated to be 10,000 years long. And it may in fact split into 65 sites, because that's what essentially should be evaluated. That 65 sites would be those repositories for high level nuclear waste, that is irradiated nuclear fuel, for that duration of time. (0118-12-2 [Zeller, Lou])

**Comment:** The NEI comments make reference to the two no-action alternative scenarios already exhaustively evaluated in the Yucca Mountain EIS. We would posit that the most useful analysis to compare with a longer period of delay in developing a repository is scenario 1 in

which NRC regulatory enforcement throughout the duration of extended reactor-site storage. Scenario 2 has severe and unacceptable health consequences after a long (hundreds of years) time frame, well beyond any period of delay contemplated. (0233-2 [O'Connell, Brian])

**Comment:** Finding 4 regarding safe storage for at least 60 years after every reactor's operating life must be extended to much longer periods (perhaps forever) if no repository is assumed. In addition, the technical basis for the Commission's declaration of 60 years safe storage (or longer) should be incorporated in the proposed EIS. The current technical basis is lacking. (0244-5 [Lacey, L. Darrell])

**Comment:** A scenario including a repository available at the middle of this century is unrealistic unless that repository is developed at Yucca Mountain. It is incredulous that NRC is not planning on consideration of a Yucca Mountain repository even though Yucca Mountain remains the law of the land. (0244-7 [Lacey, L. Darrell])

**Comment:** Will a schedule for construction and commencement of operation be included in the EIS? This would determine the length of time spent nuclear fuel will be in temporary storage. The scope of the EIS should include a schedule for a long-term storage facility. (0246-12 [Kohler, Joseph])

**Comment:** Although these scenarios involve timeframes that are substantially similar to those proposed by the NRC staff, we believe that the scenarios will be more clearly understood if they are presented in terms that are consistent with the 2010 WCD and the DOE analysis and are more consistent with the Commission's direction to utilize the 2010 WCD and other existing assessments in the EIS. (0263-23 [Ginsberg, Ellen])

**Comment:** NEI suggests that the first two scenarios be presented using timeframes that are more consistent with the current WCD findings, the regulatory framework for spent fuel storage, and the work to date of the Department of Energy (DOE) in connection with the high-level waste repository proposed for the Yucca Mountain site. Instead of the "mid-century" and "end-of-century" repository scenarios, NEI suggests that the NRC assess the impacts of storage assuming the availability of a repository 60 years after the licensed life of a reactor (including the term of a renewed license), and 100 years after the licensed life of a reactor (including the term of a renewed license). The 60-year period is consistent with the 2010 WCD Finding 4, while the 100-year period is consistent with an assumption in the DOE Yucca Mountain EIS "no action alternative" that spent fuel would remain onsite in perpetuity, but under institutional controls for about 100 years. (0263-8 [Ginsberg, Ellen])

**Comment:** Third, the NRC indicated it is considering three potential scenarios for on-site storage of used nuclear fuel storage until a repository becomes available at the middle of the century, storage until a repository becomes available at the end of the century, and continued storage in the event a repository is not available. These scenarios appear to be suitably bounding; in fact, two scenarios - storage until the end of the century and continued storage - would probably be sufficient. Consistent with the Commission's direction to make maximum use of existing work, we reiterate NEI's comment that the scenario time frames should, to the extent practical, be aligned with existing assessments such as the 2010 WCD and the Department of Energy's EIS for Yucca Mountain. Moreover, in establishing EIS scenarios it would be inappropriate for the NRC to speculate inordinately about the future course of used fuel management in the United States. Such speculation is not needed in order to bound the environmental impacts of on-site storage. (0264-4 [Jamil, Dhiaa])

**Comment:** Nevada supported the NRC staff position in the previous draft report, and we continue to support the staff decision to adopt a 200-year span for the Waste Confidence EIS, and the use of a 300-year timeframe for analyses of spent fuel aging issues. The 200-year span for the Waste Confidence EIS is an appropriate bounding period, considering the current programmatic and policy situation. The 300-year period is an appropriate bounding timeframe for technical analyses of stored spent fuel aging issues.

However, we suggest that the Waste Confidence EIS also evaluate the radiological and thermal characteristics of spent fuel after 50 years and 100 years of storage. Due to decay of shorter-lived fission products, especially Cs-137 and Sr-90, the thermal output and surface dose rate of spent fuel declines significantly between 50 and 100 years of storage. These are particularly important characteristics of spent fuel for the planning and design of the storage and transportation system. (0265-6 [Halstead, Robert])

**Comment:** A definition for temporary storage is also essential. The definition should include the specific time period constituting temporary storage and make provision for monitoring, the continued integrity of storage containers and replacement as necessary based on expected life of materials under high levels of radiation. (0269-13 [Warren, Barbara])

**Comment:** At least one repository will be available within a certain period of time. The longer the period of time, the more SNF will have been discharged from reactors; the more SNF will have been moved from wet to dry storage; the more reactors will cease operations and shut-down; and the greater the need for confidence-inspiring on- and/or off-site storage. Since the temporary storage problem (site-by-site and overall) differs significantly under each time period assumption, it seems that, in order to make Waste Confidence decisions, the NRC must adopt one of the three time period assumptions above, and then be prepared to revise its Waste Confidence decisions when evidence suggests that another assumption is more appropriate. Further, it seems that the current most appropriate assumption regarding the availability of a repository is "not until the 22nd century". We assume that the EIS will consider each time period assumption, but adopt the single most appropriate assumption for waste confidence rulemaking. (0270-10 [Niles, Ken])

**Comment:** The EIS should consider evaluating the impacts of extended SNF storage and associated transportation for a reasonable analysis period (e.g., no more than one generation or 25 to 40 years). The emergence of new safety information, technological evolution and improved scientific analysis render longer time frame assumptions (e.g., 60, 100, 200 or 300-years) too speculative to be meaningful. (0272-13 [Weisenmiller, Robert B.]

**Comment:** The EIS should consider and analyze an alternative that recognizes much shorter durations for the post-license storage of spent nuclear fuel than are currently contemplated by the NRC, in light of how much our understanding of what constitutes safe storage can evolve over short lapses of time. (0272-14 [Weisenmiller, Robert B.]

**Comment:** The EIS should include a realistic timeline for waste storage including how much waste we have now, how much waste EACH plant will produce in its lifetime, how much waste is allowed at a federal repository, and strict guidelines and enforcement concerning the waste capacity at each nuclear plant. In other words when a nuclear plant is forced to over stock spent fuel, it needs to be shut down. This requires different limits at each reactor site. (0274-6 [Sorensen, Laura])

**Comment:** The NRC is proposing only to consider the impacts associated with failing to secure a repository by the end of this century, the NRC should consider the environmental impacts and impacts to Native American Communities of failing to establish a repository until 2250, requiring approximately 300 years of onsite storage. (0284-10 [Collins, Fred])

**Comment:** ...the EIS must make a reasoned and supported prediction of when (and if) a repository will be available. That prediction must be based, to a significant extent, on the feasibility of safe disposal in a range of geological media and the availability of suitable sites. (0286-12 [Curran, Diane])

**Comment:** Two of the three scenarios identified in the NRC scoping notice and during the public meeting (see paragraph 3.1 above) involve disposal of spent fuel in a deep geologic repository - i.e., disposal in the middle of this century or at the end of it. The additional scenario that should be added to the list discussed above also involves an assumption of disposal in a deep geologic repository after prolonged onsite storage up to about the year 2250. In order to fully evaluate each scenario, the EIS should include consideration of (a) the reasonableness of NRC's prediction that a repository will become available in any of those three time frames and (0286-121 [Curran, Diane])

**Comment:** While analysis of a range of scenarios may be a useful tool in preparing the EIS, the EIS should address the probability that these scenarios will occur, not merely assume their occurrence. In making that evaluation, the feasibility of spent fuel disposal is a relevant consideration. (0286-13 [Curran, Diane])

**Comment:** In view of the NRC's own preparations to analyze storage for up to 300 years in the Long-Term Waste Confidence Update, the scope of the Waste Confidence EIS should include a scenario of 300 years of onsite storage followed by repository disposal. This scenario should include at least one inter-cask transfer in this period, followed by transfer to a multipurpose or transportation cask at 300 years. Of course, transportation risks and repository site and disposal risks should be included in this scenario (as with every scenario that includes an assumption of deep geologic disposal and/or an assumption of transfer of spent fuel to an offsite storage location). (0286-16 [Curran, Diane])

**Comment:** In view of the NRC's own preparations to analyze storage for up to 300 years, the scope of the EIS should include a scenario of 300 years of onsite storage followed by transportation and repository disposal. This scenario should include at least one inter-cask transfer in this period, followed by transfer to a multipurpose or transportation cask at 300 years. Of course, transportation risks and repository site and disposal risks should be included in this scenario as also in every scenario that includes an assumption of deep geologic disposal and/or an assumption of transfer of spent fuel to an offsite storage location. (0286-61 [Curran, Diane])

**Comment:** The NRC should add a scenario in which spent fuel is stored on site for 300 years from the first such storage (that is storage until about the year 2250) before being transported to a repository. Transportation accidents involving degraded spent fuel should be evaluated. The impacts on transfer of degraded high burnup spent fuel at the repository site should also be evaluated. (0286-90 [Curran, Diane])

**Comment:** The appropriate timeframe, then, is not the cessation of activities at the nuclear power plant but rather is the time spent fuel actually sits in the casks or other storage containers that make up the ISFSI. (0291-3 [Harlan, Thomas])

**Comment:** It is the second possible scenario identified in the Federal Register notice that NSPM and the PIIC find objectionable and request that it not be used in the EIS analysis. A repository that is not available until the end of this century is a repository that takes the Federal Government more than 85 years to implement. If there is going to be a repository, there is no reason why it should take that long. Including such a scenario in the EIS may encourage the view that it is acceptable for the Federal Government to wait that long to put a repository in place. (0292-1 [Glass, Peter M.] [Mahowald, Philip])

**Comment:** The proposed 200 year analytical period seems excessive. However, it is understood the 200 year period (which begins mid-century) is for evaluation and analytical purposes only to assess the environmental impact of the long term storage of the waste. It is understood the 200 years is not a recommendation and is not a departure from the current licensing period for on-site dry cask use. It is further understood that any future licensed storage period must be established by the NRC rule-making process. (0294-2 [Bevill, Bernard])

**Comment:** We recommend that NRC specify the time periods considered for reliance on temporary spent fuel storage rather than assume the availability of a repository in the "middle of the century" or "end of the century." For example, we believe it is appropriate to evaluate a 60-year time period, post operation cessation, for storage, consistent with the most recent revision to the rule. (0325-1 [Bromm, Susan E.]

**Comment:** the Commission must continue to hold to its long-established tenant in waste confidence proceedings, that it does not endorse the indefinite on site storage of spent fuel and greater-than-Class-C. (0004-9-1 [Callahan, Mike])

**Comment:** If the timeframe is so limited and the EIS finds that the risk of harmful effects is low, it reduces the likelihood that any repository will in fact be built. Simply extending the time spent fuel is stored on-site makes no progress toward a permanent disposal solution. (0107-3 [Fredrickson, Amy])

**Comment:** If the materials are left somewhere, much closer to the surface and in a much more protected fashion, where they are retrievable and possibly moveable. (0118-16-2 [Safer, Don])

**Comment:** ...to enter into the discussion of the idea of, it's been posited by the nuclear guardianship societies and of just maintaining materials close to the surface or on the surface, in a very protected fashion, with instructions that are detailed for every generation that's going to have to deal with this burden that we are imposing upon generations forever, basically. (0118-16-3 [Safer, Don])

**Comment:** We believe that onsite storage is the best way to control spent wastes, fuel rods and other radioactive materials, when decommissioning a power plant. However, such storage should be made permanent. Solid concrete bunkers capable of containing the materials through their half lives and beyond would be most acceptable. (0251-1 [Hatley, Earl])

**Comment:** A better route to assure waste safety is to abandon repository ideas in place of strengthening waste management on the sites themselves. There is no need to have two places

with waste to manage. Leave it where it was created and work to strengthen storage and security protections at each site. That avoids transportation lessening impacts both to citizens and to the environment. (0256-1 [Kurtz, Sandra])

**Comment:** I firmly believe that the spent fuel of a nuclear power plant should remain, safely contained, in place. There is no safe place for nuclear waste, so less movement of it will mean less possible exposure to the population along or near the highways. (0258-1 [Homer, Deanna])

**Comment:** Our first comment is that the Commission must, as its first principle, continue to hold to its long-established tenet that it does not endorse the indefinite on-site storage of spent nuclear fuel (and Greater-Than-Class-C waste). The Commission has articulated this principle in its previous Waste Confidence findings and should continue to do so. (0259-1 [Callahan, Mike])

**Comment:** The EIS should make the point that any interim storage facility (whether centralized, regional, or at-reactor) will not likely become a de facto repository. (0265-23 [Halstead, Robert])

**Comment:** We support dry, safe storage at nuclear power plant sites. The industry made the waste and profited from it; they should manage it for as long as needs be. And storage on-site at nuclear power stations represents the least hazard to public health in the areas both near the reactors and along transport routes. (0273-6 [Zeller, Lou])

**Comment:** I believe the storage history of the irradiated fuel rods at the Callaway nuclear power plant, here in Missouri, may be representative of the types of interim storage problems faced at other nuclear power plants. Because of the lack of a permanent U.S. disposal site and, fortunately, no commercial fuel reprocessing, the Callaway fuel rods continue to await shipment someday, somewhere for permanent disposal. That day may never come. In the meantime, they remain dangerously packed into crowded, inadequately cooled spaces --- including, I assume, in the Cask Loading Pit. (0300-3 [Drey, Kay])

**Comment:** Perhaps a reasonable way to deal with the possibility of perpetual storage would be to require revisiting waste confidence every decade or so. In that manner, findings 100 years into the future could be reasonably made. If at any point waste confidence regarding safe and environmentally acceptable disposal and/or storage could not be reasonably projected for 100 years (or some other discrete time period), our nation would have 90 years left from the previous waste confidence decision to deal with the problem. (0244-15 [Lacey, L. Darrell])

**Comment:** And, again, I really, really, really ask you to consider that a no-repository scenario is the same as we don't have a solution for this material. And the first rule of getting out of a hole is to stop digging. (0004-16-2 [Olson, Mary])

**Comment:** The remand is to look at, number one, the prospect and the consequences of no repository being available, and I think the Commission has thrown out the idea that this is an issue that has been looked at at length by the Department of Energy as a no-action alternative with respect to Yucca Mountain, and I think that's certainly a very, very valid place to start in the analysis. So, again, it's not that the Commission is ignoring the issue of no repository, and it's not that you have nothing to build upon, I think, in fact, you do have a substantial record to build upon. (0004-20-4 [Repka, David])

**Comment:** We have lost confidence in the waste confidence decision. The U.S. Court of Appeals for the District of Columbia -- excuse me -- struck down the waste confidence decision

finding too that reasonable assurance exists that sufficient geologic repository -- excuse me -- capacity will be available for disposal of high-level waste and spent nuclear fuel when necessary finding for. That reasonable assurance exists that spent fuel can be safely stored at plants for at least 60 years beyond a licensed life of the plant without significant environmental impacts in a combination of spent fuel pool storage and either onsite or offsite dry cask storage systems. With respect to finding two, in the absence of a repository or even proposed site identified, now 30 years after the Nuclear Waste Policy Act was enacted, we don't believe there can be reasonable assurance that sufficient geologic repository -- sorry, struggling on the word -- capacity will ever be available. (0004-4-1 [Johnson, Ron])

**Comment:** Our preference would to be have the EIS bounded by the mid-century time period; having said that, however, we believe that the D.C. Circuit decision mandates that the alternative analysis must include a robust analysis of the environmental impacts if no spent fuel repository is ever available. (0004-4-8 [Johnson, Ron])

**Comment:** I am commenting to voice my complete agreement with the DC Circuit Court, and encourage your agency to exhaustively evaluate the environmental effects of not securing a permanent disposal option for nuclear waste. (0037-1 [Fleetham, Chelsea])

**Comment:** It is only reasonable for any complete Environmental Assessment of nuclear storage to contain a thorough investigation of any and all environmental impacts resulting from the failure to secure a method of permanent disposal. (0037-3 [Fleetham, Chelsea])

**Comment:** The effect of continual use and possible expansion of nuclear power without a repository is significant. "Under a no-growth scenario," projected spent fuel inventory is expected to be less than 150,000 metric tons by 2050. (0107-4 [Fredrickson, Amy])

**Comment:** The third one, of course, is the repository being unavailable. And I hate to think about it, but I've been following this issue for over 25 years, that I've worked for Blue Ridge. And, of course, it was in the Nuclear Regs Policy Act, which set the repository, the search for a repository in motion in 1982, and then that was amended in 1987. During those years a site just 20 miles from my home was one of the 12 preliminary sites selected in the process that the Department of Energy, at that time had underway, in the Office of Civilian Radioactive Waste Management. The Department of Energy, I believe is a leaky vessel for much hope in terms of evaluating a site for an ultimate nuclear waste repository. We found numerous flaws in the Agency's methodology as well as their conclusions, which were never finalized, of course, because Congress intervened and pulled the plug on the project and changed things. Because partly the failures of the Agencies and experts to grapple with some of the fundamental problems of storing waste which is dangerous for tens of thousands of years. Now, of course, here we are in the 21st century, the Blue Ribbon Commission set up by the President has been established. And I hate to say it, but I think that what I have observed with the Blue Ribbon Commission's deliberations, kind of is warmed over from the latter decades of the 20th century. 0118-12-1 [Zeller, Lou])

**Comment:** About the scenarios, it seems to me that the most likely of those scenarios to actually occur is the third one where no repository is found that's been, there's no, after all, no repository operating anywhere in the world right now. And I know there are some that are under construction but not for near the volume that the United States as managed to manufacture of this material. And I'd kind of like to throw, sort of a different wrinkle at the Directorate and the Commission, in terms of this issue of, if we abandon the concept of a long-term repository



underground that, because it's basically a fiction, and we just get real about the fact that it, and maybe recognize that perhaps it's not the best solution anyway. (0118-16-1 [Safer, Don])

**Comment:** 2010 Waste Confidence Decision, Finding 2: The 2010 vacated Waste Confidence Decision incorrectly found reasonable assurance that sufficient mined geologic repository capacity can reasonably be expected to be available within 50-60 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of any reactor to dispose of the commercial high-level radioactive waste and spent fuel originating in such reactor and generated up to that time. Again, we have no confidence that this is so; and neither NRC nor BRC have provided a "clear preponderance" of the evidence, or any evidence for that matter, to justify a finding of reasonable assurance. (0148-32 [Lampert, Mary])

**Comment:** In fact, compared with the original Waste Confidence Decision nearly 3 decades ago, the Commission has much more justification to have confidence that a repository will be established. An EPA standard for a non-Yucca Mountain repository, 40 CFR 190, is already in place and has been successfully implemented once to certify the WIPP facility. There is broad international consensus that deep geologic disposal, using a combination of engineered and natural barriers, is the appropriate technology for safe disposal of spent nuclear fuel or high level waste (HLW) from reprocessing. Similar to the Blue Ribbon Commission in the US, major reassessments of disposal programs have been conducted in the last several years in Canada, France and the UK. All reached the conclusion that deep geologic disposal is eventually necessary for disposal of spent nuclear fuel and HLW. You might say they concluded that failure to secure geologic disposal is not an option. (0226-3 [Bell, Michael])

**Comment:** The Court faulted the NRC in its analysis for failure to assess the environmental impacts of failure to ever develop a repository. It seems to us that is an infeasible alternative. If the purpose and need is to isolate the waste for a far longer period (initially it was to have been 10,000 years and later revised to one million years-essentially forever.) The law (NWSA) says that the federal government will dispose of these types of nuclear waste and there are contractual commitments that have been made based on that mandate. Unless the law is changed, failure to ever develop a repository is not a feasible alternative. Except that the Court requires an environmental assessment. (0233-1 [O'Connell, Brian])

**Comment:** It is recommended that this EIS process address the significant technical and institutional uncertainties and consequences if this nation continues to defer indefinitely developing a functional disposal capacity for high-level radioactive. (0244-17 [Lacey, L. Darrell])

**Comment:** Although this Administration does not wish to pursue the Yucca Mountain repository, this posture toward inaction does not relieve the NRC from evaluating the consequences of inaction and articulating the national need for action. This EIS must address the substantial and real consequences of political inaction. (0244-18 [Lacey, L. Darrell])

**Comment:** The inclusion of a scenario regarding long-term (perhaps perpetual) continued storage in the event a repository is not available may be adequate to address this problem. However, it will require a fundamental change in the basis for the Commission's confidence. The confidence that used fuel can be safely stored until a repository is open must now address safe storage in perpetuity. (0244-3 [Lacey, L. Darrell])

**Comment:** Include in the generic environment impact statement an explicit evaluation of the effects of a repository not being available. (0260-2 [Lochbaum, David])

**Comment:** Include a formal evaluation of spent fuel storage if a repository is not available at the end of the evaluation time frame. The NRC must not defer that formal evaluation to the middle of the century. (0260-4 [Lochbaum, David])

**Comment:** Another alternative, that would mitigate any adverse environmental effects associated with onsite storage of spent fuel beyond a reactor's licensed life, would be a waste repository. But the timing of that alternative is presently uncertain given government inaction. And, a repository would only reduce the time period for onsite storage, rather than eliminate the need for temporary storage. In any event, under NEPA, the NRC need not be in a position to compel specific mitigation actions, outcomes, or alternatives. NEPA only requires that the NRC identify environmental consequences and mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated." Therefore, the EIS need only describe the availability of a permanent repository as a potential mitigating measure. (0263-11 [Ginsberg, Ellen])

**Comment:** In the EIS and rulemaking the NRC can build a substantial record on which to conclude that a "no repository" scenario is indeed remote and speculative. The scenario is contrary to existing federal law and assumes a complete government failure to fulfill the clear need and obligation to develop a repository. Moreover, in the prior WCD record, the NRC reached sound conclusions with respect to the technical feasibility of a repository, the progress of other nations to site and develop disposal facilities, and the government's ability to overcome societal barriers to a repository. This record could be enhanced by including in the EIS now being developed the most recent technical studies and international developments. A sound basis exists to find that the "no repository" scenario is highly unlikely and speculative. Nonetheless, to fully and conservatively address the remand, NEI also supports the Commission's direction to include this scenario in the EIS (0263-12 [Ginsberg, Ellen])

**Comment:** We understand that NRC will examine the impacts of three potential scenarios, including continued storage in the event a repository does not become available. Although we do not disagree with the use of the scenarios, we stress that we cannot accept that a repository will never be made available. However, we believe that the NRC's analysis will highlight the disruptive impacts of this unlikely "no repository" scenario and demonstrate the need for prompt action. (0268-3 [Wright, David A.]

**Comment:** A mined geologic repository is technically feasible. We assume that the EIS will not suggest changes in this finding. (0270-9 [Niles, Ken])

**Comment:** Then the agency must turn to an analysis of the possible and environmentally sustainable configurations for the long term in the event a disposal solution is never identified. (0271-10 [Fettus, Geoffrey])

**Comment:** The States request that NRC take a fresh look at the elementary question: "What should be the scope of the environmental impact statement and the associated rulemaking?" The States submit that the answer to that question should include the following considerations. First, the EIS should provide a comprehensive and thorough exploration of all the environmental issues associated with continuing to generate nuclear wastes when the Commission is unable to determine that there is a date by which a permanent, safe, and secure repository will exist for disposing of nuclear wastes. NEPA requires nothing less than a comprehensive look at all the potential environmental impacts of the proposed action, all the alternatives to the proposed

action that would eliminate or mitigate those adverse impacts and a quantitative comparison of the proposed action and alternatives to it to assure that the best course of action is identified. 42 U.S.C. § 4332 et. seq.; Calvert Cliffs, 449 F.2d at 1114 ("all of these [NEPA] Section 102 duties are qualified by the phrase 'to the fullest extent possible.' We must stress as forcefully as possible that this language does not provide an escape hatch for footdragging agencies; it does not make NEPA's procedural requirements somehow 'discretionary.' Congress did not intend the Act to be such a paper tiger. Indeed, the requirement of environmental consideration 'to the fullest extent possible' sets a high standard for the agencies, a standard which must be rigorously enforced by the reviewing courts.") (0275-23 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The NRC may be able to make a technical determination about the feasibility of a permanent spent nuclear fuel repository; however the politics of siting such a repository cannot be so clearly determined. Because of the uncertainties inherent in our political system, it is unsound to assume that a permanent repository will be available in the foreseeable future and this EIS must include analysis of storing spent nuclear fuel on-site indefinitely. (0281-13 [Fuchs, Katherine])

**Comment:** NRC must evaluate the practical reality that there is no final disposition for existing commercial reprocessing waste (technically commercial waste mixed with Atomic Energy Commission and Department of Energy weapons reactor waste) and provide all technical support for any decision of confidence that that waste will have a final disposition in an NRC licensed repository. The WCD must address whether individual sites can store high level radioactive waste and "spent"/irradiated nuclear fuel for long periods of time, until a final repository is available. (0285-18 [D'Arrigo, Diane])

**Comment:** And with respect to filing four remain highly skeptical that the reasonable assurances can exist for a safe, onsite storage for multiple decades, longer than originally intended, particularly based on a generic non-site-specific analysis. (0004-4-2 [Johnson, Ron])

**Comment:** Nuclear Waste is not going away, and the so-called temporary storage sites at nuclear power plants need to be studied for their environmental impacts. Indefinite storage of these wastes hasn't been 100% successful. Public safety and the well-being of future generations requires closing nuclear power plants unless radioactive wastes can be rendered safe or successfully contained 100% of the time. (0033-1 [Farrington, Susan])

**Comment:** In my opinion, any rule which permits the storage of high level nuclear waste at, or nearby, or adjacent to two existing nuclear power plants, and/or at plants currently in the midst of the decommissioning process overlooks the undeniable fact that there is currently no facility on Earth (nor any plans to construct any in North America) currently in operation that is designed for the long term storage of high level nuclear waste. (0048-3 [Forlie, Kai Mikkel])

**Comment:** We have no way to safely handle these wastes for a few years much less decades and centuries. (0069-3 [MacWaters, Chris])

**Comment:** Nuclear energy production exceeds our ability to cope with it. So, good answers are going to be hard to come by. The least that thoughtful people can do is to make sure that everything that can be done is being done to contain nuclear waste. (0073-1 [Neland, Vicki])

**Comment:** I think it bears repeating that these materials we're talking about are some of the most toxic, poisonous substances that mankind has ever had the misfortune of creating. And that they have to be sequestered from our environment for hundreds of thousands of years. And so the importance of this work that you're doing at the Waste Confidence Directorate is, I just want to underline that. And implore the Directorate to really take into consideration these materials and not just have another day at the office and dismiss the concerns that so many citizens have about these materials. So I want to echo Kevin's comments 100 percent. (0118-3-1 [Safer, Don])

**Comment:** The topic being rad waste. That means that we're considering a hazard that will last for many thousands of years. I think given that, the term waste confidence is an oxymoron. If there were confidence, we wouldn't be putting fresh, high-level waste into temporary pools. We're seven decades into too cheap to meter, and nobody knows what to do with this toxic waste that we're generating daily at 65 site and more around the nation. I live near a Mark I reactor that's on the flight path for a major airport. There's no airspace restrictions. The only thing between a 747 and a spent fuel pool is a tin roof. I have no confidence that it's safe. (0119-6-3 [Agnew, David])

**Comment:** These things never seem to be well thought out even after we have learned or suppose to have learned from prior mistakes. It is high time this and other waste disposal is taken seriously. (0151-1 [Pruitt, Steve and Alicia])

**Comment:** We must have safe and effective storage of nuclear waste. This is becoming a huge problem. We were told fifty years ago that a solution would be found soon. No one has ever found a solution. If there is no solution, then nuclear power plants must be shut down. (0154-1 [Calendine, Georgeann])

**Comment:** We need to study the issue and consider the environmental impacts of temporary storage of spent fuel. This stuff must be regulated, tracked and contained with great oversight. The NRC must take the lead and come up with some rational options to deal with the problem. Let's start with a study. (0160-1 [Taylor, Wendi])

**Comment:** Environmental impact statements are the bare minimum protection of our health and environment. (0162-1 [Saftler, Michael])

**Comment:** Unfortunately there is no safe use or storage of nuclear spent fuel. (0183-1 [Brooks, Michele] [Wilvert, Cal])

**Comment:** Nuclear waste cannot be safely stored or decontaminated and is a hazard for every lifeform on Earth. (0195-2 [Sanders, Marshall])

**Comment:** Nuclear waste has no business in the urban or suburban landscapes. You created it, you dispose of it safely and properly. Don't put American citizens at risk. (0208-1 [Maness, Mitchell])

**Comment:** The Fact that there countues to be nuclear accedents every year tells me that the science is simpley not ready to do this. Or supposing that the science is there Then Greed Keeps it from working. (0218-1 [Holmes, Andre])

**Comment:** The subject of nuclear power and nuclear waste is of such importance that the NRC's primary task, now, should be education, and the assembly of an accepted set of facts. (0219-1 [Gugino, Martin])

**Comment:** Part of this analysis should include consideration of the synergistic impacts created by the storage of nuclear wastes at each reactor site when the site decommissioning is substantially delayed under the so-called SAFESTOR option, as opposed to prompt decommissioning of closed reactors. (0275-13 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** We [members of the Women's International League for Peace and Freedom] welcome this opportunity to submit comments to you, hoping your dialogue with scientists and other members of the public will lead to a breakthrough technical resolution. In fact, we propose that the NRC embark on a Second Manhattan Project, inviting the world's finest scientific minds to collaborate on seeking solutions to the essential need to find technologies and locations that can confidently isolate our nation's accumulated radioactive wastes. Until then, if ever, the United States should stop making more. (0277-2 [Roskos, Laura])

**Comment:** How will the generic EIS evaluate radiological releases stemming from accidents? What if fuel has to be transferred to a second cask? What if there is no pool in which to transfer fuel to a different cask? Will a generic cask, with high or low burnup fuel, be assumed to be in use? What about the number of casks? What about the health risks to people living nearby? In the case of the Prairie Island ISFSI, our people are 600 yards from the ISFSI. We have no assurance that there will be any type of pool once the plant is decommissioned. There are stand alone spent fuel storage facilities in the county that have no pools. How will these factors be included in the generic EIS? (0321-6 [Mahowald, Philip R.]

**Comment:** When I posed the question of how nuclear waste could be managed on-site for the duration of the radioactivity of the materials, there was no one who had an adequate answer. (0336-2 [Warshauer, Meira])

**Comment:** I'm going to mention that the BRC, the Blue Ribbon Commission estimated that even just with the existing reactors, that's before NRC approved some of the new reactors that are being built, that the waste from the existing reactors would fill two Yucca-type repositories by 2050. So, you know, we're talking about an enormous amount of waste and I think one of the EIS topics should be sustainability. (0118-13-2 [Warren, Barbara])

**Comment:** Another area that Pixie Lampert's comments prompted me to address is that question of volume in repositories, the availability of space in a repository? So yes, indeed, the Atoms for Peace, return to sender problem, where 41 countries have highly enriched uranium, which is now irradiated. A very small fraction of that has come back at this point. So it's not one repository, but at least two repositories that we'll need. If not, over 50 to 100 years, I hadn't heard that figure before it was mentioned today by an NRC staffer of 170,000 metric tons of commercial irradiated nuclear fuel in the United States. Based on the administrative limit or the legal limit at Yucca Mountain, for example, for a first repository, that is approaching three repositories right there of just U.S. commercial radiated fuel. (0118-17-9 [Kamps, Kevin])

**Comment:** It had just occurred to me that based on the waste projections of 150,000 metric tons by 2050, 275,000 by the end of the century that we are many times over exceeding the original cap for Yucca. And I think that was at 70,000 metric tons. So that if we are going to put together scenarios for storing waste long term, we have to assume not one, not two, but three

different approvals for three different long-term sites assuming that's part of -- honestly, not politically or fiscally reasonable at this point. I mean, I can't imagine us getting three. But really your scenarios, if you're going to include the idea of a long-term centralized repository has to include three of them. (0119-10-2 [Levine, Gregg])

**Comment:** Given the current pending licenses for new power plants in Georgia and elsewhere, a "no growth scenario" is unrealistic. A more careful analysis would therefore view future nuclear power needs under a "high-growth scenario." (0107-5 [Fredrickson, Amy])

**Comment:** The scenarios considered in the proposed EIS should cover a range of potential outcomes regarding the role of nuclear power, including: (i) shrinkage in the number of operating reactors, with potential shutdown of all reactors by the middle of the 21st century; (ii) expansion in the number of operating reactors; and (iii) introduction of new technology. (0286-28 [Curran, Diane])

**Comment:** The proposed EIS should take a dynamic view of the potential inventories and modes of storage of spent nuclear fuel and high level radioactive waste, by considering a range of storage scenarios. (0286-31 [Curran, Diane])

**Comment:** The proposed EIS should use a range of storage scenarios as vehicles to help assess the comparative radiological risk posed by alternative options for storing spent nuclear fuel or high level radioactive waste. (0286-32 [Curran, Diane])

**Comment:** The spent nuclear fuel storage scenarios to be considered in the proposed EIS should include: (i) an Extended Status Quo scenario; (ii) a Nuclear Power Rundown with Spent Nuclear Fuel Risk Minimization scenario; and (iii) a range of other scenarios. (0286-35 [Curran, Diane])

**Comment:** What are the advantages and disadvantages of extended storage of varying kinds (from 50 years to 300 years) on repository design? Would this affect site selection? What are the advantages and disadvantages of extended storage on repository design with respect to waste packaging? (0271-12 [Fettus, Geoffrey])

**Comment:** And I'll close my comments addressing today the merits of a single area and that is security issues having to do with onsite storage. Thank goodness on September 11th, 2001, the attackers who attacked the World Trade Center did not attack the Indian Point nuclear power plant with its pools that are not inside primary radiological containment structures. I would point out that dry cask storage itself is not designed to withstand terrorist attack as shown by a 1998 U.S. Army Aberdeen proving ground experiment. What I have here ...is principles for safeguarding nuclear waste at reactors, also known as hardened onsite storage that a coalition of 200 environmental groups has been calling for for a decade. This is to empty the pools. This is to institute dry cask storage that is designed well, built well, fortified against attacks, safeguarded against accidents, and built to last not for decades, but for centuries into the future. (0004-11-2 [Kamps, Kevin])

**Comment:** We support dry, safe storage at nuclear power plant sites. Industry made the waste and profited from it, they should manage it for as long as need be. (0004-14-5 [Zeller, Lou])

**Comment:** Also, establish hardened onsite storage, a storage system unattractive as a terrorist target and retrievable. Protecting fuel pools to withstand an attack by air, land, or water from a

force at least equal in size and coordination to the 9/11 attacks. Require periodic review of hardened on-site facilities and fuel pools with meaningful participation from public stakeholders. (0004-14-8 [Zeller, Lou])

**Comment:** We do support the concept of hardened onsite storage. We're one of the organizations that signed on to the principles that Kevin put in for the record earlier. I brought my own copy, but I won't leave any more. So we would urge you to look at the hardened onsite storage. We feel that this is the appropriate time and process for analyzing hardened onsite storage, for defining what qualified as hardened onsite storage, and for implementing a national system of hardened onsite storage to deal with some of that spent fuel pool overcrowding issue. (0004-18-3 [Fuchs, Katherine])

**Comment:** HOSS, hardened on-site storage, as an alternative must be looked at. (0004-25-12 [Shapiro, Susan])

**Comment:** And I'll conclude for now with something I mentioned earlier today as well, which is hardened onsite storage. It's something that 200 environmental groups have been calling for for a decade at this point. We have repeatedly, in various hearings, meetings, town hall meetings with the NRC, called for this, and not just at NRC but other decision making bodies. What hardened onsite storage calls for is for the pools to be emptied into dry cask storage onsite that is designed well and built well, and that is not happening in this country. (0005-5-12 [Kamps, Kevin])

**Comment:** In addition, dry casks are safer and easier to operate than storage pools. The Commission should develop a mechanism to move spent fuels from storage pools to dry casks as soon as they are cool enough to be stored in dry casks. (0038-9 [Goze, Yunjoo])

**Comment:** The solution that I urge the NRC to implement: Hardened On-Site Storage (HOSS). HOSS is a sensible, scientifically validated interim alternative to high-risk transport of radioactive waste, and HOSS is also a much safer and more sensible alternative to pool and dry cask storage. HOSS has been thoroughly researched and is endorsed by a wide range of subject matter experts on radioactive waste storage. Please heed their message and mandate HOSS for all radioactive waste. (0043-4 [Bosold, Patrick])

**Comment:** Please begin to make long term plans for Hardened on Site Storage on Site at each NPP. (0058-4 [Dubois, Gwen L])

**Comment:** In the long run, Hardened on Site Storage, with casks separated and further entombed in the way to go if we want to make the kind of radioactive spent pool fuel fires feared at Fukushima, truly unlikely in our future. (0058-7 [Dubois, Gwen L])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0062-4 [Jessler, Darynne])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0063-3 [Matsuda, Thomas])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0064-4 [Clark, Kenneth])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0065-1 [Collecchia, Geri])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0066-1 [Swyers, Matthew])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0067-1 [Kammerer, Greg])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0068-4 [Sheridan, Paul])

**Comment:** All existing irradiated nuclear fuel must be promptly transferred to Hardened On Site Storage. (0069-4 [MacWaters, Chris])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0071-4 [Bartholomew, Alice])

**Comment:** For irradiated nuclear fuel stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0072-5 [Shuput, Steve])

**Comment:** Please require that the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors be put into Hardened On-Site Storage (HOSS) asap. (0076-3 [Sorgen, Phoebe])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0077-4 [Bosold, Patrick])

**Comment:** Moreover, the NRC should require Hardened On-Site Storage (HOSS) for the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, should be required. (0080-2 [Cochran, Moncrieff] [Maurer, William])

**Comment:** Hardened On-Site Storage (HOSS) is the very least that should be required at this point. (0092-3 [Kukovich, Kenneth M.])

**Comment:** Moreover, the NRC should require Hardened On-Site Storage (HOSS) for the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, should be required. (0093-2 [Nichols, John])

**Comment:** Require HOSS, hardened on-site storage. (0095-2 [Klein, Roberta])



**Comment:** Hardened On-Site Storage (HOSS) is a smart, interim alternative to risky radioactive waste transport, as well as risky pool and dry cask storage. Nearly 200 environmental groups have endorsed HOSS for over a decade. (0105-2 [Hoodwin, Marcia])

**Comment:** Of course, we would put forward a preferred alternative of hardened on-site storage which, again, we will submit for the record, as we already did, actually, on November 14 at Rockville. The principles for safeguarding nuclear waste at reactors, which calls for emptying the pools and fortifying the dry-casks against terrorist attacks. (0118-8-6 [Kamps, Kevin])

**Comment:** Spent nuclear fuel must be buried in a hardened cask on the site where it is produced! This is proven the safest way. Transporting nuclear waste is extremely dangerous to all populations and the same problem exists at the other end. (0134-1 [Warren, Barbara])

**Comment:** Hard casks are preferable over spent fuel pools which, as the horrific lessons of Fukushima instruct us, are vulnerable to earthquakes and flooding not to speak of terrorism and accident. (0141-2 [Mainland, Edward])

**Comment:** Better researchers than I have recommended how to deal with this: HOSS. Hardened on site storage. Dry casks withstood the test at Fukushima. Had most of the irradiated fuel there been in dry casks, we would not be facing the largest contamination event of the Pacific Ocean in history. Hardened dry casks placed within a berm would be better protected from malicious assault... (0147-1 [Shaw, Sally])

**Comment:** Dry Casks: The National Academy stated that dry casks were less vulnerable to attack because casks are passive; casks are located at or below ground level making attack more difficult; the fuel is more spread out. However, the Academy cautioned that casks are still vulnerable to attack and suggested, simple steps that could be taken to reduce the likelihood of releases of radioactive material from dry casks in the event of a terrorist attack - such as spreading the casks further apart, constructing mounds around the casks. (0148-24 [Lampert, Mary])

**Comment:** Hardened, Dispersed, Dry Cask Storage. Dry casks present less of a hazard than spent fuel pools; however, because the dry casks will be stored out in the open, they are vulnerable to attack by terrorists. NRC must show research supporting its decision regarding the vulnerability of each type of cask licensed by the NRC today- manufacturer and design. PW advocates the storage design recommended by the Massachusetts Attorney General's expert on spent fuel vulnerability, Dr. Gordon Thompson. It calls for dry casks to be surrounded by earth berms and dispersed over the site. Scoping is required comparing the vulnerability/consequences of the hardened dispersed arrangement versus placing all casks on a pad. (0148-27 [Lampert, Mary])

**Comment:** New waste dumps should not be considered. Radioactive waste should be stored on site in hardened casks. (0152-4 [March, Leslie])

**Comment:** Placing these very large (heavy) concrete casks in a poke-a-dot pattern will allow for at least 50 to 100 years of storage, safe from everything except a War, (in which case every reactor is just as vulnerable) and then revisit the storage problem then; at which time, probably a future solution will allow for an even better lower cost "final solution". (0163-2 [Leichtling, Don])

**Comment:** In another 50 to 100 years, storage technology will be such that, yet another lower cost solution for all this waste will be found, and then it can be considered verses continuing to using the above storage plan. (0163-5 [Leichtling, Don])

**Comment:** Second, the facility where the waste is stored should be hardened to resist an attack by anti-tank missiles and crashed commercial jets. At ground level, this would mean layers of concrete, steel, gravel and other substances around and above the spent fuel. (0180-2 [Bahr, Richard])

**Comment:** Require Hardened On-Site Storage for HLNW. (0187-2 [C, John])

**Comment:** For wastes that already exist, I urge to require Hardened On-Site Storage. (0189-2 [Valtri Burgess, Vivian])

**Comment:** For wastes that already exist, I urge the NRC to require Hardened On-Site Storage. (0194-1 [Selquist, Donna])

**Comment:** The only answer is to close all nuclear power plants and develop hard storage for waste with monitoring the length of half life. (0195-1 [Sanders, Marshall])

**Comment:** For the nearly 70,000 metric tons of irradiated nuclear fuel currently stored at U.S. atomic reactors, Hardened On-Site Storage (HOSS) should be required. (0198-2 [Brown, Deb])

**Comment:** Lack of quality assurance on design and fabrication of dry casks, as revealed by industry and even NRC whistleblowers, calls into question the structural integrity of dry casks currently used for on-site storage. Current dry casks, almost all stored outdoors in plain site, have not been designed to withstand terrorism, such as an attack by TOW anti-tank missiles. (0207-3 [Harris, Deborah W.]

**Comment:** For wastes that already exist, I urge the NRC to include Hardened On-Site Storage (HOSS) as the preferred alternative. (0215-2 [Savett, Adam])

**Comment:** HOSS would be a stop-gap method, while emptying the pools and replacing with on-site dry casks might be an improvement. (0227-3 [Murtha, William])

**Comment:** A primary responsibility is to stop creating more of it. As a stopgap technique, hardened onsite storage is the best current option for that which currently exists. (0238-2 [Patrie, Lewis])

**Comment:** NRC needs to require the transfer of radioactive waste out of pools into hardened onsite storage (HOSS). Onsite dry cask needs to be able to withstand terrorist attacks and be designed to stay onsite for decades and possibly centuries. (0241-2 [Ower, Douglas])

**Comment:** Hardened On Site Storage, with earthen berms to isolate casks, should be required. (0242-9 [Agnew, David])

**Comment:** Redesign spent fuel pools for permanent rather than temporary storage, harden all on-site storage (HOSS), and assure constant monitoring with timely information available to citizens. (0256-2 [Kurtz, Sandra])

**Comment:** Include hardened on site storage (HOSS) as an alternative to the unwise use of increasing packing density of fuel assemblies, or additionally constructed storage in cooled water storage pools. However, HOSS should never be considered the permanent storage solution, nor should any on-site disposal of spent fuel be considered permanent. All dry cask HOSS systems should be designed for ease in ultimate relocation to a permanent geologic repository. All HOSS casks should be separated by distance and shielding sufficient to minimize potential for successful terror or sabotage attacks that could damage more than one cask unit. (0262-7 [Andrews, Richard])

**Comment:** The commercialization of dry storage technology is barely 30 years old. The EIS should make the point that, even though the time frame for this EIS is 200 years, there are strong reasons to believe that new management solutions will evolve before then. (0265-22 [Halstead, Robert])

**Comment:** NRC must compare and contrast the worst-case-scenarios for radioactive releases and health consequences from a disruption of current dry storage, fuel pools and "hardened" dry storage. Based upon this, NRC must examine alternative changes in its regulatory requirements for waste storage onsite since it is easy to forecast, based on existing data, that hardened storage provides a greater margin of health and safety to the public compared to over-filled pools. (0266-2 [Anonymous] [Fisher, Allison] [Gale, Maradel] [Lish, Christopher] [Mariotte, Michael] [Sheridan, Paul])

**Comment:** The NRC must consider Hardened On-Site Storage (HOSS) as a possible required standard, as has been requested by nearly 200 environmental organizations and nuclear experts in the US. The spent fuel pools currently employed for a large portion of nuclear waste storage at US reactors pose a major risk to the public because they are vulnerable to drain-downs or boil-downs. Nuclear fuel in these pools must be removed as soon as possible and transferred to a modified, robust form of on-site dry storage, commonly referred to as HOSS. Dry storage must be subject to strict standards for protection from accidents, purposeful attack, and corrosion. (0269-22 [Warren, Barbara])

**Comment:** "Hardened" canisters for extended storage and transport. Our understanding is that "hardened" canisters could enable decisions regarding extended storage and transport to be confidently made without monitoring data regarding the degradation of SNF and cladding contents of the canister. What is the current status of this technology? Is it available or in prospect? Is it dramatically more expensive or does it dramatically reduce canister capacity? Could NRC have "confidence" in extended storage and transportation of SNF in hardened canisters that it could not have in current canisters? Over what period of time might this confidence extend? (0270-2 [Niles, Ken])

**Comment:** Finally, NRC must examine alternative changes in its regulatory requirements for waste storage on-site in light of the above information. Such an analysis will not just analyze storage configurations, but waste forms, locations, shielding, institutional controls, and even transportation matters. (0271-24 [Fettus, Geoffrey])

**Comment:** Establish hardened on-site storage (HOSS): Irradiated fuel must be stored as safely as possible as close to the site of generation as possible. Waste moved from fuel pools must be safeguarded in hardened, on-site storage (HOSS) facilities. Transporting waste to interim away-from-reactor storage should not be done unless the reactor site is unsuitable for a HOSS facility and the move increases the safety and security of the waste. HOSS facilities must not be

regarded as a permanent waste solution, and thus should not be constructed deep underground. The waste must be retrievable, and real-time radiation and heat monitoring at the HOSS facility must be implemented for early detection of radiation releases and overheating. The overall objective of HOSS should be that the amount of releases projected in even severe attacks should be low enough that the storage system would be unattractive as a terrorist target. Design criteria that would correspond to the overall objective must include:

- a) Resistance to severe attacks, such as a direct hit by high-explosive or deeply penetrating weapons and munitions or a direct hit by a large aircraft loaded with fuel or a small aircraft loaded with fuel and/or explosives, without major releases.
- b) Placement of individual canisters that makes detection difficult from outside the site boundary. (0273-10 [Zeller, Lou])

**Comment:** Require periodic review of HOSS facilities and fuel pools: An annual report consisting of the review of each HOSS facility and fuel pool should be prepared with meaningful participation from public stakeholders, regulators, and utility managers at each site. The report must be made publicly available and may include recommendations for actions to be taken. (0273-12 [Zeller, Lou])

**Comment:** Hardened On-Site Storage is the only realistic short and intermediate solution to the problem of spent nuclear fuel. This EIS is the perfect opportunity for the NRC to assess standards for passively cooled dry onsite storage. (0281-8 [Fuchs, Katherine])

**Comment:** In assessing the overall impacts of storing spent nuclear fuel or high level radioactive waste, the proposed EIS should consider the implications of alternative storage options for a national strategy of protective deterrence. (0286-42 [Curran, Diane])

**Comment:** In assessing the comparative radiological risk posed by alternative options for storing SNF or HLW, the proposed EIS should regard retrievable emplacement in a repository as a mode of storage. (0286-104 [Curran, Diane])

**Comment:** In assessing the comparative radiological risk posed by alternative options for storing spent nuclear fuel or high level radioactive waste, the proposed EIS should regard retrievable emplacement in a repository as a mode of storage. (0286-33 [Curran, Diane])

**Comment:** The draft EIS must include a full evaluation of hardened on-site storage (HOSS). (0288-3 [Brailsford, Beatrice])

**Comment:** For all the metric tons of irradiated nuclear fuel already stored at US reactors, HOSS needs to be required to offset any potential pool leaks, sudden drains from catastrophic events, or slow motion boil downs. Transferring them to on-site concrete casks designed to last for centuries (fortified and camouflaged against potential terrorists) will protect the surrounding environment from fatal radioactive damage and negative health impacts in the surrounding area, preventing leaks into the ground and subsequently, into the groundwater. (0289-1 [Lambert, Gwen])

**Comment:** It should compare and contrast possible scenarios from disruption of current dry storage, fuel pools and "hardened" dry storage. (0293-3 [Karpen, Leah])

**Comment:** Unhardened dry cask storage vs Hardened On-Site Storage (HOSS) must be fully considered. Related issues to be included in the EIS. (0296-34 [Shapiro, Susan])

**Comment:** Design requirement standards to safe guard against accidents, and terrorist attacks to prevent radioactive leakage into the environment for decades or centuries including adequate spacing between casks, composition of casks, camouflage, fortifications, and standards for securing casks in place by bolts or bermed construction. (0296-37 [Shapiro, Susan])

**Comment:** I have read about Hardened On-Site Storage and believe this affords a needed measure of protection in conjunction with protected low-density open-frame fuel pools. (0314-1 [Riley, Christine L])

**Comment:** Fourth, the current HOSS system is adequate as an interim alternative to transporting nuclear waste without a long-term storage facility online. (0315-3 [Pirch, Charlotte])

**Comment:** We strongly advocate that the NRC require fortified, hardened on-site cask storage for all irradiated fuel assemblies that have been stored in the reactor's spent fuel pool for five years or more. That is for the greatest safety at all reactor sites, the irradiated fuel should be transferred into reinforced dry cask storage units as soon as possible. The dry casks should be designed and built to last for centuries, with materials that are resistant to corrosion and leaks, and are fortified to withstand possible terrorist attacks and hurricane, tornado, and earthquake damage. The casks should be camouflaged, dispersed at reactor sites, and buried underground or protected as much as possible with thick bunkers and berms. (0323-11 [Birnie, Patricia T.])

**Comment:** For wastes that already exist, NRC should require Hardened On-Site Storage (HOSS, a phrase coined by Dr. Arjun Makhijani of IEER in 2002; Dr. Makhijani serves as an expert witness for the environmental coalition, represented by attorneys Diane Curran and Mindy Goldstein, in this NRC proceeding) as the preferred alternative...But on-site dry cask storage must be significantly upgraded. Dry casks must be designed and fabricated well, with full quality assurance. They must be designed to withstand terrorist attack (as by camouflage, fortifications, and adequate spacing in between casks), to safeguard against accidents, and to prevent radioactivity leakage into the environment for the decades or centuries the wastes will be stuck at the reactor sites (0326-8 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** This comment is to complement/supplement previous ones I have made in this proceeding. I wish to clarify that Hardened On-Site Storage is not the same thing as current, status quo dry cask storage. For example, current dry cask storage is not even designed to withstand terrorist attacks. Hardened On-Site Storage, or HOSS for short (a phrase coined by Dr. Arjun Makhijani of IEER in 2002), sometimes referred to as Robust Storage, would require that dry cask storage be designed, fabricated, and operationally deployed to not only withstand terrorist attacks, but even to deter them in the first place. Casks could and should be separated by distance, so that multiple casks could not easily be hit by a single terrorist attack. Casks should also be camouflaged in some way, to make them difficult to spot, another deterrent to terrorist attack. And finally, casks should be fortified with thick concrete, steel, and or earth/gravel, yet another deterrent against terrorist attack. (0327-1 [Kamps, Kevin])

**Comment:** However, of the dispositions available, Hardened On-site Storage (HOSS) should be given serious consideration over the risks of transporting the waste or storing in pools or in dry casks. (0336-4 [Warshauer, Meira])

**Comment:** I understand that a spent nuclear fuel rod needs to spend at least six months in a cooling pool in order to cool off enough to be safely transferred to a dry cask. I also understand just holding spent nuclear fuel rods in dry casks for sixty years at the site of the nuclear power plant in which they were used. Since you still have not found a site for long term storage of spent nuclear fuel rods, it sort of makes sense to hold them in dry casks on the campus of the nuclear power plant in which they were used until either you find a site for long term storage of spent fuel rods or the nuclear power plant is decommissioned. (0003-1 [Adams, Grace])

**Comment:** Please regulate the expeditious movement of fuel out of spent fuel pools and into dry casks as soon as sufficient cooling has occurred. (0058-3 [Dubois, Gwen L])

**Comment:** The solution is a campaign to move all of the fuel that has cooled already for 5 years into dry casks as expeditiously as possible in the short run. (0058-6 [Dubois, Gwen L])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0062-6 [Jessler, Darynne])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0064-6 [Clark, Kenneth])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0065-3 [Collecchia, Geri])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0066-3 [Swyers, Matthew])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0067-3 [Kammerer, Greg])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0068-6 [Sheridan, Paul])

**Comment:** No storage should be allowed in pools. (0069-5 [MacWaters, Chris])

**Comment:** Pools, at risk of leaks, should be transferred into on-site dry casks which are: designed and built to last for centuries, withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment. (0072-6 [Shuput, Steve])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: 1. designed & built to last for centuries 2. camouflaged to deter, & fortified to withstand, terrorist attack 3. safeguarded against accidents; & 4. prevented from corroding & leaking high-level radioactive waste into the environment, such as by replacement once per generation requiring either a pool or a hot cell for transfers. (0076-5 [Sorgen, Phoebe])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks: designed and built to last for centuries; camouflaged and fortified to deter and withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0080-4 [Cochran, Moncrieff] [Maurer, William])

**Comment:** I strongly urge the NRC to mandate that all spent nuclear fuel rods be transferred to hardened dry casks immediately and ensure that those casks are designed and fabricated to meet the required standards for safe storage, transference, transport at a designated site meant to protect all the citizens from the destructive forces of this form of "alternative energy". (0089-1 [Azarovitz, Janet])

**Comment:** Not much is said in the press about the dangers of on-site in water storage of waste. These pools should be emptied and replaced with on-site dry casks, and well fortified ones at that. (0092-4 [Kukovich, Kenneth M.]

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks: designed and built to last for centuries; camouflaged and fortified to deter and withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operations. (0093-4 [Nichols, John])

**Comment:** Environmental impacts should be required and plans should be submitted for an accelerated program to move waste from pools to dry cask storage. (0139-1 [Headrick, Gary])

**Comment:** ASAP get waste out of pools and into dry cask storage. (0158-3 [Hartman, Randall])

**Comment:** Pools, at risk of leaks, as well as catastrophic radioactivity leaks due to sudden drain downs or slower motion boil downs, should be emptied. (0198-3 [Brown, Deb])

**Comment:** The irradiated nuclear fuel should be transferred into on-site dry casks which are: designed and built to last for centuries; camouflaged to deter, and fortified to withstand, terrorist attacks; safeguarded against accidents; and prevented from corroding and leaking high-level radioactive waste into the environment, as by replacement once per generation, requiring either a pool or a hot cell in which to carry out such transfer operation. (0198-4 [Brown, Deb])

**Comment:** High-level radioactive waste must be transferred out of water pools, at risk of catastrophic radioactivity releases in the event of a loss of cooling and consequent radioactive waste inferno. (0215-3 [Savett, Adam])

**Comment:** The NRC should require that irradiated fuel assemblies that have cooled in spent fuel pools for five years or longer be transferred into dry-cask storage units as soon as possible. The casks must be installed on site in fortified areas that are dispersed and camouflaged in order, hopefully, to deter a terrorist attack by land, water or air, and by persons employed within the facility or by outsiders who gain access. (0277-7 [Roskos, Laura])

**Comment:** NRC should include sufficient analysis in this EIS to form the basis for new regulations requiring dry storage of excess fuel ("excess" to be defined as any fuel remaining in the cooling pool longer than the time of cooling in liquid required before transfer to dry storage). If NRC does not itself initiate promulgation of such a regulation, it may receive this as an early notice of intent to petition for rulemaking. (0285-10 [D'Arrigo, Diane])

**Comment:** 2nd, put as much of the used fuel that has cooled long enough, into high-quality dry cask storage on-site. (This should be continued until the reactors and used fuel pools are empty). (0295-2 [Larson, Dennis])

**Comment:** The environmental impacts and increased risk associated with transferring high-level radioactive waste from pools to dry casks. (0296-35 [Shapiro, Susan])

**Comment:** A case in point is that the NRC has allowed the decommissioned irradiated fuel pool at Millstone Unit One in Connecticut to maintain a full load of irradiated fuel assemblies even though that reactor closed in 1995. The utility should have been required to transfer all the irradiated fuel assemblies into dry cask storage units, since all the fuel had cooled for at least five years by the year 2000. We urge the NRC to require Dominion Nuclear Connecticut to make that transfer now. (0323-9 [Birnie, Patricia T.])

**Comment:** Therefore, when there are so many unknown unknowns, it is impossible to use PRA to make an analysis. Therefore, there has to be a heavy reliance by the staff looking into this, on defense and depth. That is the only reasonable approach when you're dealing in the future without any specific information to rely upon. Therefore, this adds substance to request for low density, open-frame pools and getting the rest into secured, hardened dry-cask, in my estimation. (0118-11-4 [Lampert, Mary])

**Comment:** The next issue would be with the spent fuel that's in the fuel pools, these are packed over capacity. There needs to be a very strict, clear in the EIS how many are you allowed to have in there. And it needs to be strict and you can't go over it. That's it. And there needs to be in the EIS a list of scheduled inspections on those pools -- the dates for each sight of when they're going to be inspected with a timeline that's very reasonable for safety. (0119-7-2 [Sorensen, Laura])

**Comment:** Include as an alternative for spent fuel cooling pools the absolute and immediate requirement that all such pools be enclosed in fully hardened structures. Disallow dangerous high packing densities in cooling pools that are more vulnerable to loss of cooling water. (0262-8 [Andrews, Richard])



## 17. Comments Concerning NEPA Process

**Comment:** The NRC should not be rushing the preparation of an EIS. A legitimate EIS requires thorough examination and mitigation of issues such as those identified through the scoping process. (0001-2 [Anonymous] [Butler, Edward] [Evans, Michael W.] [Flowers, Bobbie] [Gilbert, Valerie] [Levey, Laura] [Malina, Matt] [Neiman, Laura] [Puca, Rob] [Richkus, John] [Tignanelli, Doreen] [Valentine, Jennifer] [Varekamp, Patrick])

**Comment:** We want to underscore the need for an efficient and timely NEPA process in order to meet the Commission's direction to issue a final EIS by September 2014. This is critical to the timely and efficient completion of multiple licensing actions. (0004-10-1 [Silverman, Don])

**Comment:** The commenting period itself is too short, especially since as many people pointed out, it includes two major holiday seasons. It should be extended by at least 60 days. (0004-12-10 [Barczak, Sara])

**Comment:** The two-year time frame to complete this process is clearly not adequate to meaningfully evaluate possible long-term environmental impact of storing high radioactive waste onsite for 200 to 300 years. The NRC staff themselves previously alerted the commissioners of this, stating that five years was the most quickly the process could be conducted, ideally needing seven years. (0004-12-6 [Barczak, Sara])

**Comment:** We oppose NRC's two-year deadline to complete the waste confidence rule. Agencies rushing the process and the public will suffer if the NRC persists in pleasing the industry at the expense of public safety. (0004-14-2 [Zeller, Lou])

**Comment:** The NRC is rushing the process. The NRC must resolve many technical issues, including long term waste integrity, vulnerability, deterioration, and accidents. Also, nuclear waste stored at Fukushima is still being evaluated. According to an NRC staff the long-term waste confidence update was expected to take eight years. If the NRC has set a deadline of September 2014, agency's two-year deadline is rushing the process and the public will suffer if the NRC persists (0004-14-6 [Zeller, Lou])

**Comment:** It's been heartening to see the Commission taking this issue seriously, both with -- first of all with the creation of the directorate and staffing it so, you know, so well and forcefully. That makes it obvious that the Commission is taking it seriously. Also with the 24-month schedule that they've set forth is perhaps ambitious but it reflects the importance of the issue and the licensing impact that's involved (0004-19-1 [Hamrick, Steve])

**Comment:** That certainly the timing of this initiative is of the utmost importance. It's something the Commission has recognized that licensing decisions are being held in abeyance pending the outcome here. So keeping the schedule is certainly a very important objective and goal for this effort. (0004-20-1 [Repka, David])

**Comment:** I just want to say a very few things that back up a lot of what has already been said. The U.S. has a mountain of waste that's 70 years high, and the idea that NRC can effectively write a rule and prepare an EIS in two years to update a waste confidence finding shows a

complete lack of understanding of what the public really expects. The NRC must focus on a rule that will provide public safety and take the time necessary without any imposed deadlines. The public's been asked to provide scoping comments without any real proposed actions. You just have timeframes, which is essentially asking us to just take shots in the dark. It also sounds to me like you don't have a clear picture of what this EIS would analyze also. (0004-22-1 [Treichel, Judy])

**Comment:** Writing an EIS requires the input and expertise from many sources and must be -- not be driven by a deadline. Thank you very much. (0004-22-3 [Treichel, Judy])

**Comment:** Second, if it is not withdrawn, there should be an extension for public comment to at least January 30th, 2012, as requested by the other public-interest groups. (0004-23-2 [Sheehan, Margaret])

**Comment:** Use your skills wisely, and I think, clearly, a two-year process ought to be enough to come up with a very supportable and credible EIS. (0004-27-6 [Silberg, Jay])

**Comment:** I would note that we're sympathetic to the compressed time frame but we believe that the Commission has spoken with respect to the urgency of this matter and my point would be in large part to encourage the agency to adhere to the schedule and make every effort to properly balance the need for expedition but also the need for a hard look as is required under NEPA. (0004-7-1 [Ginsberg, Ellen])

**Comment:** The 24-month period the NRC has allotted to prepare an environment impact statement and promulgated a new rule is appropriate. (0004-8-1 [Burton, Bruce])

**Comment:** I think that the rushed nature of this process flies in the face of any notion of consent-based interactions with the public, 20 days notice on the meetings today, just 70 days for the public to comment before the January 2nd deadline. I think that deadline on January 2 needs to be significantly extended into the future. Really what we're seeing is NRC going from one extreme to the other, the first extreme being decades of not addressing this issue in an environmental impact statement of any description and now the other extreme being this process just being absurdly rushed. (0005-7-5 [Kamps, Kevin])

**Comment:** And it was mentioned by Lou Zeller earlier today and others at the previous session that in 2011 the NRC said that a revision to the nuclear waste confidence decision and rule would take a full eight years to implement. And all of a sudden, after the court ruling in this matter, NRC is now saying that it will take only two years. And I did hear NRC say earlier today that it's because so many personnel, so many staff are being assigned to this subject. But it's a rush job, and to carry out hearings across the country, to educate the public in the first place so that the public can make intelligent comments on the subject matter would be time consuming. (0005-9-2 [Kamps, Kevin])

**Comment:** These wastes are very deadly. Their risks need to be considered fully, and that would take time to do. NRC acknowledged just last year that it would take eight years for it to fully comprehensively consider its revision to the nuclear waste confidence decision and rule, and so that's what we call for. (0005-9-3 [Kamps, Kevin])

**Comment:** I also request that the comment period be extended as new information erupts continuously. (0009-8 [Lewis, Marvin])

**Comment:** Please extend the environmental scoping period and hold additional in-person hearings in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0010-1 [Collecchia, Geri])

**Comment:** I am requesting that the environmental scoping period be extended and that additional in-person hearings be held in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0011-1 [Richards, Jay])

**Comment:** Current deadline for public comments on its environmental scoping is January 2nd, 2013, a remarkably short time period (just over two months long, including the upcoming elections, as well as the holidays). Obviously, NRC is trying to rush the process and keep public involvement to a bare minimum. (0011-2 [Richards, Jay])

**Comment:** It's obvious that the NRC is trying to rush the environmental assessment of nuclear waste in this country. (0012-1 [Pelizzari, Roger])

**Comment:** Please for the health of our people, extend environmental scoping period and hold additional live hearings in communities near high-level radioactive Waste storage pools and dry casks. (0012-2 [Pelizzari, Roger])

**Comment:** NRC's current deadline for public comments on its environmental scoping is January 2nd, 2013, a remarkably short time period (just over two months long, including the upcoming elections, as well as the holidays). Obviously, NRC is trying to rush the process, and keep public involvement to a bare-minimum. (0013-1 [Poulson, Judi])

**Comment:** Please contact NRC Chairwoman Allison Macfarlane (photo, left) and request that the environmental scoping period be extended. Also request that additional in-person hearings be held in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0013-2 [Poulson, Judi])

**Comment:** Extend the comment deadline. (0014-1 [Andreas, Sonja])

**Comment:** A two month period that includes both national election and major holidays is completely inadequate in light of the possible effects on human health and the environment in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0015-1 [Roane, Christine])

**Comment:** As a concerned citizen, I believe your duty is not to proceed with this rush process, but to allow for full public disclosure over as many hearings as these communities demand in order to document fairly and completely the public response to a potentially deadly hazard. (0015-2 [Roane, Christine])

**Comment:** Thank you for this opportunity to express first my request that the scoping period be extended. (0016-1 [Jeffrey, Monroe Edwin])

**Comment:** NRC's current deadline for public comments on its environmental scoping is January 2nd, 2013, a remarkably short time period (just over two months long, including the upcoming elections, as well as the holidays.). It appears that the NRC is trying to rush the process, and keep public involvement to a bare minimum. (0017-1 [Sheridan, Paul])

**Comment:** I am writing to request that the environmental scoping period be extended. I further request that additional in-person hearings be held in communities living in the shadows of high-level radioactive waste storage pools and dry casks, such-as-Wiscasset, Maine with the wastes from the Maine Yankee plant. (0017-2 [Sheridan, Paul])

**Comment:** Please extend the environmental scoping period, and add in-person hearings in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0018-1 [Smith, Mike])

**Comment:** I am glad that you have announced a first scoping hearing that will be available online, as well as 2 web seminars. This is a good first step in hearing from the public and making your information available to residents. However, to have a comment deadline of Jan. 2, 2013, less than 30 days after those 2 seminars, seems inappropriate haste to me. (0019-1 [Gellert, Sally Jane])

**Comment:** Please extend the comment period and schedule hearings across the country so that the local voice may all be heard as I understand to have been the intention of the ruling in response to which the NRC has scheduled the 3 events... (0019-3 [Gellert, Sally Jane])

**Comment:** Please extend the public comment period on nuclear waste disposal. (0020-1 [Grenard, Mike Hayduke])

**Comment:** Urge you to extend the comment date and schedule more geographically diverse hearings. This is an important issue, and the public deserves a chance to be fully heard. (0028-1 [Horowitz, Shel])

**Comment:** It seems that with the current schedule for the scoping hearing and public comments, this process will be rushed. (0029-2 [Anderson, Johanna])

**Comment:** First, please extend the environmental scoping period so that a truly thorough assessment can be made. January 2nd is too soon for a deadline for public comments. (0029-3 [Anderson, Johanna])

**Comment:** Drawing up new regulations should not be rushed in order to issue licences quickly to old and new nuclear plants. (0035-3 [Bradbeer, Wilma])

**Comment:** Finally, the Commission should not rush to any premature conclusion. The Commission is planning to issue EIS and a new Waste Confidence Rule by September 2014. There may not be enough time for comprehensive evaluation of all environmental impacts by the set deadline. I know that the Commission decided to stop all licensing activities after the D.C. Circuit's decision. However, industry pressure should not push the Commission to issue a hasty rule. The Commission should take sufficient time to fully analyze all environmental impacts. (0038-10 [Goze, Yunjoo])

**Comment:** I am writing to state that the comment period for this Consideration of Rules be extended to hear more comments and to allow full investigation by the public into the ramifications of this rule. (0041-1 [Kersting, John])

**Comment:** Extend and listen carefully to the Public comments in an extended timeline. (0041-4 [Kersting, John])

**Comment:** The NRC should grant an extension of time for the environmental scoping hearings, and grant an extension of time for the entire environmental scoping process. (0043-1 [Bosold, Patrick])

**Comment:** It is my understanding that twenty-five organizations are asking the agency to resubmit its notice for comment in compliance with NEPA, and extend the commenting period by sixty (60) days. I support this request. (0045-2 [Lane, Gary])

**Comment:** The Notice...sets an impossibly short comment period, especially given the coming holidays. I urge the NRC to withdraw its Notice, fix it along the lines mentioned above, and resubmit it with a comment period of at least sixty days. (0050-2 [Biddle, Lynn])

**Comment:** You should have encouraged comments by e-mail. Please extend the 1 2 13 comment deadline. I have plenty of time; but, many folks get busy during the holiday season. This form does not have enough characters for some folks' comments. (0053-1 [Unger, Art])

**Comment:** Don't rush. Producing a legitimate Waste Confidence Environmental Impact Statement (EIS) should take some time and cannot be done by 2013. (0055-6 [Enebo, Karin])

**Comment:** We are also pleased that the concerns of the public are being sought. But we are dismayed that public opportunities to comment are far too limited. With the public comment period ending on January 2, 2013 we fear that interested public may not even know about the opportunity to comment in time to respond. The election is monopolizing public attention until November 6, and maybe even well beyond that. The Thanksgiving and following holiday preoccupations will cut into the public attention span. Therefore we urge the NRC to extend the public comment period ninety days. This would still give the NRC more than a year to assess the public comments. (0059-2 [Birmie, Pat])

**Comment:** While we recognize the need for this EA to be completed as soon as possible, we strongly believe it is even more important to make it a thorough evaluation. Rushing the public input segment of this process (as now proposed) could compromise the effectiveness of the study and report. (0059-4 [Birmie, Pat])

**Comment:** I request an extension of time for the hearings, as well as an extension of time for the entire environmental scoping process, as the NRC has not provided the public with enough time to study the issues and prepare either written or oral comments. (0060-1 [Winholtz, Betty])

**Comment:** This complex review, so critical to the safety and survival of local populations around nuclear plants, deserves sufficient time to explore the issues. I understand that seven years would allow for this review to take place adequately. A rushed review of a few months will

clearly be inadequate and unacceptable and not in the best interests of our citizens. (0061-1 [Eilenberg, Alisa])

**Comment:** The public needs to know the shortcomings of the licensee process before the license is granted, not after the license is granted with situations like Fukushima, Ginna, TMI#2, etc. Timely and quick public access to public comments should alleviate this delay. This delay is aggravated with unseemly short comment periods. Waste confidence has turned into a multifaceted dragon. I suggest and petition that the comment period for this instant waste confidence rulemaking be extended. (0075-1 [Lewis, Marvin])

**Comment:** The 1st consideration that we request is a reasonable timeframe for public comment. Please extend the Jan 2 deadline, hugely inadequate for an issue of such importance to the safety of our nation & of humanity for generations to come. (0076-1 [Sorgen, Phoebe])

**Comment:** Please extend your comment period to 1/31/2013 to go a sufficient time beyond the holiday season. (0078-1 [Haasch, Jane E])

**Comment:** Given the complexity and importance of the issues involved, the NRC has failed to give the public enough time to prepare meaningful oral or written comments relating to the appropriate scope of the the environmental review. (0086-1 [Brancato, Deborah])

**Comment:** Riverkeeper supports at least a 30-day extension in which to file written comments, beyond the current January 2, 2013 comment deadline. The comment period is absurdly short in light of the complicated issues involved. The current deadline is particularly inappropriate and inadequate in light of the intervening holidays, during which commenters and experts will be unavailable. (0086-2 [Brancato, Deborah])

**Comment:** Additional time to determine the appropriate scope of the environmental review process for NRC's waste confidence EIS is necessary. (0086-5 [Brancato, Deborah])

**Comment:** I point out that this is a timely and serious issue that deserves and merits a longer comment period than one that ends the day after a National Holiday. (0091-5 [Lewis, Marvin])

**Comment:** Please extend the environmental scoping period. (0098-1 [Bosold, Patrick])

**Comment:** I am writing to request that the environmental scoping period be extended. Also request that additional in-person hearings be held in communities living in the shadows of highlevel radioactive waste storage pools and dry casks. (0099-1 [Bartholomew, Alice])

**Comment:** The NRC's current deadline for public comments on its environmental scoping is January 2nd, 2013, a remarkably short time period (just over two months long, including, the upcoming elections, as well as the holidays). Obviously, the NRC is trying to rush the process, and keep public involvement to a bare minimum. This is unconscionable and the environmental scoping period should be extended. (0100-1 [Berger, Dian])

**Comment:** I am requesting that the NRC extend the public comment period on this issue until February 15th, 2013. The months of November and December are usually very busy for citizens

especially in light of our national, state and local elections. The public needs adequate time to learn about and express opinions about this serious issue. (0103-1 [Craig, Anne])

**Comment:** I am the North Carolina Sierra Club Nuclear Chairperson and I would like to request that you extend the public comment period from Jan 2, 2013 to February 15, 2013. Given the importance of this EIS to the nuclear industry, having such a short comment period will not provide a good representation from the public. With the election, the holidays, and now the potential catastrophic consequences of hurricane Sandy and the other two storms, the public will need more time than the January 2 deadline. (0104-1 [Cunningham, Kristine])

**Comment:** Please consider changing the public comment closing date from Jan 2 to Feb 15. (0104-3 [Cunningham, Kristine])

**Comment:** Please DO NOT RUSH the process of deciding the best solution(s) for dealing with the nuclear waste issue. It should take about seven (7) years to come up with a safe, forever lasting and doable Waste Confidence Environmental Impact Statement (EIS). (0111-1 [Evans, Patricia])

**Comment:** Twenty four organizations, represented by three experienced attorneys have spelled out the flaws in this [scoping] meeting, including lack of sufficient notice and detail to allow for meaningful public comment. The Commissioners have thus far not responded to the arguments spelled out in this letter. (0114-2 [Swanson, Jane])

**Comment:** And I would comment on the process, too, that the public comment period should be six months long, not 70 days long. (0118-2-3 [Kamps, Kevin])

**Comment:** I'm on the subject of I sure would like an extension on the comment period. (0118-21-1 [Lewis, Marvin])

**Comment:** I would just add that I know that there were staff who had voiceded concerns that the Waste Confidence Decision and Rule, could take three to four times as long as the Commission has required you to do it in. And I believe those people were right and I hope that ultimately they prevail because I think in order to do a thorough job, I just, I think two years is way too short a time frame. (0118-23-2 [Zeller, Lou])

**Comment:** And I think, to repeat what was said by some previous commenters just now, this whole rush job of the 70 days for environmental scoping, is not acceptable. I would put forward a six month Environmental Scoping Public Comment Period. But, even at this stage, if NRC is truly interested in hearing from large segments of the public, then a much longer public comment period. (0118-25-3 [Kamps, Kevin])

**Comment:** The public comment on the scoping process I understand goes until January 2nd. That's less than a month away. That strikes me as a sick joke. This is a busy time of year for many people. If you actually expect public involvement, you should extend that comment period for several months. (0119-6-1 [Agnew, David])

**Comment:** Two years to complete the generic environmental impact statement is far too short. My understanding is that NRC staff has said that it would take seven years to do the job properly. (0119-6-2 [Agnew, David])

**Comment:** Think it's disregarding and insulting for the NRC to expect the average citizen to respond to a scoping process on the nuclear waste issue in 20 days to the November 14th hearing when the NRC and our federal government hasn't responded to it for over 50 years in our mind. In addition, we're expected to attend that hearing, no expenses paid. We all have jobs and homes. We live far away from where the hearing is. So if we can't do that, we have to navigate a technology that's really unfamiliar to the average person. (0119-7-1 [Sorensen, Laura])

**Comment:** I'm writing to ask for an extension and more public meetings on the nuclear waste decision. It is much too critical an issue to rush into. (0120-1 [Bernard, John])

**Comment:** Extend Public Comment: The time frame for making public comment (October 26, 2012 to January 2, 2013) is absurdly short. A six-month time period for making public comments is more reasonable. The public comment deadline should be significantly extended. (0148-2 [Lampert, Mary])

**Comment:** Extend Public Comment Meetings: A single in-person hearing (Nov. 14th at NRC HQ in Rockville, MD), and a mere handful of webinars, is far from enough. In-person public comment meetings should be held in each region of the country. (0148-3 [Lampert, Mary])

**Comment:** Extend the two year period for examining the rule. This is a critical issue that deserves thorough exploration that may not be possible in a 2 year time frame. (0152-3 [March, Leslie])

**Comment:** NRC should stop rushing this environmental impact statement process. Just last year, NRC staff estimated it would take 7 years to do a quality job on an EIS. But now, NRC is rushing the entire process in just 2 years. (0216-1 [Cobb, Sandra])

**Comment:** NRC should extend comment deadlines, and hold public comment periods in every atomic reactor community, to do a comprehensive, high quality EIS. (0216-2 [Cobb, Sandra])

**Comment:** I respectfully request that the NRC extends the deadline for comments until and unless we know that we will be able to handle radwaste from a Fukushima type accident within these United States. (0217-1 [Lewis, Marvin])

**Comment:** Also more and more issues raise their heads while the end date for comment period rushes toward us. Extend the comment period in fairness to all. (0223-3 [Lewis, Marvin])

**Comment:** Given the disasters that have taken place worldwide, such as the incident at Fukushima Daiichi, as well as the number of accidents that have taken place here in the US, such as spills and lapses in security at Indian Point Reactor, the NRC must also take the time to be thorough in its preparation of the EIS. (0228-2 [Wallace, Martin])

**Comment:** We were disappointed that the public was only given until January 2, 2013, to respond to the deadline set by the NRC on this issue. We ask you to respond with substance,



not evasion or denial, to what we're sending in now, so that we can begin a real dialogue to address this crucial problem. (0237-5 [Thomas, Ruth])

**Comment:** The public comment period should be extended for several months. Having it terminate 1/2/13 - is further evidence that the NRC is not interested in what the public thinks. NRC process for public involvement is carefully constructed to exclude the public, while giving the appearance of openness. (0242-2 [Agnew, David])

**Comment:** Two years to complete the GEIS is far too short (NRC staff has said it would take 7 years to do the job properly). (0242-3 [Agnew, David])

**Comment:** The public should be given more time (at least 60 days more) to submit comments. The deadline for comments comes at a suspiciously inconvenient time for the public. (0247-2 [Geary, B.])

**Comment:** Please keep the public comments period open until a decision has been made about what to do with this kind of waste, by a committee that includes nuclear experts who are independent and not associated with the nuclear industry. (0252-3 [McCollough-Howard, Celeste])

**Comment:** As explained in the attachment, NEI supports the schedule established by the Commission in SRM-COMSECY-12-0016 to publish a final WCD and rule by September 6, 2014. The schedule allows both a full review of the issues identified by the United States Court of Appeals for the D.C. Circuit<sup>4</sup> and a timely resolution of the rulemaking process. Maintaining this schedule is an essential objective, since the Commission will not make final licensing decisions on pending license applications dependent upon the WCD until the remanded issues are resolved. (0263-1 [Ginsberg, Ellen])

**Comment:** The two-year schedule established by the Commission for the agency to publish the updated final Waste Confidence Decision (WCD) and rule is sufficient to address the deficiencies identified in the D.C. Circuit's decision in a generic environmental impact statement (EIS), and to allow for meaningful public participation in the review and rulemaking processes. Based on existing information, the agency has a robust basis upon which to build in developing the EIS, and can focus upon the targeted issues identified in the Court's remand. The two-year timeframe will provide the NRC staff with ample opportunity to take the "hard look" at the issues as required by the National Environmental Policy Act (NEPA). (0263-20 [Ginsberg, Ellen])

**Comment:** First, the NRC should adhere to the schedule it set forth to prepare the EIS and update the WCD within two years. The NRC has stated it does not anticipate issuing new reactor licenses, reactor license renewals, independent spent fuel storage installation (ISFSI) licenses or ISFSI license renewals until it addresses the court remand of the WCD and rule on a generic basis. Reaching licensing decisions for such facilities is a key element of the NRC mission, and it is important to the country that the NRC carries out this responsibility. Duke Energy has two new reactor licenses under NRC review that will likely be delayed due to the court remand. Given the substantial experience base associated with on-site used fuel storage, two years should be sufficient time to prepare a focused EIS and carry out rulemaking, while providing ample opportunity for public involvement and input. (0264-1 [Jamil, Dhiaa])

**Comment:** The two-year schedule for completion of a waste confidence Environmental Impact Statement (EIS) and a new waste confidence rule, with release of the draft EIS for public review and comment scheduled for September 2013, provides insufficient time for the NRC Staff to develop a credible technical basis for the EIS and rule. (0265-1 [Halstead, Robert])

**Comment:** The NRC clearly recognizes the importance of addressing the deficiencies identified by the Court in a timely manner. "Resolving this issue successfully is a Commission priority," said NRC Chairman Macfarlane on the day the Commission initiated the EIS and revised waste confidence decision and rule. Such statements by NRC's leadership, the ambitious 2-year schedule, numerous opportunities for public participation, and the newly created Waste Confidence Directorate are all indicators of the Commission's commitment to fully but efficiently respond to the Court's concerns. Particularly because delay could detrimentally affect proceedings designed to determine the public interest in licensing matters, we urge that the proposed 24-month schedule be maintained. (0268-2 [Wright, David A.]

**Comment:** Additionally, the comment period provided (October 26, 2012 to January 2, 2013) is so short so as to make it extremely difficult for the public to participate meaningfully in the scoping process. Providing so few days, some of which span the traditional holiday and vacation period, is inadequate. On an issue so significant and with such a lasting impact as nuclear waste policy, the NRC is neglecting its responsibility to provide for adequate public participation. The agency should provide a reasonable number of public hearings in geographically diverse parts of the country, especially in reactor communities, to inform the public of the intentions of the agency and the process for public participation. It is imperative that the public comment period be extended to allow a reasonable opportunity for the public to engage with the process. (0269-8 [Warren, Barbara])

**Comment:** Now that the D.C. Circuit has vacated the Waste Confidence Determination, the Commission and Staff have suggested that the NEPA analysis can be conducted in a mere two years. Such an evolution of NRC Staff's understanding of the technical and legal work necessary for such an analysis makes no sense. This is especially so in light of the fact that this EIS must examine the configuration for safe storage of SNF beyond a time ever considered and an analysis that must examine the environmental consequences of failing to establish a repository when one is needed. As we detail *supra*, there are a host of associated matters that must be addressed and we are hard pressed to envision NRC finishing its work in two years. (0271-5 [Fettus, Geoffrey])

**Comment:** We oppose the NRC's two-year deadline to complete the waste confidence rule. The agency is rushing the process and the public will suffer if the NRC persists in pleasing the industry at the expense of public safety. (0273-2 [Zeller, Lou])

**Comment:** In any event, we recommend that the Commission heed the advice of those who estimate that the waste confidence rule should take three to four times as long as what the Commission has ordained. (0273-8 [Zeller, Lou])

**Comment:** The Council supports the NRC's proposed additional analysis required by the National Environmental Policy Act (NEPA), and believes it is essential that the NRC's proposed

focus and schedule be maintained for completing such analysis in an expedited fashion. Much of the information is already available from previous analyses, or can be readily developed, and a final Environmental Impact Statement (EIS) and an associated Waste Confidence Decision and Rule can be issued on or before August 2014, as called for in current plans. We urge the NRC to resist suggestions that this schedule is somehow "rushed," especially given the narrow scope of the Court's remand. (0276-2 [Blee, David S.] [Knox, Eric])

**Comment:** The proposed schedule gives NRC appropriate time to meet its obligations in a deliberative manner. Licensing action delays for 24 current or proposed projects (SECY-12-0132 Enclosure, Licensing Actions Affected by Waste Confidence Remand, Oct. 3, 2012) will have an adverse impact on the Nation's consumers of electricity. It would be deleterious to the pending license applicants, absent some compelling reason (and we have seen none provided to date by the intervenors or anyone else), to further delay timely resolution of this matter. (0276-3 [Blee, David S.] [Knox, Eric])

**Comment:** Two years is simply not enough time to collect and analyze the data required to issue an honest WCD. The NRC's own staff working on the Long-Term Waste Confidence Update Project has stated that it needs seven years to study topics related to updating long-term waste confidence. Certainly, the D.C. Circuit Court's order to analyze indefinite spent fuel storage would qualify as "long-term waste confidence" and the work of the Long-Term Waste Confidence Update Project should be considered. (0281-4 [Fuchs, Katherine])

**Comment:** The storage of spent fuel is a very serious, long-term environmental, economic, and social endeavor. The Alliance is concerned that the aggressiveness of NRC's current draft EIS schedule might be more responsive to political concerns. (0288-6 [Brailsford, Beatrice])

**Comment:** The January 2, 2013 deadline for public comment is too short a period, particularly considering the gravity of this issue and the time of the year (holiday season) that the NRC has chose for comment. (0290-1 [Craig, Anne])

**Comment:** The process for rule making is too short, in essence being rushed. (0290-2 [Craig, Anne])

**Comment:** The time frame for making public comment (October 26, 2012 to January 2, 2013) is unacceptably short. A six-month time period for making public comments is more reasonable. The public comment deadline should be significantly extended. (0296-10 [Shapiro, Susan])

**Comment:** Since the Commission published that it has pre-determined that the EIS must be completed by 2014, it fails to meaningful consider the relations of the decision-making process before even obtaining Scoping comments or preparing a final Scoping document, clearly pre-determined time restrictions for review limit the necessary decisionmaking process required by the Court. (0296-8 [Shapiro, Susan])

**Comment:** Thus, NRC should give full thought and opportunity to temporary storage and it should extend the comment period so that all who may have attempted to comment but were discouraged by the foreshortened methods of doing so, may not be further discouraged from putting more thought and participation to this subject. (0297-4 [Tibbits, Kathy])

**Comment:** I am requesting that the U.S.N.R.C. extend the public comment period for at least six months on the scoping of the Environmental Impact Statement (EIS) to support the update of the Waste Confidence Rule. A period of two and a half months, as originally set in October by the Commission is far too short -- especially during the national election and holiday season -- for people to make serious comments on such a significant issue. (0299-1 [Calter, Thomas J.]

**Comment:** NextEra supports the schedule established by the Commission in SRM-COMSECY-12-0016 to publish a final waste confidence decision and rule by September 6, 2014. The schedule allows both for a full review of the issues identified by the D.C. Circuit Court of Appeals and a timely resolution of the rulemaking process. NextEra believes that maintaining this schedule is an essential objective, since the Commission will not make final licensing decisions on pending license applications dependent upon the Waste Confidence Decision until the remanded issues are resolved. (0302-1 [Nicholson, Larry])

**Comment:** Rushing through this review of the waste confidence ruling is a grave error. If there is no confidence in the review, there will be no confidence in the authority of the NRC. (0308-1 [Gould, Schuyler])

**Comment:** Please extend the time for public hearings...as well as an extension of time for the entire environmental scoping process. I have not had enough time, (nor has the general public had not had enough time) to study the issues and prepare either written or oral comments. (0311-1 [York, Jennifer])

**Comment:** Please extend the deadline for public comments on the court-ordered environmental assessment of your "Nuclear Waste Confidence Decision and Rule." Your Jan. 2 deadline is too short. (0312-1 [Nichols, John])

**Comment:** Please extend the environmental scoping period. Also additional in-person hearings should be held in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0313-1 [Hoodwin, Marcia])

**Comment:** Would you please let the people who live in the shadow of these nuclear power plants have time to comment on the mountain of waste that has been generated over the years and what to do with it. They are the ones that are reporting increased cancers and bear the brunt of the decisions. (0317-1 [Ingram, Gwen])

**Comment:** Please provide an adequate extension of time for the environmental scoping sessions hearings, as well as an extension of time for the entire environmental scoping process. NRC has not provided the public with enough time to study the issues and prepare either written or oral comments. (0318-1 [Lambert, Gwen])

**Comment:** Since the WCD and TSR have widespread licensing implications, we would like to see that the EIS be done carefully and thoroughly and not rushed through to meet some artificial 2-year time period. In our view, a 24-month review limits or constrains a thorough consideration of all possible ideas and options. (0321-14 [Mahowald, Philip R.]

**Comment:** The schedule for the long-term update to the Waste Confidence Rule and related EIS indicated that a draft EIS would be available in 2017 and the final EIS and a final decision would be in 2018/2019. Furthermore, COMSECY-12-0016 (Approach for Addressing Policy Issues Resulting from Court Decision to Vacate Waste Confidence Decision and Rule) contemplated completing the EIS in 2017.

A review of recently completed reactor licenses (17) indicates that the review time ranged from 21 months to 76 months, with an average of 32.9 months. Taking out the outliers (45, 62, and 76 months) reduces the review time to 26.9 months. The NRC plans for an average review time of 24 (no hearing) to 30 (hearing) months. Regardless of the length it takes to complete the reactor license renewal, the licensee will still be allowed to operate as long as it is in timely renewal. It does not seem likely that a reactor license renewal will not be granted if the Waste Confidence EIS is not completed within 24 months. (0321-15 [Mahowald, Philip R.]

**Comment:** NEI is arguing that license applicants' economic interests in obtaining permits as quickly as possible should be the NRC's driving consideration in determining the scope of the EIS; and the EIS should not take so long to prepare that it cannot be finished by the fall of 2014.

But this argument flies in the face of both the AEA and NEPA. Under the AEA, the NRC must put safety first, and may not be influenced by cost considerations in its decisions. *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 117 (D.C. Cir. 1987). And NEPA requires the NRC to take a "hard look" at environmental impacts, showing that it has taken into consideration "every significant aspect of the environmental impact of a proposed action." *Baltimore Gas & Electric v. NRDC*, 462 U.S. 87, 97 (1983) (quoting *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976); *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978)). The Waste Confidence Decision is a determination about the safety and environmental impacts of storing long-lived radioactive materials that can seriously contaminate the environment and harm public health if released, and that contain plutonium that poses a serious national security threat.

In reviewing issues surrounding the storage (and disposal) of these materials, the NRC simply may not cut corners in order to meet an arbitrary schedule desired by the nuclear industry. The safety and environmental evaluations in the waste confidence EIS must be adequately supported to satisfy both the AEA's "no undue risk" standard and NEPA's "hard look" standard. As discussed in the Organizations' Comments and supporting declarations, this effort is likely to take upwards of seven years. (0322-1 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** In the meantime, this proceeding must be suspended by NRC, and the allotted time for public comments must be re-started from the beginning. We refer you to a November 8, 2012 letter sent to the five NRC Commissioners, re: the Notice of Intent to Prepare Waste Confidence EIS, signed by Diane Curran, Mindy Goldstein, and Geoff Fettus on behalf of a coalition of environmental organizations, including Beyond Nuclear. (0326-2 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** The time frame for making public comment (October 26, 2012 to January 2, 2013) is absurdly short. A six-month time period for making public comments is more reasonable. The public comment deadline should be significantly extended. (0326-3 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** Also, NRC should stop rushing this environmental impact statement process. Just last year, NRC staff estimated it would take 7 years to do a quality job on an EIS. But now, NRC is rushing the entire process in just 2 years. NRC should extend comment deadlines, and hold public comment periods in every atomic reactor community, to do a comprehensive, high quality EIS (0326-5 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** We recommend that several public meetings should also be held after the written comment period. (0004-12-1 [Barczak, Sara])

**Comment:** We are extremely dismayed that the NRC is not engaging reactor communities or potential reactor and/or nuclear waste dump communities despite recommendations made by the Near Term Task Force on Fukushima and the Blue Ribbon Commission to more intentionally engage affected stakeholders. We recommend holding scoping meetings in affected and possibly affected communities across the country and do not see these web-based hearings to be a suitable substitute for direct contact. (0004-12-3 [Barczak, Sara])

**Comment:** And we urge the NRC to do too at that point extend itself to other – to offer additional meetings and communities directly impacted by radioactive waste generation and storage (0004-13-3 [French, Dominique])

**Comment:** Our message to the NRC is one: there should be regional hearings so that those living near nuclear power plants and stored high-level radioactive waste can attend and talk to NRC officials in person. (0004-14-1 [Zeller, Lou])

**Comment:** We -- the Alliance agree with the others on the procedural need to alter the calendar for comments and agree with others who've suggested hearings need to be held specifically in the impacted communities. (0004-15-1 [Weisman, David])

**Comment:** Additionally, to comment on the process that we're dealing with, my organization does feel that this should be a national process and not something that only just happens in Rockville. First, we do appreciate using new technologies and having the webcast and the phones. This is definitely an improvement over, you know, what would have been available, you know, a decade ago, so we do appreciate your using that, but we do not think it's a substitution for real in-person exchange. I think at an absolute minimum you should do some special outreach efforts in the Midwest and the Southeast and the Northeast where there's higher concentrations of reactors. I would say at least one hearing in the Upper Midwest and one in the Plains and also in the Southeast and New England. (0004-18-7 [Fuchs, Katherine])

**Comment:** We would like to request a site-specific hearing on the scoping and on the IES to be held in Plymouth, Massachusetts. (0004-23-3 [Sheehan, Margaret])

**Comment:** Will close by once -- by specifically requesting a hearing in the New York Indian Point area. (0004-25-17 [Shapiro, Susan])

**Comment:** One of the Blue Ribbon Commission's recommendation was to make sure that the public was engaged and involved, otherwise it will fail again, as at Yucca Mountain. And by only holding very limited public hearings, as you did with the Blue Ribbon Commission, you've left out many -- you did in that evaluation leave out many, many communities as well, including the Indian Point community and many other communities, and I really think that if -- to do this properly, you need to include all reactor communities, because we have now become long-term storage waste dumps, and they are site-specific issues. If you're going to try to do a generic study, then everyone needs to be considered. (0004-25-8 [Shapiro, Susan])

**Comment:** The State of New York strongly urges that the NRC staff and the commissioners as they go through this rule, make provision so that interested governmental entities, states, host communities, citizens, can actually raise issues of concern about site-specific environment impacts related to onsite storage of spent nuclear fuel and amongst those options the high-density storage in spent fuel pools. (0004-5-5 [Sipos, John])

**Comment:** We commend you for your public outreach. We think your communications plan that you've laid out makes sense and will help to involve all stakeholders and we will look forward to further discussions. (0004-7-4 [Ginsberg, Ellen])

**Comment:** The NRC needs to sit down with ordinary citizens and really hear their concerns, and the NRC needs to listen. We all are in agreement that a long-term solution to storing radioactive waste must be found, but if the NRC excludes the ideas and voices of the creatives, visionaries, innovators, and even the dissenters, then we're not truly having an open forum, are we? (0005-11-1 [Star, Priscilla])

**Comment:** And as a member of the public, it's very difficult actually to feel any kind of entry into the response process. So I wanted to say that I think that the processes and procedures that you have in place aren't really allowing for a true public dialogue. It's difficult to get information. It's kind of difficult even to connect with this call. So I'm -- what I'm calling for is more transparency with the NRC. (0005-12-1 [Laramie, Eve])

**Comment:** Be more transparent, reach out to us more, do the honorable things in distributing information. Don't bury it so much on your website or in the interface of these opportunities for us to, you know, interact with you. We need to really be thoroughly included in the process. (0005-17-6 [Laramie, Eve])

**Comment:** And it goes back to what I called for earlier today at headquarters in Rockville, and that was that site-specific hearings be held to look at site-specific matters across the country. (0005-5-1 [Kamps, Kevin])

**Comment:** I wanted to touch on something that the Blue Ribbon Commission on America's Nuclear Future has advocated in its final report, and that is a consent based approach to interactions with the public, and I think this is appropriate for onsite storage as well, which is the grand scope of this proceeding. And I think that what I'll say is that the limitation of these public

comment opportunities to one physical meeting and three webinars is a start, but far from what is necessary. So I called for it earlier today, I'll call for it again, that hearing should be held across the country in the vicinity of nuclear power plants, and their high level radioactive waste storage pools, and their dry cask storage facilities. These hearings should be held across the country. (0005-7-4 [Kamps, Kevin])

**Comment:** Add hearings in communities living in the shadow of high-level radioactive waste storage pools and dry casks. (0014-2 [Andreas, Sonja])

**Comment:** ...that more hearings be held in or near reactor sites. (0016-2 [Jeffrey, Monroe Edwin])

**Comment:** As you have a reputation of impartiality and careful investigation, you must appreciate that those living around nuclear plants have special environmental concerns related to their specific geographic areas, and therefore I assume that you would understand the value of holding hearings in the immediate areas of these facilities. (0019-2 [Gellert, Sally Jane])

**Comment:** Allowing only 1 in-person meeting and a few webinars doesn't allow for enough time for reasonable public comment on this serious topic. (0020-2 [Grenard, Mike Hayduke])

**Comment:** Secondly, I urge you to hold in-person hearings in every community directly affected by a reactor or proposed reactor and it's high-level radioactive waste. A single in-person hearing is not enough for this issue. Each reactor site is unique in its past, present, and future challenges, and each directly affected community deserves to have their voices heard in person. (0029-4 [Anderson, Johanna])

**Comment:** The NRC needs to hold regional hearings. (0043-3 [Bosold, Patrick])

**Comment:** We need to know what the NRC and its affiliated agencies intend to do about the hazards of spent nuclear fuel storage, and the complete scope of possible environmental impacts - to land, water, air - and most importantly to our bodies, to the health of the citizens in the United States. Without being fully informed, without true transparency, the "facts" become complete guesswork. The NRC needs to sit down with ordinary citizens and REALLY hear their concerns, and the NRC needs to listen. We all in agreement that a long-term solution to storing radioactive waste must be found. But if the NRC excludes the ideas and voices of the creatives, visionaries, innovators and even the dissenters, then we are not truly having an open forum, are we? (0049-4 [Laramee, Eve])

**Comment:** Therefore we urge the NRC to establish four regional additional in-person environmental scoping hearings to be held in communities that are near high level waste storage pools and dry casks, at dates and times early in 2013. And to schedule webinars as they are requested early in 2013. (0059-3 [Birmie, Pat])

**Comment:** I urge you to hold regional hearings, so that those living in the shadows of nuclear power plants and their stored high-level radioactive waste LIKE ME can attend and talk to NRC officials in person. (0060-4 [Winholtz, Betty])



**Comment:** The NRC should hold site specific hearings on the scope of the EIS. (0084-4 [Vale, Karen])

**Comment:** In addition, Riverkeeper respectfully requests additional regional scoping meetings to ensure that interested stakeholders in critically impacted communities, (such as New York State in general, and the communities surrounding Indian Point in particular), have a full and fair opportunity to inform the environmental review process. (0086-3 [Brancato, Deborah])

**Comment:** Indeed, additional meetings are necessary in light of the fact that, just a few weeks into the commenting period, it remains far too early for commenters to render comprehensive and thorough scoping comments at tomorrow's meetings. Tomorrow's sole scheduled scoping meetings, being held in Washington, D.C., are simply not enough in light of the significance of the issues to be considered and analyzed. These limited meetings unacceptably fail to allow the neighbors of nuclear power plants-to-attend and talk to NRC officials in-person. Remote webinars are not a substitute for direct contact. (0086-4 [Brancato, Deborah])

**Comment:** I also request that additional in-person hearings be held in communities that are living in the shadows of high-level- radioactive waste storage pools and dry casks. (0098-2 [Bosold, Patrick])

**Comment:** Also additional in-person hearings should be held in communities living in the shadows of high-level radioactive waste storage pools and dry casks. (0100-2 [Berger, Dian])

**Comment:** And, finally, on the process, that the scoping hearings, at this stage of the EIS proceedings should be held in every nuclear power plant community. I heard a commitment earlier from NRC, one of the staff who spoke in the intro, that perhaps during the draft Environmental Impact Statement, public comment time period, that hearings would be held on a regional basis, if I heard that correctly. But, again, at this stage of the proceeding and that the draft Environmental Impact Statement stage, we request that every nuclear power plant community be granted an NRC in-person hearing. Just to emphasize, I think that the Webinars are necessary and appreciated, but not sufficient. And in-person hearings will add a lot of value to this proceeding. (0118-2-4 [Kamps, Kevin])

**Comment:** You mentioned something about if the public was interested. And I believe that if you held these hearings locally, around the nuclear power plant, and there's like 104 of them in the United States. I think that you would have an uproar from the people of the United States that you would hear from. And they would have suggestions that might would help you solve this problem that you're running into, having the dangerous nuclear waste that's going to last for hundreds of thousands of years. (0118-20-1 [Kerr, Julius])

**Comment:** And I'm in the southeast and if it -- and I support meetings at every reactor site, every host community. I think that's important. And if it devolves down to so-called regional meetings, in the southeast there should be at least state meetings or subregional meetings. One regional meeting in Atlanta is not going to cover the southeast with the number of new reactors and re-licensing reactors that are involved in this and I think it's important that the southeast get due consideration when this scheduling is decided on any further meetings. And, again, I think

every host community should have the opportunity, but the, and echoing the question, which I didn't feel was adequately answered. (0118-3-2 [Safer, Don])

**Comment:** I feel that the current NRC process for public involvement has been carefully constructed to exclude the public while giving the appearance of openness. People would have to be wealthy to participate. They have to hire lawyers or be lawyers. And even then, they don't have much of a chance. Highly technical, highly legal. (0119-6-7 [Agnew, David])

**Comment:** I just want to say that I think there should be more than three or four hearings on this issue. I think that there should be hearings at every reactor site and every proposed storage area if the people in those communities want it -- want to have a hearing. And certainly the listing those that would like to have it, but I'd like to say that three or four is not enough. (0119-8-1 [D'Arrigo, Diane])

**Comment:** Hold NRC hearings close to reactor communities so that everyone has an opportunity to comment. (0152-5 [March, Leslie])

**Comment:** PLEASE...hold hearings in reactor communities, (0165-2 [Zimmermann, Warren])

**Comment:** Citizens need to be given ample time to make their decisions, truthful information needs to be easily accessible, and their voices MUST be heard and respected. (0197-1 [Falkner, Carla])

**Comment:** Let us mostly enable the public to comment meaningfully their wishes on these issues by having local sessions, after all they are the ones who live near these potential and actual disasters and will bear the consequences. Let's live in an actual democracy where the people's voices matter. (0221-3 [Kline, Susan])

**Comment:** The public is not being represented nor being protected. Those that speak out and are knowledgeable are not being heard. A majority of citizens in this country are being misled about nuclear power. (0237-7 [Thomas, Ruth])

**Comment:** Public meetings for the EIS should be in every reactor community. (0242-8 [Agnew, David])

**Comment:** In response to the question asked by NRC staff at webinars related to the proposed EIS scoping, regional meetings should be held within 100 miles of every nuclear power reactor or used fuel storage site to allow the public near those sites to personally observe that such reactor and storage sites are in jeopardy of becoming de facto perpetual storage sites without a used fuel geologic repository. (0244-20 [Lacey, L. Darrell])

**Comment:** Considering the national and regional significance of the Waste Confidence EIS, and the potential implications for reactor host communities and transportation corridor states, the NRC should consider holding public meetings on the draft document in the following cities:

Atlanta, GA  
Boston, MA  
Chicago, IL

Denver, CO  
Los Angeles, CA  
Omaha, NE  
Philadelphia, PA  
Phoenix, AZ  
Portland, OR  
St. Louis, MO (0265-21 [Halstead, Robert])

**Comment:** The NWSC appreciates NRC's efforts to hear from the public and other stakeholders via a number of meetings, webinars, and comment periods associated with the instant two-year process. We respectfully request that the NRC make a concerted effort to consult with affected stakeholders, including licensees, states, tribes, and local communities, throughout the Waste Confidence review process as is feasible under the schedule. (0268-4 [Wright, David A.]

**Comment:** Before issuing its Final Environmental Impact Statement, we recommend that the Commission hold a series of regional public hearings so that those living near nuclear power plants and their stored high-level radioactive waste can attend and comment. (0273-1 [Zeller, Lou])

**Comment:** During the scoping hearing on December 6th, we were informed by the NRC of plans to hold an EIS hearing at various locations across the U.S. The NRC asked for feedback on what locations would be best. As stated orally, SAFE Carolinas believes that all nuclear plant sites deserve an EIS hearing on nuclear waste... (0274-9 [Sorensen, Laura])

**Comment:** While the Blue Ribbon Commission on America's Nuclear Future did not perfect the process of soliciting input from the national public, it should serve as an example for the NRC in as much as it provided opportunities for public comment across the country. WCD hearings must not only happen in Rockville. Minimally, ANA suggests in-person WCD meetings occur in the following cities:

Albany, NY  
Philadelphia, PA  
Atlanta, GA  
Chattanooga, TN  
Columbia, SC  
Chicago, IL  
Kansas City, MO  
Santa Fe, NM  
Los Angeles, CA (0281-2 [Fuchs, Katherine])

**Comment:** In light of NRC's refusal to conduct meetings at every reactor site, we request, in the alternative, in-person meetings in Maryland (at NRC headquarters), in California, and in each of the following regions: the Northeast, the mid-Atlantic region, the Southeast, the Midwest, and the West. These locations would roughly correspond to the locations of the NRC's headquarters and its four regional offices (in Pennsylvania, Georgia, Illinois and Texas), plus California, New York and the New England states. The meetings could be held at the NRC's offices or at a

public facility that is located equidistant between the multiple facilities in the region. Webcasts are simply not a substitute for live meetings, especially because many individuals living near these facilities do not have access to the internet. Thus, to afford the concerned public a reasonable opportunity to participate, meetings in each region housing a nuclear facility are required. (0286-60 [Curran, Diane])

**Comment:** There should be regional hearings held so that people living near nuclear power plants can attend and talk to the NRC in person. (0290-3 [Craig, Anne])

**Comment:** Public Meetings and Purpose. As part of the EIS process, the Commission has indicated it will hold a series of public meetings. The City believes that one of these public meetings should be held in or near the City. (0291-25 [Harlan, Thomas])

**Comment:** We are respectfully requesting that hearings regarding the Waste Confidence EIS be scheduled with adequate notice within the Indian Point Reactor community, as it is the most densely populated reactor community in the country, with over 20 million people within the 50 mile radius. (0296-1 [Shapiro, Susan])

**Comment:** One single in-person hearing on November 14th in Rockville, MD, and a handful of webinars, with only one in which public comments could be made, is clearly inadequate for this nationally important environmental issue. At a minimum public comment meetings should be held in every nuclear power reactor community, with supplemental remote webinar/teleconference participation options for those unable to attend in person. (0296-3 [Shapiro, Susan])

**Comment:** At a bare minimum a public in-person comment hearing must be held in within the Indian Point reactor. (0296-4 [Shapiro, Susan])

**Comment:** To provide an adequate EIS are required by the Court, the NRC should hold public comment periods in every atomic reactor community due to the enormity of the environmental impacts and consequences of interim/long term nuclear waste storage on reactor sites nationally. (0296-9 [Shapiro, Susan])

**Comment:** Additionally, we would like to see the Commission hold regional public hearings on this issue. One public hearing in Rockville, MD, and a series of webinars, is not really sufficient for true public input -- particularly in areas where nuclear reactor waste is already a problem. (0299-2 [Calter, Thomas J.])

**Comment:** In addition, I urge the NRC Commissioners and NRC Staff liaison to hold regional hearings, so that those living in the shadows of nuclear power plants and their stored high-level radioactive waste can attend and talk to NRC officials in person. Thank you! (0311-4 [York, Jennifer])

**Comment:** Moreover please hold additional in-person hearings be held in communities living near high-level radioactive waste storage pools and dry casks, including on Cape Cod, from which there is no means of escape should a disaster occur at Pilgrim nuclear plant at Plymouth. (0312-2 [Nichols, John])

**Comment:** In addition, it's necessary for you to hold regional hearings, so that those of us who are living in the shadows of nuclear power plants and their stored high-level radioactive waste can attend and talk to NRC officials in person. (0318-2 [Lambert, Gwen])

**Comment:** EPA recommends holding regional meetings to discuss the EIS in major population centers (such as New York City) that have a number of nuclear power plants and SNF storages in close proximity. (0325-8 [Bromm, Susan E.]

**Comment:** A single in-person hearing (Nov. 14th at NRC HQ in Rockville, MD), and a mere handful of webinars, is far from enough. In-person public comment meetings should be held in every nuclear power plant community, supplemented each time with the remote webinar/teleconference participation option for those unable to attend in person. At the bare minimum, in-person public comment meetings should be held in each region of the country (0326-4 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** The NRC has to do a much better job engaging the public, not disengaging the public from a crucial debate about an issue that will affect many, many, many future generations. (0004-12-8 [Barczak, Sara])

**Comment:** The NRC's repeated declaration that it seeks input from the public is not supported by its actions. (0114-3 [Swanson, Jane])

**Comment:** I was kind of, had some difficulties myself getting to this webcast today, through the public involvement, public meeting, live meeting webcast page, which is, normally lists all the meetings which are available. It was not there and I ended up calling the 800 number and Dave McIntyre answered the phone and kindly directed me and said it was not too late. So, for a person like myself, who is relatively familiar with the processes here, to have missed that, I can imagine there are others that may have been frustrated by that. So simply a suggestion would be to post that, because Dave looked there too and he didn't see it, at the one which is [www.nrc.gov/public-involve/public-meetings/index.cfm](http://www.nrc.gov/public-involve/public-meetings/index.cfm). And, of course, it directed me to the homepage, which you scroll down through spotlight and Waste Confidence Decision, which was okay. (0118-23-1 [Zeller, Lou])

**Comment:** I'm just responding to the question about the approach to outreach. And my observation is that if you're not really used to working in these circles, you don't know anything about this from the NRC. The announcement comes in the Federal Register and you have to be a very determined private citizen to be reading the Federal Register every day. So, if you really are serious about reaching out beyond the circles that normally respond and follow nuclear proceedings and NRC proceedings, there has to be a way and I'm not a public relations expert. I'm sure you guys have people on your staff that do, you know, PR work professionally. There are numerous ways to reach out beyond the Federal Register. The only way that I found out about this was through the network of activists that follow these issues. And so basically the current state of affairs is that the NRC will list these meetings in the, you know, and proceedings in the Federal Register and then on their website, which has been stated. It's not the easiest thing in the world to navigate. It's not the hardest either, but, you know, I appreciate the fact that

you do have a website and the information is there. But I just want to make note that if you are not a determined follower of radiological issues, nuclear power, then you are very unlikely to know anything about this process at all, let along these particular Webinars. And I think the NRC, if you really want to, you have it in your power and certainly in your capability of reaching out, way beyond what you're doing. (0118-24-1 [Safer, Don])

**Comment:** And I would just add that the process, any interaction with the NRC, is fraught with the quasi-legal structure that the NRC has set up that really, in my humble opinion, is an impediment to interaction. If you don't file your proceedings in certain ways, you don't even, you're not even heard. And so, we're left with having to use attorneys, who are well versed in NRC procedure and practice and policy, to even be able to get to the point where we can be heard, and then have our concerns dismissed, usually out of hand and with no good logical basis for it. But, so if the NRC really wants to open up, you know, just, there are a million ways you can become more consumer friendly and reach out beyond. And I would really applaud that movement in that direction. (0118-24-2 [Safer, Don])

**Comment:** Yes, again, a response to this question from NRC staff about how to better the outreach to the public for comments. I asked for it on November 14th, in person there, but I'll repeat it today. A simple email address where comments can be submitted. I know that NRC has a web form available, which is great. But an email would make it much more user-friendly to most folks. It would save that extra step having to go to the web form and fill it out and, you know. It would simply be filling out the email address and then the message and hitting send, which would save some steps, actually, so please do provide an email address where comments can be submitted. (0118-25-1 [Kamps, Kevin])

**Comment:** Another idea that NRC might consider is a way to phone in comments. And granted that there's a special staff on the side of the Waste Confidence Directorate, perhaps staff people could be made available. I saw a couple of names. I'm not going to remember them right now. I believe Ms. Rowe and Ms. Wittick, perhaps. Perhaps there could be a way for simply having the public phone in, speak to an NRC staffer and with the consent of the public commenter, that the comment be recorded. Given modern technology, even to the point of automated systems, where that public comment could then be transcribed, you know, into a digital format and NRC would have that version. And I think, this again is almost a question of equity or justice, because there are people in the country that lack internet access, for various reasons. And then this way telephone comments would be made more, readily made. (0118-25-2 [Kamps, Kevin])

**Comment:** And in terms of getting the word out that this is even underway as a possibility for folks to take part in, public notices, television and radio ads. Or at least public service announcements will get the word out. And I know that NRC's Office of Public Affairs has an extensive media list in every region of the country. Simply a press release out to the media and that would not, you know, if budget lines are a problem with taking active ads out, then the free media that could be generated by simply sending out a press release to the country and hopefully media would pick that up and put the word out. And folks could then visit the Directorate's website or the phone number, as I mentioned, could be provided. (0118-25-4 [Kamps, Kevin])

**Comment:** I support all the suggestions, particularly media to the various media, you have that list, around each reactor site, should generate interest with a simple, go to NRC's website at, to get information to make comments by X date. Simple. Spinning off on comments regarding money, I believe, it was made by the same commenter a couple of times. (0118-26-1 [Lampert, Mary])

**Comment:** Just some parting, just one final comment. And I wish I could see your faces when I make this suggestion but in terms of outreach, Facebook is one of those tools which I think could be used, could be taken advantage of to help get the word out. I mean, that's how we do it, so that's just a final suggestion. (0118-27-1 [Zeller, Lou])

**Comment:** We need better science and we need that science, if you've done it, we need to know about it and it needs to be easy to find, it needs to be part of the discussion in these host communities. It needs to be part of the discussion that you provide as a prelude to public discussion, and it needs to be scientifically valid. And I guess that's all of my comments right now. Thank you for the opportunity and, again, I hope that the NRC will really take up this as an opportunity to really protect the public in a way that I don't think the NRC has been protecting the public in the past. (0118-3-5 [Safer, Don])

**Comment:** And another item too that might bear on the fact that we just heard from a friend of mine that doesn't have Internet and doesn't have a telephone. And I know there are 1,000s of people across the United States that fall into this same category. Maybe we ought to think about a bulk mail-type of information process for people that don't have access to the Internet. (0119-11-2 [Kerr, Julius])

**Comment:** And obviously there are cities -- major cities all across the country where they would be seriously affected if there was a long-term waste storage issue within 30 to 50 miles from them. So I think that should be the guideline for a sort of hearing plan. And obviously, I don't think I need to tell you guys, but it seems like you could probably use Facebook and Twitter better to get the word out about stuff like this. I know the communities that I respond to are constantly sharing information via both those mediums. And I know the NRC has a Twitter account. I subscribe to it. But they can probably do a better job of publicizing events such as this. Because I get the sense that you guys tend to hear from the same 10 or 20 of us a lot. And it would be great if we could expand that. (0119-12-1 [Levine, Gregg])

**Comment:** You mentioned contacting other people. Bulk mail is one way, but also an ad in the local newspaper. I know it will be expensive to do it across the United States, but you would reach people, and you would get people to make comments. And if the NRC really wants to hear from the people, it's going to take sitting down in the pews with them because that's where they're going to be. Most people still read the paper. And that would certainly be one way to connect. And I'll guarantee you there's 1,000s of people out there around nuclear facilities that would like to say something. (0119-13-1 [Kerr, Julius])

**Comment:** For example, one consequence of the foreshortened schedule is that it has eliminated any opportunity to participate by members of the public who live far from NRC Headquarters or have not the capability to access Internet webinars. This practice creates an

artificial divide, favoring those in locations with high-speed Internet and the latest hardware and software. This is patently discriminatory and manifestly unfair. (0273-7 [Zeller, Lou])

**Comment:** We thank the NRC for providing webcasts and conference calls for its initial meetings on this draft EIS. But the agency must go further to capture the breadth of public issues and concerns surrounding the production and storage of spent nuclear fuel. (0288-7 [Brailsford, Beatrice])

**Comment:** I attempted to participate in the public comment on scoping waste confidence at 9:57 am. Central Time, here: <http://www.regulations.gov/#%21submitComment;D=NRC-2012-0246-0001>. I received an error message stating that the web address was incorrect or the document had been withdrawn. I assume therefore that the scoping has been withdrawn. If that is not the case, then I wish to object because it violates due process to shut down notice and opportunity for comment before the conclusion of the comment period. (0297-1 [Tibbits, Kathy])

**Comment:** And I point out that based upon my knowledge of NEPA law, that required an independent determination by the NRC to be made as to the adequacy of the Department of Energy's EIS. It's not a blind determination. We think DOE's analysis of the no action alternative should go a long way towards addressing the environment impacts of the potential failure to cite a permanent repository as well as the other matters remanded by the court. (0004-10-3 [Silverman, Don])

**Comment:** There are a number of technical documents that analyze the potential environmental impacts of a away-from-a-reactor centralized storage that could be useful in the NRC's analysis. They're listed in table 7-1 of DOE's Yucca Mountain EIS and they include a wide range of NEPA analyses that were undertaken both by DOE and others. (0004-10-6 [Silverman, Don])

**Comment:** The Commission also gave some strong guidance in some of their documents, SRMs in this instance, as this is a scoping meeting and some guidance on some scoping that I think I agree with in terms of the fact that Commission indicated that we should be relying on the existing 2010 analysis to the extent possible and really focusing the scope of the review on the three issues that were identified by the court and also the ability to rely on existing information, be it in the DOE EIS or existing NRC information. I know there was a rulemaking petition a few years ago on spent fuel pool fires and there has been a lot of work done in that area and so I know a lot of that has been done. So, we don't need to be necessarily re-inventing the wheel here. I was heartened, Paul, to hear you talk about the fact that we'll -- the NRC will rely on that information to the extent it can do so. That's really it. Just thank you for the opportunity and I appreciate it. (0004-19-2 [Hamrick, Steve])

**Comment:** The second thing is, I want to point out and I think that this group already recognizes that some of the comments in the room today seem to reflect the notion that the Commission has not before looked at the issue of spent fuel storage and spent fuel disposal when, in fact, the Commission has spent a great deal of effort over the years looking at both the environmental consequences of extended storage, of onsite storage, of ultimate disposal through the Table S-3 rulemaking. So, these are all issues that the Commission has looked at before. (0004-20-2 [Repka, David])



**Comment:** In terms of the documents that you ought to rely upon, we've heard some comments that would disqualify documents that were drafted by DOE, whether or not they were adopted by NRC, I think, is irrelevant. You ought to look at all relevant ideas, whether they're drafted by DOE, whether they're drafted by environmental groups, whether they're drafted by NRC people, whether they're drafted by industry. The question is, are those documents reliable and trustworthy? You can't identify those in advance. The scoping process is not the time to identify what will be relied on in the draft Environmental Impact Statement and ultimately in the final Environmental Impact Statement. I think it would be a mistake for you to try to identify in advance at this early stage what it is you're going to rely on. If people want to comment on that, that's fine. But to require that you put that information out for the public, I think, is an improper use and an overexpansion of the scoping process. (0004-27-4 [Silberg, Jay])

**Comment:** So I hope you will cast your net broadly. I hope you will look at the wide variety of documents that are out there on all of these issues. We're not starting from an empty table. We know a lot about all these issues. It's not like the Commission, DOE, environmentalists, ourselves and the industry have never thought about spent fuel pool fires or pool leaks or what to do with waste or what happens if DOE doesn't have a repository. (0004-27-5 [Silberg, Jay])

**Comment:** Certainly the agency can use the analysis that was already included in the 2010 waste confidence decision and the underlying materials to the extent appropriate. We also think that there's work that's been done on the long-term waste confidence update project that can be useful in this context and we'd encourage you to use that. (0004-7-2 [Ginsberg, Ellen])

**Comment:** The other thing I wanted to bring up here that I think is related to that whole discussion of the scope, is that in the Near Term Task Force Report, Recommendation 1 was one of the ones that I thought was most important related to the patchwork of regulations that the NRC was operating with the design, the beyond design, the voluntary initiatives versus the requirement. And my understanding is there's supposed to be a report on that Recommendation 1, in February. And I would urge that this initiative, on the waste confidence, include that analysis of trying to address the regulatory patchwork, so that we don't have this Waste Confidence EIS come out so that it's just looking at design basis issues and not looking at the whole comprehensive way of fixing this regulatory patchwork. So to try to incorporate that into the Waste Confidence that you're doing right now. (0118-13-1 [Warren, Barbara])

**Comment:** Also we suggest that the DEIS and EIS of all reactors be considered from the viewpoint of the by-passing of direct answers to those commenting. (0237-2 [Thomas, Ruth])

**Comment:** We recommend that the testimony of that proceeding, Docket 50-332, be a reference for the core group preparing the DEIS. (0237-6 [Thomas, Ruth])

**Comment:** The only experience the nation has with long term storage of nuclear fuel is within Manhattan Project during World War II. Fuel from production reactors did not maintain structural integrity over the 50 years of storage. A specific example is that of the K-basins at DOE's Hanford, WA site. Will the EIS consider lessons learned from the DOE's management experience at the Kbasins? Are DOE experts being involved in this EIS? (I believe NRC does not have personnel with such experience with long term storage of spent nuclear fuel.) The

scope of the EIS should include an evaluation of past experience with long term storage of nuclear fuel and specific mitigating actions to preclude similar problems with the proposed storage of civilian nuclear fuel. (0246-3 [Kohler, Joseph])

**Comment:** To the extent that this EIS must provide some assessment of the impacts of a centralized interim storage facility alternative, the NRC may draw upon a substantial body of existing information, such as the Final EIS for the Private Fuel Storage Independent Spent Fuel Storage Installation. (0263-10 [Ginsberg, Ellen])

**Comment:** In assessing the environmental impacts of the failure to establish a permanent repository, NEI also supports the Commission's direction in SRM-COMSECY-12-0016 that the NRC staff "may adopt or incorporate by reference all or part of another agency's EIS. For example, the 'no action alternative' in DOE's Yucca Mountain EIS, which the [NRC] adopted in 2008 as part of its review of [DOE's] license application, contains a foundation that the NRC should build upon." (0263-19 [Ginsberg, Ellen])

**Comment:** The Commission, in its discretion, has chosen to prepare an EIS. Nonetheless, as the Commission stated in SRM-COMSECY-12-0016, the NRC staff "should build upon the existing Environmental Assessment that the NRC developed in the 2010 Waste Confidence Decision to the extent possible and should primarily focus any additional analyses on the three deficiencies identified in the D.C. Circuit's decision." NEI fully supports the NRC using the substantial record compiled from the prior WCD update in this EIS effort. The NRC staff should also draw upon other existing supporting analyses. There is no need to start from scratch. (0263-2 [Ginsberg, Ellen])

**Comment:** In addressing these deficiencies, the NRC should take advantage of the considerable body of information that exists to properly evaluate the environmental consequences on a generic basis. A key part of that experience base is the record of safe and secure on-site storage of used fuel at commercial nuclear power plants since the 1960s. (0264-3 [Jamil, Dhiaa])

**Comment:** An analysis should be submitted concerning the spent nuclear fuel storage sites already in existence, their current inventory and allowable storage capacity. (0274-7 [Sorensen, Laura])

**Comment:** However, I do not believe that an independent evaluation requires either a confirmatory or a de novo analysis. Clearly, there is new information since 2010 that should be considered by the Staff, for example the cascading effects of the severe natural phenomena in Japan on its nuclear power plants and the economic and environmental consequences therefrom. However, I believe that the Staff should be circumspect to preserve context and to ensure that it does not overvalue that event in Japan for a NEPA action in the U.S.; there are sufficient safety culture, operational and regulatory differences between plants of the same vintage in the different countries. (0283-5 [Zalcman, Barry])

**Comment:** Other NEPA practices, such as tiering, incorporation by reference, and adoption are discussed in Appendix A to Part 51. These practices are not limited to NRC work products; in

fact, the NRC Staff should consider adopting portions of the DOE EIS (discussed earlier). (0283-6 [Zalcman, Barry])

**Comment:** The "underpinning" of literature review for this evaluation should explicitly include the body of work on waste storage accomplished by the Department of Energy's former "Office of Civilian Radioactive Waste Management"--specifically the work brought together under the banner of "System Architecture" which was a cradle-to-grave system's analysis for waste handling and storage and transport as part of a national repository program (circa 1995). (0285-3 [D'Arrigo, Diane])

**Comment:** We are aware of only one study that even commenced the work of evaluating such matters: the "Long-Term Waste Confidence Update Project," in which the NRC proposes to assess the environmental impacts of storing spent fuel for 200 years after cessation of licensing. See the WCD, 75 Fed. Reg. at 81,040. But as the Commission is well aware, work on the Long-Term Waste Confidence Update Project had only just begun at the time of the D.C. Circuit's decision, and it is far from complete. (0286-3 [Curran, Diane])

**Comment:** The EIS Should Be Able to Cite to and Rely on Other Environmental Assessments or EIS's. (0291-8 [Harlan, Thomas])

**Comment:** Section 10.1 of the BRC's report references the NRC's extended storage and transport regulation review, expected by 2017. We expect the NRC to integrate the BRC's findings and recommendations into the EIS analysis to produce a document of integrity that will, in fact, be a useful decision-making tool in the short and long term. If the findings and recommendations of the BRC are not considered in the EIS analysis, we believe the EIS will be deficient from a NEPA perspective. (0298-4 [Johnson, Abigail])

**Comment:** NextEra strongly agrees with the Commission's statement in SRM-COMSECY-12-0016 that there are "numerous other technical documents and reports on related issues ... that can, and should, be used to support the necessary analyses." Given the established schedule, it is very important to avoid an unnecessary broadening of the scope of the NRC's efforts to respond to the court's remand. (0302-2 [Nicholson, Larry])

**Comment:** Additionally, as the Commission has already determined, the NRC staff should use the analyses in the 2010 Waste Confidence Decision to the extent possible and should primarily focus any additional analyses on the three deficiencies identified in the D.C. Circuit's decision. (0302-3 [Nicholson, Larry])

**Comment:** I urge NRC to incorporate by reference all of the findings and conclusions, as well as the empirical data, contained in the report by Robert Alvarez of Institute for Policy Studies entitled "Spent Nuclear Fuel Pools in the US: Reducing the Deadly Risks of Storage." (0335-1 [Kamps, Kevin])

**Comment:** What's missing from the Federal Register Notice? A description of the proposed action is missing. Also alternatives to the proposed action. (0004-11-1 [Kamps, Kevin])

**Comment:** The NRC has failed to provide information required including a description of the proposed action or any alternative to the proposed action, leaving the public to guess on crucial information. (0004-12-2 [Barczak, Sara])

**Comment:** We believe the NRC is violating its own regulations on implementing NEPA by failing to describe the proposed actions, these impacts to be evaluated in the waste confidence EIS. The NRC should withdraw the scoping notice and reissue with a statement of proposed action. (0004-12-4 [Barczak, Sara])

**Comment:** Overall, it seems that the NRC via -- excuse me, overall it seems that the NRC via a directive from the NRC commissioners is putting the proverbial cart before the horse, asking the public to comment on the scope of a proposal that has not yet been defined. (0004-12-9 [Barczak, Sara])

**Comment:** NIRS is a co-signer of a letter sent out on November 8th, 2012, to the NRC commissioners, registering our view that this scoping session is out of order and does not comply with the requirements of the National Environmental Policy Act or the Commission's regulations implementing NEPA. Nonetheless, thank you for an opportunity to comment. (0004-13-1 [French, Dominique])

**Comment:** NIRS urges the NRC to comply with NEPA better to find the proposed actions and alternatives and then offer us the opportunity to comment on scope again. (0004-13-2 [French, Dominique])

**Comment:** And finally, I again want to echo Kevin's comments about the lack of a clear proposal that we're dealing with and a lack of identified alternatives. My organization would support a no-action alternative that would basically say stop digging the hole that we've dug ourselves into, as Mary said. (0004-18-8 [Fuchs, Katherine])

**Comment:** So at the very least, at the end of this initial public comment period, I think NRC should use the comments you receive to publish a new Federal Register Notice that would spell out clear descriptions of proposed actions, including a no-action alternative that would state no licenses would be issued during this time. (0004-22-2 [Treichel, Judy])

**Comment:** We support the position taken by the NRDC that the notice should be withdrawn. (0004-23-1 [Sheehan, Margaret])

**Comment:** I support her comments that this should be a preliminary scoping, because we do not have the action that is -- we're scoping about at this point, so it's unfair to ask the public to present this way. (0004-25-1 [Shapiro, Susan])

**Comment:** The thing we need to start with is, what is the issue we're here to talk about today? The court said that waste confidence rulemaking is a major federal action, and then they told the Commission to go back to square one and re-look at that major federal action. The Commission's Federal Register Notice identified in the very first paragraph that what we're here today to talk about is updating its waste confidence decision and rule. That is the major federal action. That is what we're looking at today, I believe, in this process. And the Commission's

decision in CLI-12-16, August 7, identified what the alternatives would be for that major federal action. They talked about a new rule, which is what the Commission has said they're doing. It talked about a policy statement. It talked about an EA, Environmental Assessment. It talked about an EIS. Also, it talked about site-specific analyses. Those are the alternatives. We're not here -- I believe we're not here today to talk about a programmatic re-analysis of nuclear power or indeed of other forms of power, as we've heard from some of the comments. (0004-27-2 [Silberg, Jay])

**Comment:** If the range of possible alternatives is not fully being explored and discussed, then we, the American public, are not adequately being drawn into the process. (0005-11-2 [Star, Priscilla])

**Comment:** I think that the issue of what happens with our nuclear waste is an enormous, enormous issue that affects all Americans, their health, and their safety, the environment, the land, the water, future generations. And from what I understand, there is an environmental impact study that is planned. And yet from what I can tell, there's a lack of clarity in it, that we're not really being told what the description of the proposed actions are, what the available possible alternatives for long-term storage of nuclear waste may be. And I feel that we need to know. As the public, we need to know. (0005-12-2 [Laramie, Eve])

**Comment:** If the range of possible alternatives for waste disposal are not being fully explored or they're not being fully discussed with us, then we're not really adequately being drawn into the process. (0005-17-2 [Laramie, Eve])

**Comment:** There has been a lack of adequate information in the Federal Register Notice. These are basic components of any National Environmental Impact Statement (NEPA) environmental impact statement process. I ask that the NRC withdraw the scoping notice and re-publish it in a form that passes legal muster under NEPA. (0043-2 [Bosold, Patrick])

**Comment:** My comment is to ask the agency to withdraw its notice for comment as legally insufficient. It does not fully discuss alternatives to the proposed action specifically "no-action", or the permanent cessation of nuclear reactor licensing and re-licensing. (0045-1 [Lane, Gary])

**Comment:** This proposed rule lacks the examination of alternatives to the preferred proposal, as is generally required in an EIS. (0047-1 [McComb, Melinda])

**Comment:** This EIS needs to be withdrawn and resubmitted, with an adequate examination of alternatives and public notice period. (0047-2 [McComb, Melinda])

**Comment:** The NRC strives for transparency and public response, yet the processes and procedures in place do not provide for a true public dialogue and discussion. I am writing to respectfully ask that you withdraw the [Notice] "Request for Comments on the Notice of Intent to Prepare an Environmental Impact Statement (EIS) and Notice of Public Meetings" that was published in the Federal Register on 10/25/12. The Notice does not provide the public - ordinary citizens of the United States of America - sufficient and understandable information by which we can develop informed responses. Because of this opacity, most Americans are occluded the ability to intelligently respond, and therefore are left out of the process. (0049-1 [Laramie, Eve])

**Comment:** To my understanding, the EIS is in response to the US Court of Appeals decision in State of New York v. NRC, 681 F3d 471. As a concerned New Yorker, it seems that the Notice fails to provide two relevant issues - or informative material - that is REQUIRED by the NRC's 10 CFR § 51.27(a)(2) regulation on the manner in which a "Notice of Intent to Prepare an EIS" is to unfold. Firstly, by way of a "description of the proposed action" and secondly, "to the extent sufficient information is available, possible alternatives." This failure requires address, and I strongly oppose the EIS moving forward. (0049-2 [Laramée, Eve])

**Comment:** As a citizen who deeply cares about the future of our country, its environment and its inhabitants, it seems remiss, if not alarming that the NRC is not identifying the "proposed action" in the Notice. How can the public make comments on the range of possible "alternatives" if this is unclear? (0049-3 [Laramée, Eve])

**Comment:** If the range of possible alternatives is NOT fully being explored and discussed then we - the American people - are not adequately being drawn into the process. (0049-5 [Laramée, Eve])

**Comment:** The public comment period is intended to promote democracy. In publishing its Notice of the beginning of its reexamination process, the NRC does just the opposite. The Notice is vague, does not include possible alternatives to the NRC's proposed action as required by an EIS. I urge NRC to withdraw its Notice. (0050-1 [Biddle, Lynn])

**Comment:** STOP CURRENT PROCESS AND TRY AGAIN--AND MEET LEGAL REQUIREMENTS NEXT TIME! (0051-1 [Phillips, Stuart])

**Comment:** Please do your due diligence and provide us with your scope range so that we can comment about the public health concerns we have. (0058-10 [Dubois, Gwen L])

**Comment:** A more serious problem is that contrary to NRC regulation 10 CFR 51.47 (a)(2), we have not been provided a description of the proposed action and a description of any alternatives to the proposed action of which the NRC is aware so we are unable to comment as to whether your proposed "scope" is adequate or not. As you can see from my comments above, environmental impacts of natural disasters, pool water loss, raised water temperature elevations, pool density and many others have not been offered as the type of scope which you will be looking at. (0058-9 [Dubois, Gwen L])

**Comment:** There was a lack of adequate information in the Federal Register Notice, which the NRC should have provided in the first instance -- such as what the proposed action is, and what are reasonable alternatives to it, basic components of any National Environmental Impact Statement (NEPA) environmental impact statement process. (0060-2 [Winholtz, Betty])

**Comment:** Please withdraw the scoping notice and re-publish it in a form that passes legal muster under NEPA. (0060-3 [Winholtz, Betty])

**Comment:** Regarding the scoping process for the Waste Confidence Environmental Impact Statement (Docket ID NRC-2012-0246), please withdraw the relevant Federal Register Notice

and correct its legal deficiencies, suspending this proceeding until you have done so. (0083-1 [Naples, Jean Marie] [Poulson, Judi] [Salazar, Joe])

**Comment:** Specifically, the lack of a proposed action...violate the National Environmental Policy Act, as well as NRC's own regulations (10CFR51.27(a)(2)). (0083-3 [Naples, Jean Marie] [Poulson, Judi] [Salazar, Joe])

**Comment:** the lack of alternatives to the proposed action, violate the National Environmental Policy Act, as well as NRC's own regulations (10CFR51.27(a)(2)). (0083-4 [Naples, Jean Marie] [Poulson, Judi] [Salazar, Joe])

**Comment:** On behalf of twenty five organizations and individuals who seek a meaningful opportunity to participate in the environmental review process the NRC has initiated in response to the U.S. Court of Appeals' decision in State of New York v. NRC, 681 F.3d 471 (D.C. Cir. 2012) (footnote 1), we write to request you withdraw the "Request for comments on the notice of intent to prepare and (sic) environmental impact statement and notice of public meetings" ("Notice"), published in the Federal Register on October 25, 2012 (77 Fed. Reg. 65,137). The Notice should be withdrawn because it fails to satisfy two of the most basic requirements of U.S. Nuclear Regulatory Commission ("NRC") regulations for notices of intent to publish an environmental impact statement ("EIS"). As a result, the notice fails to give the public sufficient information on which to develop comments on the appropriate scope of the EIS proposed by the NRC. (0085-1 [Curran, Diane] [Fettus, Geoffrey] [Goldstein, Mindy])

**Comment:** In the Notice, the NRC gives no hint of what is the agency action that creates the risk of spent fuel storage environmental impacts, and thus requires commenters to guess at the action. Moreover, what little factual information is presented in the Notice is likely to mislead commenters into viewing the proposed action and its alternatives as some combination of methods for storing spent fuel. Such a truncated scope of alternatives would be far too narrow to satisfy NEPA because it would not address the original agency action that causes the production of spent reactor fuel and its impacts: the licensing of nuclear reactors. Therefore the scoping process would not lead to any analysis of the most obvious alternative for the avoidance or mitigation of spent fuel storage impacts: the cessation of reactor licensing. Without a clear description of the proposed action and its most obvious alternative, the Notice is fatally deficient. The Notice therefore should be withdrawn and republished with a clear description of the NRC action that leads to spent fuel storage impacts: licensing of nuclear reactors. It should also identify the no-action alternative: the cessation of licensing and relicensing, which would halt further production of spent fuel. (0085-2 [Curran, Diane] [Fettus, Geoffrey] [Goldstein, Mindy])

**Comment:** If the NRC does not withdraw the scoping notice, we believe that to be consistent with the requirements of Section 51.47(a)(2), the NRC must re-publish a second scoping notice after this commenting period expires, identifying the proposed action and alternatives of which the NRC is aware, and seeking further comment. (0085-3 [Curran, Diane] [Fettus, Geoffrey] [Goldstein, Mindy])

**Comment:** Pursuant to the court's order in New York v. NRC, 681 F.3d 471 (D.C. Cir. 2012), the 2010 rule did not satisfy NEPA obligations. In particular, the conclusion that permanent

disposal will be available "when necessary" was rejected because the environmental effects of failing to secure permanent disposal were not explored. (0107-1 [Fredrickson, Amy])

**Comment:** So, on the process comments, again, request for NRC to simply withdraw the Federal Register Notice due to the major legal errors. And to collect those and then to reissue the Federal Register Notice. (0118-2-1 [Kamps, Kevin])

**Comment:** Which would, which should restart the clock on the public comments period, for one thing, the proposed action and the preferred alternatives need to be identified. (0118-2-2 [Kamps, Kevin])

**Comment:** I think it's important to point out that the Notice of Intent to Prepare the Waste Confidence Environmental Impact Statement is fatally flawed. The Federal Register Notice should be withdrawn and reissued, because it fails in the most basic requirements of the Federal Regulations on a Notice of Intent to Prepare an Environmental Impact Statement. The Notice gives no hint of what the Agency action required. It creates a risk of spent fuel storage environmental impacts and thus requires us to guess at the action, moreover, the little factual information which is presented in the Notice, actually misleads commenters into viewing the action and the alternatives, as some combination of methods for storing waste fuel. This truncates the scope of the alternatives and it's too narrow to satisfy the National Environmental Policy Act, because it does not address the original Agency action that causes the production of irradiated fuel in the first place. That is the licensing of nuclear power plants. Therefore, the scoping process will not lead to an analysis of the most obvious alternative for the avoidance or mitigation of spent fuel storage impacts which would be the cessation of reactor licensing. So, that is the length and breadth of our comment on this particular issue. The Notice is fatally deficient and we will be submitting written comments to this effect before the end of the comment period. (0118-5-1 [Zeller, Lou])

**Comment:** Every community housing such waste should have the right to a full study of ALL the alternatives to continued production and storage of high level nuclear waste (0147-3 [Shaw, Sally])

**Comment:** The Environmental Impact Statement (EIS) on its Nuclear Waste Confidence Decision and Rule is legally deficient. It does not clearly describe the proposed federal action, nor the preferred alternative(s). Due to those fatal legal flaws, the Federal Register Notice must be withdrawn, corrected, and re-issued. In the meantime, this proceeding must be suspended by NRC, and the allotted time for public comments must be re-started from the beginning. (0216-3 [Cobb, Sandra])

**Comment:** Accordingly, for the purposes of the present EIS, the proposed action is a rulemaking to incorporate generic findings related to the onsite storage of spent nuclear fuel after the licensed life of the reactor. The scope of the EIS should be limited to that proposed action. (0263-4 [Ginsberg, Ellen])

**Comment:** NRC's current activity under the joint jurisdiction of the Court of Appeals and the National Environmental Policy Act has legal flaws. A letter from plaintiffs in the court case and others sent to the Commissioners on November 8, 2012 details these flaws. The primary point



is that NRC fails to define the proposed action to be evaluated by the EIS, and therefore it is not possible to define scope. We additionally support the call for NRC to start over and do this properly. (0266-5 [Anonymous] [Fisher, Allison] [Gale, Maradel] [Lish, Christopher] [Mariotte, Michael] [Sheridan, Paul])

**Comment:** It is impossible to legitimately begin a scoping process absent the proposed action or draft scope. The public should have been provided with the proposed action or the draft scope of the EIS as required under NEPA. The Federal Register notice in fact promised a proposed scope of the EIS would be provided at the Dec. 5th webinar, but it was not. (FR Oct.25,2012, p. 65139, top of column 2) The Agency only talked about a scoping process.

Along with many other environmental and public interest organizations throughout the United States, we recommend that the proposed action and draft scope be provided in a new federal notice and that an additional comment period be provided, since the earlier notice does not meet NEPA requirements. (0269-9 [Warren, Barbara])

**Comment:** We respectfully request NRC withdraw the document and reissue it with the appropriately defined major federal action and presentation of alternatives. (0271-1 [Fettus, Geoffrey])

**Comment:** It must also weigh the costs and benefits of a reasonable array of alternatives for avoiding or mitigating the consequences of the proposed action. (0271-21 [Fettus, Geoffrey])

**Comment:** In order to comply with these controlling precedents we ask NRC to withdraw the existing Waste Confidence Scoping Notice and publish a Scoping Notice with a clear description of the NRC action that leads to SNF storage and disposal impacts: licensing nuclear reactors. (0271-3 [Fettus, Geoffrey])

**Comment:** In any event, NRDC fails to see the point of NRC's assertion that somehow the fact that the Commissioners decided to initiate an EIS process after Court remand alters fundamental NEPA obligations. The agency must comply with the procedural requirements of NEPA and it has failed to do so in this instance. Simply providing notice of an update of the Waste Confidence Determination fails to provide sufficient information for commenters to help define the scope of the analysis or suggest alternatives. Moreover, the agency's interpretation of its NEPA responsibilities is so narrow that it transparently assumes further production of nuclear wastes without a permanent waste repository. Such a position is a transparent attempt to turn the EIS process into a quick and nearly meaningless exercise and will surely fail under the law. (0271-4 [Fettus, Geoffrey])

**Comment:** Rather than issue such a Waste Confidence Determination, NRC's October 25 Waste Confidence Scoping Notice has essentially asserted that significance must be evaluated in terms of environmental impacts alone rather than in relation to reasonable alternatives that may reduce those impacts. NEPA - and NRC's regulations - rightly focus on reasonable alternatives, and thus when presenting an initial scoping document, reasonable alternatives must be appropriately considered even if they have similar impacts. See, e.g., Alaska Wilderness Recreation and Tourism Ass'n v. Morrison, 67 F.3d 723, 730 (9th Cir. 1995)

(because alternatives are the "heart of the environmental impact statement," when new reasonable alternatives arise they must be independently considered in the NEPA process); see also 10 C.F.R. § 51.103(a)(iv) (explaining that an NRC Record of Decision must "[s]tate whether the Commission has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the alternative selected, and if not, to explain why those measures were not adopted"). The Waste Confidence Scoping Notice has failed in this regard and must be withdrawn and then rewritten to conform to NEPA requirements. (0271-7 [Fettus, Geoffrey])

**Comment:** The Waste Confidence Scoping Notice tepidly stepped into presenting its concept of impacts analysis when it wrote "[p]ossible scenarios to be analyzed in the EIS include temporary SNF storage after cessation of reactor operation until a repository is made available in either the middle of the century or at the end of the century, and storage of SNF if no repository is made available by the end of the century." 77 Fed. Reg. 65138. This is an inadequate statement and fails to provide meaningful guidance to members of the public regarding the scope of what is at issue. (0271-8 [Fettus, Geoffrey])

**Comment:** Because the Commission neglected to publish a clear description of the proposed action, the NRC must prepare a second scoping notice, identifying the proposed action and alternatives, and seek further public comment. (0273-3 [Zeller, Lou])

**Comment:** Absent from the scoping description is any indication that the NRC will consider alternatives to mitigate the adverse environmental impacts associated with indefinite, or even long-term, storage of spent fuel at the reactor sites. (0275-6 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The October 26, 2012 Federal Register Notice announcing the public comment opportunity on scoping in the lead up to the court-ordered EIS on Nuclear Waste Confidence Decision and Rule is legally deficient. It does not clearly describe the proposed federal actions, nor the preferred alternatives. Due to fatal flaws, the Federal Register Notice must be withdrawn, corrected and re-issued. The current proceedings must be suspended, and the time allocated for public comments must be re-commenced after a proper, legally adequate Federal Register Notice is published. (0296-2 [Shapiro, Susan])

**Comment:** The Notice of Intent to prepare an EIS does not provide sufficient detail for the public to clearly understand what the proposed action is and what reasonable alternatives to the proposed action the NRC will consider in the draft EIS. Therefore, it is difficult to provide comments on the scope of the EIS when it has not been clearly defined. (0298-1 [Johnson, Abigail])

**Comment:** We assume that the proposed action is to reissue a "Waste Confidence Rule" which states that the Commission has concluded that waste can be stored safely for some indeterminate time frame. (0298-5 [Johnson, Abigail])

**Comment:** I am also requesting that the U.S.N.R.C. withdraw its notice for comment on the Waste Confidence Rule and republish it once it complies with requirements under the National Environmental Policy Act and addresses the three deficiencies the D.C. Circuit Court identified in its June 8, 2012 decision and rule. (0299-3 [Calter, Thomas J.]

**Comment:** The scoping process for the Waste Confidence Environmental Impact Statement (Docket ID NRC-201 2-0246) is premature and, to my understanding, not following clearly defined NEPA procedures. Specifically, the lack of a proposed action, and the lack of alternatives to the proposed action, violate the National Environmental Policy Act, as well as NRC's own regulations (1 OCFR51.27(a)(2)). They also make it impossible to comment specifically on an unknown proposal. The safety and security risks of storing irradiated nuclear fuel at reactor sites in pools and dry casks are too great for this scoping process to go forward, given NRC's legal errors. Please withdraw the relevant Federal Register Notice and correct its legal deficiencies, suspending the comment gathering process until you have done so. (0307-1 [Shaw, Sally])

**Comment:** We have significant misgivings about the scoping process for the Waste Confidence Environmental Impact Statement (Docket ID NRC-2012-0246). We urge you to withdraw the relevant Federal Register Notice so that its legal deficiencies can be corrected. This proceeding should be suspended until you have done so. Specifically, the lack of a proposed action, and the lack of alternatives to the proposed action, violate the National Environmental Policy Act, as well as NRC's own regulations (10CFR51.27(a)(2)). The safety and security risks of storing irradiated nuclear fuel at reactor sites in pools and dry casks are too great for this scoping process to go forward, given NRC's legal errors. (0310-2 [MacDonald, Joan])

**Comment:** There has been a lack of adequate information in the Federal Register Notice, which the NRC should have provided in the first instance --such as what the proposed action is, and what are reasonable alternatives to it, basic components of any National Environmental Impact Statement (NEPA) process. (0311-2 [York, Jennifer])

**Comment:** I ask the NRC Commissioners and Staff liaison to withdraw the scoping notice and re-publish it in form that passes legal muster under NEPA. (0311-3 [York, Jennifer])

**Comment:** I am writing to request that the proposed environmental impact statement proceeding be suspended and corrected due to several legal errors which violate NEPA noting requirements. (0315-5 [Pirch, Charlotte])

**Comment:** There is a lack of adequate information in the Federal Register Notice, such as what the proposed action is and reasonable alternatives to it, which are basic components of any National Environmental Impact Statement (NEPA) environmental impact statement process. Please withdraw the scoping notice and re-publish it in form that passes under NEPA legal guidelines. (0318-3 [Lambert, Gwen])

**Comment:** Regarding the scoping process for the Waste Confidence Environmental Impact Statement (Docket ID NRC-2012-0246), please withdraw the relevant Federal Register Notice and correct its legal deficiencies, suspending this proceeding until you have done. (0319-1 [Albertini, John] [Alger, Dwight] [Anderson, Peter] [Andreas, Sonja] [Angelus, Joshua] [Atkinson, Kim] [Bailey, Lee] [Bailin, Jonathan] [Baron, James] [Beavis, Margaret] [Benmosche, Shoshanna] [Bergh, Darcy] [Bernard, Janice] [Bernstein, Laura] [Beverly, Jessica E.] [Biddle, Lynn] [Blue, Donna] [Blumenthal, Bob] [Brown, Roger] [Butler, Elizabeth] [Byrne, James] [Carberry, Mike] [Carey, Deborah] [Christman, Dave] [Cobb, Sandra M.] [Combes, Steven B.] [Copi, Margaret] [Courtright, Caroline] [Cunningham, Jim] [Curtis, Marni] [Davis, Diane G.] [Demorest, Carolyn] [DeStefano, Linda] [Dilling, Brock] [DiMatteo,

Richard] [Earle, Ben] [Esteve, Gregory] [Faris, Janice and Larry] [Fazzari, Angie] [Fiske, Nancy] [Forbes, June] [Frederick, Vicki] [Gale, Maradel] [Gasperoni, John] [George, Edward] [Goldman, Steve] [Graves, Caryn] [Hackner, Paul] [Hall, Dennis] [Halligan, Mary A.] [Hamilton, Helen] [Hanley-Hyde, Joan] [Hanna, Helen N.] [Hasselbrink, Bob] [Hatfield, Barry] [Hynes, Patricia] [Helmstetter, Chris] [Hodgkins, Yvonne] [Hofford, William] [Holt, Robert] [Holzberg, Steven] [Hudson, Marcella] [Hurzeler, Philip] [Irwin, John] [Janusko, Robert] [Jeffrey, Monroe Edwin] [Johaningsmeir, Mark A.] [Kelly, Karen A.] [Khalsa, Mha Atma S] [Koessel, Karl] [Koivisto, Ellen] [Kovitz, Johanna] [Laambeth, Larry] [Lambert, Gwen] [Lee, Catherine] [Lesser, Gerson T.] [Lieberman, Sharon and Jim] [Lippman, Roger] [Lish, Christopher] [Mammarella, James] [Matsuda, Thomas] [McCormick, Bob] [McCue, JG] [Meacham, Thomas] [Monaster, Susan] [Mouradian, Judy] [Naples, Jean Marie] [Nelson, Scott D.] [Nichols, John] [Olsen, Corey E.] [Ostrer, Allison] [Pagoulatos, Alexis] [Pate, Ann] [Pelham, Christopher] [Pelizzari, Roger] [Perkins, Bob] [Philbrook, Pati] [Phillips, Stuart] [Piarulli, Josephine] [Pick, Anna] [Poulson, Judi] [Preston, Lynne] [Richkus, John] [Roane, Christine] [Rogers, Karen] [Roland, Jelica] [Roth, Erik] [Salazar, Joe] [Schor, Mary] [Schuchart, Lawrence] [Seeley, Rick] [Sembrowich, Nita] [Shaw, Sally] [Shields, Lane] [Shomer, Forest] [Silbey, Marilena] [Silver, Ron] [Small, Sally] [ssf, Edmund] [Suter, Lindsay] [Swyers, Matthew] [Tache, Jan] [Talbot, James] [Tokuda, Tlaloc] [Van Stone, Carolina] [Voeller, Estelle] [Vollmer, Terry] [Wachob, William] [Wallace, Don] [Warren, Richard C.] [Wilder, Laura] [Wildwind, Landry] [Winholtz, Betty] [Wolf, Rachel] [Zmolek, Mike] [Zucker, Lee])

**Comment:** Specifically, the lack of a proposed action, and the lack of alternatives to the proposed action, violate the National Environmental Policy Act, as well as NRC's own regulations (1 OCFR51.27(a)(2)). The safety and security risks of storing irradiated nuclear fuel at reactor sites in pools and dry, casks are too great for this scoping process to go forward, given NRC's legal errors. (0319-2 [Albertini, John] [Alger, Dwight] [Anderson, Peter] [Andreas, Sonja] [Angelus, Joshua] [Atkinson, Kim] [Bailey, Lee] [Bailin, Jonathan] [Baron, James] [Beavis, Margaret] [Benmosche, Shoshanna] [Bergh, Darcy] [Bernard, Janice] [Bernstein, Laura] [Beverly, Jessica E.] [Biddle, Lynn] [Blue, Donna] [Blumenthal, Bob] [Brown, Roger] [Butler, Elizabeth] [Byrne, James] [Carberry, Mike] [Carey, Deborah] [Christman, Dave] [Cobb, Sandra M.] [Combes, Steven B.] [Copi, Margaret] [Courtright, Caroline] [Cunningham, Jim] [Curtis, Marni] [Davis, Diane G.] [Demorest, Carolyn] [DeStefano, Linda] [Dilling, Brock] [DiMatteo, Richard] [Earle, Ben] [Esteve, Gregory] [Faris, Janice and Larry] [Fazzari, Angie] [Fiske, Nancy] [Forbes, June] [Frederick, Vicki] [Gale, Maradel] [Gasperoni, John] [George, Edward] [Goldman, Steve] [Graves, Caryn] [Hackner, Paul] [Hall, Dennis] [Halligan, Mary A.] [Hamilton, Helen] [Hanley-Hyde, Joan] [Hanna, Helen N.] [Hasselbrink, Bob] [Hatfield, Barry] [Hynes, Patricia] [Helmstetter, Chris] [Hodgkins, Yvonne] [Hofford, William] [Holt, Robert] [Holzberg, Steven] [Hudson, Marcella] [Hurzeler, Philip] [Irwin, John] [Janusko, Robert] [Jeffrey, Monroe Edwin] [Johaningsmeir, Mark A.] [Kelly, Karen A.] [Khalsa, Mha Atma S] [Koessel, Karl] [Koivisto, Ellen] [Kovitz, Johanna] [Laambeth, Larry] [Lambert, Gwen] [Lee, Catherine] [Lesser, Gerson T.] [Lieberman, Sharon and Jim] [Lippman, Roger] [Lish, Christopher] [Mammarella, James] [Matsuda, Thomas] [McCormick, Bob] [McCue, JG] [Meacham, Thomas] [Monaster, Susan] [Mouradian, Judy] [Naples, Jean Marie] [Nelson, Scott D.] [Nichols, John] [Olsen, Corey E.] [Ostrer, Allison] [Pagoulatos, Alexis] [Pate, Ann] [Pelham, Christopher] [Pelizzari, Roger] [Perkins, Bob] [Philbrook, Pati] [Phillips, Stuart] [Piarulli, Josephine] [Pick, Anna] [Poulson, Judi] [Preston, Lynne] [Richkus, John] [Roane, Christine] [Rogers, Karen] [Roland, Jelica] [Roth, Erik] [Salazar, Joe] [Schor, Mary] [Schuchart, Lawrence] [Seeley, Rick] [Sembrowich, Nita] [Shaw, Sally] [Shields, Lane] [Shomer, Forest] [Silbey, Marilena] [Silver, Ron] [Small, Sally] [ssf, Edmund] [Suter, Lindsay] [Swyers, Matthew] [Tache, Jan] [Talbot, James] [Tokuda, Tlaloc] [Van Stone, Carolina] [Voeller, Estelle] [Vollmer, Terry] [Wachob, William] [Wallace, Don] [Warren, Richard C.] [Wilder, Laura] [Wildwind, Landry] [Winholtz, Betty] [Wolf, Rachel] [Zmolek, Mike] [Zucker, Lee])

**Comment:** According to the FRN, the scoping process for the draft EIS will be used to "define the proposed action that is to be the subject of the EIS." This seems backward. It is the responsibility of the lead federal agency undertaking the development of the EIS to determine the proposed action. It should not be left up to the loudest voices to determine what the proposed action should be. There are those who will wish to define the proposed action in the narrowest possible terms, while others will seek the broadest interpretation. (0321-10 [Mahowald, Philip R.]

**Comment:** In addition, the purpose and need of the EIS should be defined by the NRC, not stakeholders. Questions such as why the action is needed or how the WCD EIS will be applied in licensing actions are best determined by the lead federal agency. (0321-12 [Mahowald, Philip R.]

**Comment:** NRC's Oct. 26, 2012 Federal Register Notice announcing the public comment opportunity on its scoping proceeding in the lead up to a court-ordered Environmental Impact Statement (EIS) on its Nuclear Waste Confidence Decision and Rule is legally deficient. It does not clearly describe the proposed federal action, nor the preferred alternative(s). Due to those fatal legal flaws, the Federal Register Notice must be withdrawn, corrected, and re-issued (0326-1 [Baier, Mary Ann] [Burton, Vic] [Geise, Mark M.] [Kamps, Kevin] [Kennedy, David] [Knipp, Donna] [Kruszynski, Yasiu] [Matsuda, Thomas] [Wakefield, Marie])

**Comment:** Tribal consultation: The Federal Register Notice does not mention how NRC plans to consult with any impacted federally recognized tribes. Federally recognized Indian tribes have been in expectation that they will be consulted on a government-to-government basis. Tribes are not public and should not be treated as such. Executive Order 13175 Constitution and Coordination with the Indian Tribal Government states, "United States has a unique legal relationship with Indian Tribal Governments. The United States recognize the right of the Indian Tribes to self-government and tribal sovereignty. Each agency shall have the accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies which affect tribes." Simply put, the NRC has an obligation to consult with impacted federally recognized Indian tribes on a government-to-government basis before decisions are made. (0004-4-6 [Johnson, Ron])

**Comment:** We urge the NRC to make sure that the EIS gives the broad and inclusive Native American voice an opportunity to be heard through the proper meaningful NEPA and Section 106 process. (0284-12 [Collins, Fred])

**Comment:** It is the responsibility of the federal agency to make a reasonable and good faith effort to identify Indian tribes and Native Hawaiian organizations that shall be consulted in the Section 106 process.

Consultation should be conducted in a manner recognizing the unique government-to-government relationship that exists between the federal government and tribes, should be respectful of tribal sovereignty, and should be sensitive to the concerns and needs of the Indian tribe or Native Hawaiian organization...

NCTC believes that NRC actions are also required to take into account the effects of licensing a Nuclear Power project on or near any pre-historic or historic properties under Section 106. (0284-8 [Collins, Fred])

**Comment:** The FRN does not mention how the NRC plans to consult with any impacted federally recognized tribes. Federally recognized Indian tribes have an expectation that they will be consulted on a government-to-government basis. Tribes are not the public and should not be treated as such. Please do not publish a notice in the Federal Register and expect tribes to respond.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, states: the United States has a unique legal relationship with Indian Tribal governments; the United States recognizes the right of Indian Tribes to self-government and tribal sovereignty; each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies which affect the Tribe.

Simply put, the NRC has an obligation to consult with federally recognized Indian tribes on a government-to-government basis before decisions are made. The Waste Confidence EIS does have tribal implications - de facto approval of indefinite on-site spent nuclear fuel, next to a federally recognized Indian tribe.

Executive Order 13175, signed by Presidents Clinton, Bush, and Obama, applies to all federal agencies, including the NRC. It is our view that the NRC must consult with PIIC regarding the waste confidence EIS (which tacitly approves indefinite on-site spent nuclear fuel storage). We expect a meeting with the Tribal Council and not just an invitation to attend a public meeting. (0321-18 [Mahowald, Philip R.]

**Comment:** While the NRC should address the court's issues, the EIS should go no further than that what is required by law and the court's decision. In other words, the scope of the EIS should be narrow. (0004-8-2 [Burton, Bruce])

**Comment:** The most glaring deficiency in this request for comments is the emphasis on the three specific deficiencies which the Court has pointed out in the NRC Waste Confidence analysis. I request that the NRC does not limit this scoping to "3 specific deficiencies." Any and all deficiencies raised by comments herein or circumstances like Fukushima or Sandy must be addressed before any new licensing is allowed for the sake of safety of the public. The paragraph starting "waste confidence" on page 65138 give a basis or extending consideration of comments to new issues and ties comments to an adequate decision: "no final license will be issued until a new WC Decision and Rule are in effect." (CLI-12-016)

The Court finding of three specific deficiencies show that the NRC is not perfect or omniscient. The NRC must be willing to look at all deficiencies to meet the obligations from its own Charter which states, "health and safety of the public" nine times. (0009-9 [Lewis, Marvin])

**Comment:** The five findings in the remanded Waste Confidence rule must all be addressed in the proposed EIS. (0244-1 [Lacey, L. Darrell])

**Comment:** We believe that the scope of this NRC effort should be bound, or limited, to the three specific deficiencies identified by the Court in the NRC's NEPA analysis supporting the Commission's 2010 update. (0259-2 [Callahan, Mike])

**Comment:** Therefore, scenarios should be analyzed in the EIS only to the extent that they inform the assessment of the consequences of extended onsite storage or the reasonable alternatives to onsite storage. Further, the scenarios should be framed in terms of other relevant analyses, such as the 2010 WCD and the DOE "no action" alternative. (0263-9 [Ginsberg, Ellen])

**Comment:** Second, the NRC should focus additional environmental evaluations on the specific deficiencies identified by the federal court in its remand of the WCD and rule. Specifically, those deficiencies were:

- Lack of examination of the environmental effects of failing to establish a repository for used nuclear fuel.
- Lack of examination of the risks of spent fuel pool leaks in a forward-looking fashion.
- Lack of examination of the potential consequences of spent fuel pool fires. (0264-2 [Jamil, Dhiaa])

**Comment:** The analysis the NRC conducted to support its 2010 Waste Confidence Decision and Rule is appropriate, with the exception of the three specific issues mentioned by the court. While NRC should address the court's issues, the EIS should go no further than what is required by law and the court's decision. The scope of the EIS should be narrow. (0267-5 [Hill, Edwin])

**Comment:** The EIS scope should be limited to the three specific deficiencies identified by the Court in the NRC's NEPA analysis supporting the NRC's 2010 update. That will better enable the NRC to focus its efforts and resources to ensure proper evaluation of the identified areas. The NRC proceeding is not the proper vehicle for a broader examination of its spent fuel storage, transportation, and disposition regulatory program (0268-8 [Wright, David A.])

**Comment:** The NRC Staff has an obligation to identify and eliminate from detailed study issues which are peripheral or are not significant or which have been covered by prior environmental review. Discussion of these issues in the statement will be limited to a brief presentation of why they are peripheral or will not have a significant effect on the quality of the human environment or a reference to their coverage elsewhere." In the same manner that a Supplemental EIS can make reference to a more detailed analysis elsewhere, the WCD EIS should do the same.

The NRC Staff should keep in mind that the EIS is not a technical treatise on a variety of subjects; rather, it is an important document to assist NRC decisionmakers in making informed decisions. Matters that make a difference in the judgment warrant considerable attention; matters that do not influence the outcome should be summarized. (0283-3 [Zalcman, Barry])

**Comment:** The Scope Should Not Be Limited to Those Factors Cited by the D.C.Circuit Court in its June 8, 2012, Decision. The Commission should not limit the EIS and its analysis to the three factors identified by the D.C. District Court in its June 8, 2012, Decision in *New York v. NRC*, 681 F.3d 471 (DC Cir. 2012). The overall scope of the EIS should include all factors

associated with the continued storage of spent fuel outside of nuclear power plants. This method is reasonable and would lead to a more thorough and robust examination of factors and how the ISFSI's impact the environment in which they are located. (0291-4 [Harlan, Thomas])

**Comment:** Focusing only on the factors cited by the D.C. District Court would lead to a truncated EIS that would not meet the requirements for the same under NEP A. An inclusive EIS will not cause or lead to any delay in meeting the timeline proposed by the commission. (0291-5 [Harlan, Thomas])

**Comment:** The consent base, good faith interaction with the public, I just will speak from personal experience here. The NRC has had previous proceedings that many of us have taken part in, in good faith, very time-consuming proceedings. One of them -- and I know that the NRC in this latest go-round with the nuclear waste confidence proceeding here has said that those comments will be incorporated, which is good, but this was the effort in 2010 and I guess 2011 to -- 2010 more like -- to consider the 200 to 300 years of onsite storage in its nuclear waste confidence decision. So please do. I very much ask that you include those comments from the previous proceeding into this one. (0005-9-1 [Kamps, Kevin])

**Comment:** One of the objectives of the scoping process is to identify and eliminate from detailed study those issues that are peripheral or that are not significant. The Commission should not import into this process all of the material from NRC's "Draft Report for Comment -- Background and Preliminary Assumptions for an Environmental Impact Statement -- Long-Term Waste Confidence Update" (hereinafter "Draft Report"). We found many flaws in the Draft Report and recommended that work on it pause. The scope of the effort now at hand should be limited to addressing the deficiencies that were found by the Court. (0259-7 [Callahan, Mike])

**Comment:** In 2011 the NRC initiated the Long-Term Waste Confidence Update EIS (ML11340A141). The NRC held some public meetings and webinars on the process. Comments on the NRC report were due on February 17, 2012; the NRC should evaluate the public comments and comment letters submitted as part of that EIS process, which is now on hold pending the completion of the WC EIS. (0321-20 [Mahowald, Philip R.])

**Comment:** It's not clear which NRC guidance documents will be used to guide the development of the EIS. Knowing whether NRC will use NUREG-1748 or some other guidance document will help us and others develop useful scoping comments. (0004-4-3 [Johnson, Ron])

**Comment:** While the Regulatory Guide (RG) Series is the principal tool for the public, the NRC Staff has Standard Review Plans (SRPs) and a myriad of other tools (such as Interim Staff Guidance, Review Standards, Branch Technical Positions, etc.) to ensure that its actions cannot possibly be challenged as arbitrary and capricious. By revealing its review standard, the public will have the opportunity to understand the Staff's rationale supporting its evaluations and its basis for making recommendations. This instant WCD review may not require an Environmental SRP (ESRP), such as a NUREG-1555, but it should, nevertheless, have a review plan that would guide the Staff when determining that it has a sufficient basis to draw a conclusion. In a similar vein, if the Staff elects to use the regulatory framework to communicate the severity of potential impacts initially developed for License Renewal (see, Appendix B to Part 51, Footnote



3), then it should reveal how the conclusions are translated into the impact category levels (i.e., SMALL, MODERATE, and LARGE). All too often, as a Staff representative, I had to explain to other members of the public that the impact category levels were not mere adjectives, they are regulatory conclusions based on fact. I recommend that the NRC publish a document revealing its review standard in advance of publishing the Draft EIS. (0283-1 [Zalcman, Barry])

**Comment:** In this case, there appears to be no specific guidance for developing the WC EIS and, to some extent, the comments submitted in response to the FRN will be used to guide the NRC in developing the WC EIS. In our view it doesn't appear that NUREG-1748 really fits in this case. As discussed further below, we recommend that the NRC also evaluate NUREG-1437. (0321-19 [Mahowald, Philip R.]

**Comment:** Please thoroughly study the environmental impacts of temporary spent fuel storage. Permanent storage is not on the horizon, and responsible "temporary storage" should be part of any nuclear plant's operation, planning etc. (0032-1 [Diederichs, Barbara])

**Comment:** Since no safe national nuclear waste storage location is available, the environmental impacts of temporary storage of spent fuel at nuclear reactor sites should be very carefully studied and controlled. (0035-1 [Bradbeer, Wilma])

**Comment:** This should include a detailed examination of the environmental effects of all possible and foreseeable future events. (0037-4 [Fleetham, Chelsea])

**Comment:** Therefore, a thorough and comprehensive EIS is imperative to protect human health and environment. (0038-1 [Goze, Yunjoo])

**Comment:** Regarding future licensing of commercial nuclear generating facilities, I request that you require an Environmental Impact Statement to determine the impact of storing radioactive waste. As a retired Defense Department employee I had years of experience in procuring and certifying the Navy's equipment for nuclear waste movement and storage. They did an excellent job; but I am concerned for commercial locations now that the Yucca Mountain project has been stopped. I live within the evacuation zone of Three Mile Island, and am aware of the health and safety effects on communities and the environment of nuclear waste storage. I have been told that your current requirement - the so-called "waste confidence rule" is weak and needs to be strengthened. (0123-1 [Schmotzer, Michael])

**Comment:** I strongly urge you to consider the environmental impacts of temporary storage of spent fuel after a reactor ceases operation. This is of the highest priority. (0126-1 [Buckner, Marian])

**Comment:** Please require extensive environmental impact investigation for any storage of Spent Fuel. The earth cannot afford an accident. (0142-1 [Fowler, Joanna])

**Comment:** I strongly encourage you to have an environment impact study done for the spent fuel from a reaction. It is the responsible action needed to safeguard current citizens in the area and future generations on our planet earth. (0164-1 [Wentland, Mary])

**Comment:** I hope the NRC would conduct an exhaustive EIS that would explore the many aspects of such an environmentally harmful industry. (0227-1 [Murtha, William])

**Comment:** Please have the NRC do a broad, thorough study of the environmental impact of Storing nuclear waste on-site at U.S. nuclear plants, including Indian Point. (0232-1 [Weber, Nicole])

**Comment:** The Waste Confidence Decisions and Rules of 1984, 1990, 2010, 2012, are examples of avoiding an in-depth dialogue of what the NRC plans to do about irradiated spent nuclear fuel waste. These and numerous other decisions made by the NRC are in conflict with and fail to fulfill the intent and provisions of the National Environmental Policy Act (NEPA). (0237-1 [Thomas, Ruth])

**Comment:** After more than three decades of failing to address the very real and widespread concern with the continued production of nuclear wastes without a permanent, safe, and secure nuclear waste repository NRC now has the opportunity, albeit mandated by a Federal Court, to apply its considerable expertise to address these concerns. It can now fully and completely explore the potential environmental consequences of continuing with the status quo, and can now seriously and thoroughly explore alternatives to the status quo, including not only cessation of further production of nuclear wastes but better ways to store such nuclear wastes than leaving them in spent fuel pools at reactor sites for an indefinite period after reactor shutdown. The proposed scope of the EIS process fails to provide for a meaningful and thorough examination of these concerns and purports to rely on legal arguments expressly rejected by the D.C. Circuit. It is not too late to correct these errors and assure a vigorous, fair, and comprehensive exploration of the very real environmental and Native American Cultural impacts of nuclear waste storage at reactor sites and viable alternatives to mitigate those impacts must include the Native American Communities across the United States. (0284-9 [Collins, Fred])

**Comment:** The proposed EIS should use a range of storage scenarios as vehicles to help assess the comparative radiological risk posed by alternative options for storing SNF or HLW. (0286-103 [Curran, Diane])

**Comment:** Consider the full environmental impact of creating and storing highly radioactive waste in any licensing action. This should include a no action scenario in every EIS. (0152-2 [March, Leslie])

**Comment:** Protect our interests by requiring individual Environmental Impact Statements from the nuclear power industry before you grant any more licenses for new, or relicenses for mature, reactors. (0166-1 [Attaguile, Faith])

**Comment:** Individual Environmental Impact Statements are the least that the N.R.C. should require for ANY nuclear power plant! (0170-1 [Kranzdorf, Richard])

**Comment:** There is no (legal) national nuclear waste dump, so each and every site must be certified by at the very least, and environmental impact report. (0172-2 [Giral, Joe])

**Comment:** Before renewing the license for the mature reactor, Diablo Canyon, we need the NRC to require an individual Environmental Impact Statement for each site. (0178-1 [Alcon, Sylvia])

**Comment:** Before relicensing Diablo Canyon and other nuclear power plants an environmental impact study must be made before the plants can resume operation. Until then these plants should not be operating. (0184-1 [Rusch, Joann])

**Comment:** More environmental impact report on nuclear power plants are critical. (0191-1 [Scott, Barbara])

**Comment:** The National Park Service appreciates the opportunity to review the proposed rule, but has no comments at this time. (0235-1 [Dickinson, Lee])

**Comment:** U S Navy has the best overall safety record on anybody on nuclear power. I wish you would ask for their advise and help in dealing with long-term storage of spent fuel rods. (0003-2 [Adams, Grace])

**Comment:** Since the US navy has world's best nuclear safety record, you should ask US navy to take charge of all nuclear waste, salvage whatever they can salvage for the nuclear power systems of their own ships and store safely out of harm's way for three thousand years whatever they can not salvage. (0254-1 [Adams, Grace])

**Comment:** The NRC Staff should expand its planned response to scoping comments. Rather than merely summarize the comments received on the scoping issues when it issues the draft EIS, the Staff should also provide a full discussion of the basis for the Staff's final determination of the scope of the proceeding and its reasons for rejecting any suggested alternate issues to be included in its DSEIS. (0275-22 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** Please explain the specific statutory sections which allow for a "Generic" EIS. (0246-2 [Kohler, Joseph])

**Comment:** UCS recommends that the NRC conduct a formal lessons learned evaluation of its NEPA processes that led to adverse court decisions in 1979 and 2012 that identifies and corrects the fundamental flaws. (0260-1 [Lochbaum, David])

**Comment:** You simply don't have the information to be able to complete this EIS properly... (0004-6-8 [Makhijani, Arjun])

**Comment:** The industry trend is for increased enrichment and burn-up of light water reactor (LWR) fuel and virtually no data exist regarding its response to long-term storage. As of 2010, it appears that about 26% of spent nuclear fuel (SNF) in storage in the US has burn-up greater than 40,000 MWd/MTU (presentation by AREVA Federal Services to SC Governor's Advisory Council, December 2012), and this percentage will surely grow through time. It is imperative that there be data on this critical factor to support any EIS analysis of the impacts of long-term storage, as well as future handling and transport of SNF. Assumptions about environmental impacts of long-term storage of SNF are insufficient when data supporting the characteristics of the aging radiological source term do not exist. (0265-24 [Halstead, Robert])

**Comment:** The Yucca Mountain FEIS No-Action Alternative analysis did not include updated information and trends in fuel enrichments and burn-up, existing and projected, for commercial nuclear power reactors [Page 7-10]. There have been, and probably will be, additional significant increases in these parameters that will figure in SNF storage impacts, both short and long-term. This changing factor must be considered in the NRC waste confidence EIS scope as it is fundamental to the source term in all radiological impact analyses expected to be performed. (0265-4 [Halstead, Robert])

**Comment:** We strongly recommend that the EIS process comprehensively address the significant technical and institutional uncertainties and consequences caused by this nation's indefinite deferral of the development of functional disposal capacity for high level radioactive wastes. (0280-1 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Wear, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** There is uncertainty with the long-term integrity of modern high burn-up (>45Gw-days/MTU) fuel cladding after extended dry storage and subsequent transportation. It is possible that dry storage canisters, which would be shipped to a repository many years from now, could contain damaged fuel rods in an uncertain and perhaps unpredictable condition and configuration. It is very possible that the cladding may no longer function as an effective fission product barrier when it is received at the repository site. The environmental impact of this uncertainty in fuel condition has to be evaluated in both the post-closure and pre-closure periods of any future repository scenario. (0280-2 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Wear, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** The single greatest reason that the NRC will not be able to complete a scientifically valid EIS and therefore issue an updated WCD based on a sound environmental impact analysis is that it has not given itself enough time to conduct the necessary research and analyses to support reasonable assurance findings with respect to the safety of long-term spent fuel storage. As discussed above, the Commission expects to issue a draft Waste Confidence EIS in the fall of 2013. That is only enough time, however, to summarize currently available information about the risks of long-term spent fuel storage. But the existing information is grossly inadequate to support any reasonable predictive findings about the safety of such long-term spent fuel storage. There is no existing environmental or other study that has even attempted to predict the environmental impacts of storing spent fuel on site for hundreds of years, or perhaps indefinitely. Indeed, all other studies have been premised on the opposite conclusion - that a repository will be available in the relative near future. (0286-2 [Curran, Diane])

**Comment:** It will take a long time, potentially well over a decade, to collect the data needed to make scientifically valid impact analyses for high burnup fuel stored for long periods. Necessary research tasks include development of a sound database for a scientifically valid evaluation of the environmental impacts of prolonged storage of spent fuel, including high burnup spent fuel up to 62.5 GWd/MTU and MOX spent fuel. In addition, there are essentially no data available for high burnup spent fuel that has been stored in dry casks for extended periods of time. See Makhijani Declaration, Sections 4 and 10. As discussed in Dr. Makhijani's declaration, the significant dearth of information set forth above will take years to surmount. (0286-4 [Curran, Diane])

**Comment:** It is also important to have data on the newer cladding materials that have been developed to enable high fuel burnup, which is a relatively recent practice (since about the turn of the century). There are practically no such data. Indeed, even the research has been focused mainly on in-reactor behavior of high burnup fuels...(0286-64 [Curran, Diane])

**Comment:** Inclusion of MOX spent fuel in the scope of the EIS may necessitate an even longer period of data gathering before a scientifically valid evaluation of environmental impacts, accident probabilities, and consequences of possible malevolent acts can be made. (0286-66 [Curran, Diane])

**Comment:** Inclusion of Generation IV spent fuel in the scope of the EIS will necessitate an even longer period of data gathering before a scientifically valid evaluation of environmental impacts, accident probabilities, and consequences of possible malevolent acts can be made. (0286-67 [Curran, Diane])

**Comment:** Thus, if the NRC lacks sufficient technical information to support the WCD's findings of reasonable assurance regarding the safety of long-term spent fuel storage, then the AEA gives the NRC no choice but to suspend all licensing and re-licensing actions. (0286-7 [Curran, Diane])

**Comment:** Without extensive additional data on degradation mechanisms and their interactions, central and critical aspects of the EIS will be based largely on speculation and would have little or no valid scientific foundation, notably for high burnup spent fuel that has been stored for several decades or centuries, not to speak of indefinitely, for small modular reactors, for MOX spent fuel (notably MOX fuel made from weapons grade plutonium) and for spent fuel from Generation IV reactor designs. (0286-70 [Curran, Diane])

**Comment:** Since the analysis of disposal impacts will necessarily be generic, a process for bounding the dose will have to be developed. A bounding dose is a scientifically well-founded upper limit of exposure to individuals (workers, residents near the repository, a farming family far into the future that goes to live on the site after loss of institutional controls). This process will depend at least in part on the condition of the spent fuel to be disposed of and on the nature of the disposal casks and engineered barriers. The research described in Sections 4.1 to 4.14 will be important to making scientifically valid estimates of post-closure impacts and of peak radiation dose from uranium spent fuel. Additional work will be needed to estimate the impact of MOX spent fuel, for which a source term will also have to be developed. The NRC does not at present have the data needed to estimate the condition of the spent fuel that would be disposed of in a repository. (0286-76 [Curran, Diane])

**Comment:** The NRC currently lacks sufficient information to make a positive waste confidence finding or a finding of no significant impact from extended spent fuel storage or spent fuel disposal. (0286-78 [Curran, Diane])

**Comment:** First, the scope of the Yucca Mountain EIS is, by its own terms, inadequate to cover the scope of inquiry necessary for the Waste Confidence EIS. Second, by the NRC's own admission, it has a great deal of additional research to do in order to understand the

environmental risks posed by storage, handling and transportation of spent fuel over the long-term. (0286-79 [Curran, Diane])

**Comment:** The Yucca Mountain EIS was completed before any physical evaluation of high burnup fuel that had been in dry storage for any length of time. Indeed, the practice of high burnup was only in its early stages in 2002 when the Yucca Mountain EIS was published. Given the evidence that oxidation, hydriding, and other degradation phenomena are far more severe with high burnup fuel, the No-Action Alternative analysis in the Yucca Mountain EIS must be regarded as fundamentally deficient and unusable even on those limited scientific grounds alone. (0286-82 [Curran, Diane])

**Comment:** The data requirements for conducting a scientifically sound or even minimally valid waste Confidence EIS are varied and vast. It will take a long time, mostly likely well over a decade, to collect the data and do the needed modeling based on that data to make scientifically valid impact analyses for high burnup fuel stored for long periods. (0286-89 [Curran, Diane])

**Comment:** The research needs that they prioritized as the highest are significant, and will require substantial research and resources to develop the technology to monitor the spent fuel in storage and then to assess the consequences. Therefore, the draft EIS should clearly explain the status of each of these research needs, and how those needs relate to the proposed action and alternatives. The timetable for this EIS is in conflict with the stated need by NRC staff for this research, which will take far longer than the EIS on its present schedule, and the EIS should address the research gaps and whether a finding of waste confidence is possible without this information. (0298-2 [Johnson, Abigail])

**Comment:** [T]he Yucca Mountain EIS does not take into account the impacts of storing high burnup fuel, for which degradation phenomena are "far more severe" than earlier fuel types. (0322-3 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** Contrary to NEI's recommendation, the NRC cannot rely on the PSFS consolidated storage EIS... The Private Fuel Storage EIS does not provide the NRC with a means to avoid estimating the impacts of long-term storage of high burn-up fuel either onsite or at a consolidated storage location by appeal to NUREG-1714. As discussed in Dr. Makhijani's Declaration, this estimate must address the impacts of long-term storage of high-burnup fuel, about which the NRC has little or no existing information. (0322-8 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** The analysis of the adverse impacts of continued production of nuclear wastes and continued storage of that waste at reactor sites and the analysis of the mitigation alternatives to the status quo should use the procedures already developed for analyzing mitigation alternatives for severe accidents, thus producing objective and quantitative bases for comparing alternatives to the proposed action. (0275-15 [Brock, Matthew] [Sipos, John] [Sorrell, William H.])

**Comment:** NEPA mandates that in undertaking environmental reviews, agencies must "discuss the extent to which adverse effects can be avoided" so that "the agency [and] other interested groups and individuals can properly evaluate the severity of the adverse effects." NRC has the

unequivocal obligation to consider and discuss relevant mitigation options that are available, and to weigh the costs and benefits of such options. (0284-7 [Collins, Fred])

**Comment:** The EIS should consider mitigation alternatives. NEPA mandates that in undertaking environmental reviews, agencies must "discuss the extent to which adverse effects can be avoided" so that "the agency [and] other interested groups and individuals can properly evaluate the severity of the adverse effects." NRC has the unequivocal obligation to consider and discuss relevant mitigation options that are available, and to weigh the costs and benefits of such options. (0286-8 [Curran, Diane])

**Comment:** Third, the NRC must take care to ensure that it properly evaluates the environmental impacts of its actions with respect to these specific deficiencies. In this instance, we do not believe it would be -- that the NRC should undertake a broader examination of its spent fuel storage transportation disposition regulatory programs. For example, R&D efforts underway currently and those that will be conducted in the future by NRC, DOE, EPRI, et cetera, should be integrated with the aging management programs associated with license renewals, et cetera, of these systems for extended storage periods. (0004-9-2 [Callahan, Mike])

**Comment:** We also believe that the NRC should ensure that it properly bounds the environmental impacts of its actions, and not those of other federal agencies, in particular the DOE. We do not believe that the NRC must or should as part of this effort, undertake a broader examination of the nation's spent fuel storage, transportation, and disposition regulatory program to address the specific deficiencies found by the Court. Also, the NRC should not introduce speculation about what may or may not be specific regulatory and research--related issues in the longer term and import them into discussion of the current assessment of safety and security via this effort. (0259-3 [Callahan, Mike])

**Comment:** The Waste Confidence Scoping Notice should present the major federal action for which this EIS must be prepared. And that is to determine whether or how much additional SNF may be generated when there is no permanent, safe and secure waste disposal facility, no date certain by which such a facility will exist and the significant possibility that such a disposal facility may never exist. Further, if such additional SNF is allowed to be generated, what alternatives exist to the current practice of allowing nuclear wastes to be generated and stored at individual reactor sites indefinitely and in spent fuel pools for as long as the licensee chooses? And finally, regardless of how much new SNF may or may not be allowed to be generated, what are the long term storage alternatives and associated environmental impacts for the SNF and high-level radioactive waste that are already in existence? 10 C.F.R. § 51.27(a)(2). (0271-6 [Fettus, Geoffrey])

**Comment:** Despite the fact that, for the first time, NRC must conduct, and is planning to conduct, a full EIS analysis of the nuclear waste issue as it relates to nuclear wastes stored at individual reactor sites after plant shutdown, the proposed scope of NRC's analysis falls far short of the legally mandated reach of such an EIS. The premise of the proposed scope of the EIS published by NRC is that the purpose of the EIS is "to support the rulemaking to update the Commission's Waste Confidence Decision and Rule" (Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, 77 Fed. Reg. 65137

(Oct. 25, 2012)) thus implying an attempt to narrow the scope of the EIS inquiry by essentially assuming that further production of nuclear wastes without a permanent waste repository in existence will be allowed and attempting to turn the EIS process into a shell of its required purpose (0275-5 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** NCTC is proposing because of the scope of the EIS, that NRC implement the regulations for Section 106 which provide the Agencies with the ability to integrate Section 106 compliance with the NEPA process. Due to the scope and scale of the proposed action, the Agencies can chose to implement this provision in order to reduce redundancies when complying with both laws; provide the broadest possible opportunities and greatest convenience for the public and Native American Tribes to review and consult on the Agencies' proposed actions; and ensure that concerns pertaining to pre-historic and historic properties. The Section 106 regulations clearly state that integrating the Section 106 compliance process with NEPA does not waive Agency obligations under either law. While the regulations do permit the Agencies to take advantage of the NEPA process, the Agencies must still adhere to the fundamental direction for compliance with Section 106. (0284-2 [Collins, Fred])

**Comment:** The EIS should provide a comprehensive and thorough exploration of all the environmental issues associated with continuing to generate nuclear wastes when the Commission is unable to determine that there is a date by which a permanent, safe, and secure repository will exist for disposing of nuclear wastes. NEPA and Section 106 requires nothing less than a comprehensive look at all the potential environmental and pre-historic and historic impacts of the proposed action, and all the alternatives to the proposed action that would eliminate or mitigate those adverse impacts and a quantitative comparison of the proposed action and alternatives to it to assure that the best course of action is identified. (0284-3 [Collins, Fred])

## 18. Comments Concerning the Rulemaking Process

**Comment:** Depending on the technical bases, the NRC will have differing confidence in the safety of onsite storage and subsequent transport after cessation of reactor operation, and the extension of this confidence in time will depend on reasonable expectations regarding the availability of consolidated offsite storage and/or disposal... We will appreciate NRC's effort in the EIS to clarify how it expects various combinations of technical factors to provide greater or lesser confidence (site-specific factors being equal) in various licensing or license extension decisions (0270-7 [Niles, Ken])

**Comment:** We agree with petitioners that the WCD rulemaking is a major federal action requiring either a FONSI or an EIS. The Commission's contrary argument treating the WCD as separate from the individual licensing decisions it enables fails under controlling precedent. It is not only reasonably foreseeable but eminently clear that the WCD will be used to enable licensing decisions based on its findings. The Commission and the intervenors contend that the site-specific factors that differ from plant to plant can be challenged at the time of a specific plant's licensing, but the WCD nonetheless renders uncontestable general conclusions about the environmental effects of plant licensure that will apply in every licensing decision. (0271-2 [Fettus, Geoffrey])



**Comment:** According to NUREG-1748, the proposed action section of the EIS should also describe "the desired outcome or goals of the proposal." It is not clear what the desired outcome or goals are, other than to satisfy the US Court of Appeals' remand. WCD EIS presents a real opportunity to the NRC to take a hard look at the very real environmental effects of not having a national repository (a very real possibility given political and societal attitudes towards nuclear waste disposal). The proposed action is key to all other aspects of the EIS, including the scope, which is usually defined by the proposed action (such as a licensing action) and available NRC guidance to determine what is in or out of scope. (0321-11 [Mahowald, Philip R.]

**Comment:** I think you've gone well beyond what NEPA requires, well beyond what the NRC requires, and unfortunately I think this is an example of "no good deed goes unpunished" in terms of some of the comments that we've heard today about wanting more, better, different scoping. (0004-27-1 [Silberg, Jay])

**Comment:** We are pleased that the NRC is conducting an environmental assessment (EA) on the risks of long-term irradiated nuclear fuel storage in pools and dry casks at reactor sites. (0059-1 [Birnle, Pat])

**Comment:** During the three decades since the first Waste Confidence Decision, geologic repository programs in several European countries, the US and Canada have improved the technology to characterize sites, test engineered and natural barriers and to model their performance. Two countries, Finland and Sweden, have selected sites for development as repositories. Compared to 1984, technology is less of an issue than public acceptance. In 1984 the NWPA required multiple site characterization before a site was selected, a second repository in a different geographic location, and was sensitive to many of the public acceptance issues in siting a repository. The 1987 amendments to NWPA unraveled these provisions because they were considered by Congress to be too expensive, not recognizing that the resulting loss of public acceptance would eventually lead to the termination of the Yucca Mountain Project, and the loss of 25 years of work and \$15 billion of ratepayers' and taxpayers' money. Recognizing that a geologic repository is a national need, Federal Agencies, State, Local and Tribal Governments, the nuclear industry, NGOs and interested members of the public need to ensure that Congress recognizes the role of public acceptance in any new legislation that is enacted. However, the success of the WIPP project and of repository programs in Finland and Sweden shows that public acceptance of repositories for very long-lived radioactive wastes can be achieved, thereby providing a basis for Commission confidence. (0226-4 [Bell, Michael])

**Comment:** The EIS Report and the possible updating of the long-term waste confidence statement in 10 CFR Part 51.23 must not be viewed by the public as a "delaying approach" in solving the long-term waste management issues. It is mandatory that the true purpose of the EIS Report be clearly and concisely and openly and often discussed outside the "nuclear community" to gain support for the NRC effort while demonstrating a close and united working relationship with the BRC Report recommendations. (0294-5 [Bevill, Bernard])

**Comment:** I do not support this rule. (0048-1 [Forlie, Kai Mikkel])

**Comment:** The 'waste confidence' rule must be abolished as a tool for licensing nuclear reactors. (0115-2 [Abbott, Dana] [Aguilera, Marco] [Alexander, Kathleen] [Allen, Melissa] [Amel, Dean] [Anderson, Stevie] [Angst, Sara] [Anonymous] [Anonymous] [Baeckstrom, Chris] [Baier, Mary Ann] [Bartolacelli, Richard] [Bateman, Guy] [Benes, Michelle] [Bennett, Paul] [Berman, Gary] [Bertha, Bertha] [Bishop, Damon] [Blakely, Naomi] [Blevins, Katherine] [Block, Gary] [Bottomley, Pat] [Bratcher, Deborah] [Brimm, Martha] [Brown, Beth] [Bruce, Buffalo] [Buenzie, Tom] [Burke, Barbara] [Burns, Alan] [Burpo, Leslie] [Cappelletti, Regina] [Carberry, Mike] [Carrigan, Milton] [Caswell, Richard] [Cavalier, Corey] [Cherwink, Rob] [Clark, Carolyn] [Clausing, Mary] [Clucas, Donald] [Cockerill, Marc] [Cohen, Judy] [Coleman, Chrystal] [Collins, Carol] [Craig, Anne] [Craig, Carol] [Curette, Diane] [Davies, Phyllis] [Davis, Randall] [De Cecco, Jorge] [DeMarsh, Julianne] [Dimitri, William] [Doucet, Lisha] [Eichelberger, Don] [Elliot, Ed] [Espinosa, Sally] [Estes, Douglas] [Evans, Dinda] [Falk, Melba] [Feldman, Jane] [Flowers, Bobbie] [Foley, Brian] [Forbes, Jane] [Foskett, MaryAnna] [Fouche, David] [Frankfurter, Aryeh] [Fronce, Linnea M.] [Gibble, Joia] [Gilva, Stephen] [Goldin, Martha] [Goodell, Barbara] [Gosnell, Lisa] [Graves, N.] [Gupton, William] [Hadovsky, Linda] [Halizak, Kimberly Anne] [Hall, Silvia] [Hannah, Rober] [Hansen, Jan] [Hanson, Art] [Hanson, Natalie] [Hargrove, Chris] [Harkins, Lynne] [Haschke, Becky] [Mac Kkrell, Thomas] [Hauke, Molly] [Hendin, Judith] [Hill, Michael] [Horvat, Sabolch] [Howard, Gloria J] [Hughes, Kevin] [Hutchings, William] [Iversen, Gerald] [Jenkins, David] [Jones, Robert] [Jorgensen, Andrea] [Joseph, Randy] [Jurek, James] [Katz, David] [Kenyon, Deborah] [Kiralla, Michael] [Kitman-Trimmer, Lorraine] [Knol, Patricia] [Kohl, Sybil] [Kotch, Brant] [Kunkel, Christopher] [Kutcher, Celia] [Lang, Michael] [Lanski, Christopher] [Larkin, Gail] [Larson, Jean] [Laurie, Annie] [Lazzarini, Howard] [Lester, Janet] [Levin, John] [Lorwin, Lisa] [Lukas, James] [Lynch, Janette] [Mac Kkrell, Thomas] [Marcus, Jack Davis] [Margos, J.F.] [Martin, Brad] [McCall, Charles] [McCollum, Brian] [McDonough, Susan] [Morello, Phyl] [Morris, Daniel] [Moyer, Heather] [Mueller, Kirstin] [Oberlin, Carl] [Oconnell, Daniel] [Oehler, Susan] [O'Leary, David] [Page, Nicholas] [Palmer, R. Brent] [Payton, Renee] [Peirce, Susan] [Pfaelzer, Morgan] [Pino, Dolores C.] [Priestly, Meredith] [Prior, Barbara] [Prola, Jim and Diana] [Rafacz, Bernard] [Rattner, Ron] [Reel, Joseph] [Reischke, Ysan] [Ribnick, Lawrence] [Rigby, Cheri] [Robertson, Kenneth] [Robinson, Julie] [Rosen, Kay] [Rupar, Randy] [Ryan, Sarah] [S., Erin] [Schweiss, Kraig and Valerie] [Scott, Cathy] [Settanni, Anne] [Seyfried, Mike] [Shaffer, Matthew] [Shafnisky, Luke] [Shea, Kelly] [Shifrin, Allen] [Simmons, Carole] [Simmons, Ymani] [Skrzynecki, Richard] [Slade, Matt] [Slezak-Fritz, Joan] [Smith, Wiley] [Sparks, Jeanne] [Stadnik, George] [Stavelly, Jary] [Stein, Julia] [Stone, Lisa] [Strawn, Michael] [Struble, Dan] [Szokolai, Maria] [Tallent, Yvonne] [Tepper, Carol] [Trager, Jami] [Unknown, Ralph] [Vaughan, Leila] [Vora, Davina] [Walters, Catherine] [Watts, Elizabeth] [Wedow, Nancy] [Wildermuth, Gordon] [Williams, Terry J.] [Wolski, Mike] [Wong, Houston] [Woodcock, Charlene] [Wynne, Diane] [Young, Nancy] [Zamek, Jill] [Zerzan, Paula])

**Comment:** So far, NRC's "Nuclear Waste Confidence Decision" requests the public to blindly take a leap of faith and enter into NRC's world of make-believe, absent any factual basis. It is another confidence game or scam whereby the NRC attempts to gain the confidence of the American public that the high-level radioactive waste dilemma will be solved down the road and therefore nuclear utilities can continue making unlimited amounts of waste and storing it onsite unsafely - at the least cost to the industry. NRC uses its "Confidence Decision" to justify rejecting any waste-related challenges to new reactors, or old reactor license extensions forcing expensive court suits. NRC's concept of "Waste Confidence" is a phrase as hollow and meaningless as NRC's use of the terms "Reasonable Assurance" and "ALARA."  
(0148-39 [Lampert, Mary])

**Comment:** 1. Abolish the 'waste confidence' rule because all reactor sites are unique.  
(0152-1 [March, Leslie])

**Comment:** The real crisis of confidence is that the public has lost all confidence in the NRC itself to regulate. Period. The 'waste confidence' rule must be abolished as a tool for licensing nuclear reactors. (0157-2 [Kraft, Dave])

**Comment:** PLEASE abolish waste confidence. (0165-1 [Zimmermann, Warren])

**Comment:** Abolish the 'waste confidence' (perhaps more appropriately called "wasted confidence") rule now! (0166-2 [Attaguile, Faith])

**Comment:** We are opposed to NRC granting a free pass to the nuclear plants in regards to storage of radioactive materials and waste on site. (0172-1 [Giral, Joe])

**Comment:** Begin by abolishing the "waste confidence rule". (0178-2 [Alcon, Sylvia])

**Comment:** There is no reason for confidence in the NRC's Waste Confidence rule. (0247-1 [Geary, B.])

**Comment:** "Waste Confidence" has not been attained for the present, let alone any periods beyond active plant power generation periods of licenses. (0262-4 [Andrews, Richard])

**Comment:** Waste confidence is apparently a conceptual idea that only the NRC can understand. Given that there has been no viable solution for nuclear waste for more than 60 years, NRC should abandon the "waste confidence" oxymoron or specify a definition. The only confidence we have around waste is that it will be a perpetual problem. NRC must make a true and realistic statement about the situation and not resort to confusing terminology. (0269-11 [Warren, Barbara])

**Comment:** The NRC should eliminate the "waste confidence rule". (0290-4 [Craig, Anne])

**Comment:** Please scrap the existing Waste "Confidence" Environmental Impact Study and produce something that would be a little less embarrassing to those of us who have some education in science. (0305-1 [Simmerman, Scott])

**Comment:** Recent events tell us that there is no assurance whatsoever that waste will ever leave Prairie Island or any site (in spite of an updated WCD and TSR). The WCD and TSR have been updated or revised over the last 20 years to reflect changing realities. Each subsequent revision or update changes the date by which a repository will be available or increases the amount of time spent nuclear fuel can "safely" remain on-site beyond the licensed life of a plant. In 2010, after 25 years of study and \$25 Billion spent on Yucca Mountain, the Administration declared that we can do better and we must start over. Toward that end, the Blue Ribbon Commission (BRC) on America's Nuclear Future was established in 2010 to develop a new path forward. The BRC's work culminated in a January 2012 report that laid out several recommendations, including the need for a geologic repository. The Department of Energy (DOE) was to have developed an implementation plan (for the BRC's recommendations) by July 2012. It has been almost one year since the BRC released its report and recommendations with no implementation plan from the DOE.

This history is relevant because the WCD and TSR are inextricably linked to the development of a national repository. The responsibility for developing the repository, however, rests with a different federal agency, which may or may not receive adequate appropriations. Given this past history, how can anyone reasonably believe that spent nuclear fuel will ever leave reactor sites? What assurances do we have that once we start anew to develop a geologic repository, as the BRC recommends, that future a Congress will fully fund the project or some future President won't scrap that process altogether by claiming we can do better? (0321-2 [Mahowald, Philip R.]

**Comment:** For the most part, the Nuclear Regulatory Commission uses the legally defined term "spent nuclear fuel" and does not use the extra-legal term "used nuclear fuel." The NRC must stick with the legally defined term and not use an informal and confusing term which DOE and the plutonium industry have started using to imply that spent nuclear fuel can be reused, or reprocessed. (0281-12 [Fuchs, Katherine])

**Comment:** "Spent nuclear fuel" has a sound legal definition and substantial legal and legislative history. As the Nuclear Regulatory Commission (NRC) embarks on consideration of how to manage irradiated nuclear fuel that has been withdrawn from a reactor, it is advisable to use the legal term. (0288-1 [Brailsford, Beatrice])

**Comment:** Yes, I think I'd like to ask that you address some definitions. I would hope you would actually publish a proposed scope so we'd have an opportunity to comment on a reasonable scope. It's hard to engage in the process without you proposing something. And some have suggested that this may be not legal to do so. The definitions I would suggest are certainly the word confidence in relation to waste. For over 60 years now, we have had reassurances that the nuclear waste problem would be an easy one to solve. From when we first moved to Atoms for Peace. And obviously that has not been solved, so I think we really, waste confidence is something of an oxymoron and I would urge the NRC to have a definition for it, in this document. And the other one is the word temporary versus medium-term and long-term. If those could all be defined in terms of what kind of years do you mean by them, that would be very useful. (0118-4-1 [Warren, Barbara])

**Comment:** There is no basis at the outset for the NRC to revisit the five Waste Confidence findings themselves, and the Commission's direction to the staff does not contemplate such an approach. (0263-21 [Ginsberg, Ellen])

**Comment:** ...the EIS need not be structured around the WCD findings. Rather, the EIS can be structured to address the environmental consequences of interim spent fuel storage, after the operating life of a nuclear reactor until a repository is established, or the environmental consequences in the unlikely event that no repository is ever established. (0263-3 [Ginsberg, Ellen])

**Comment:** The Waste Confidence EIS and the Waste Confidence Decision Rule. How will the EIS inform the findings of NRC's revised Waste Confidence Decision? We understand that the NRC will retain the current "five-findings structure", but adapt it to reflect the results of the EIS as well as current policy circumstances and prospects. We would appreciate a careful discussion of the linkages between various combinations of technical factors (and their impacts)

with the five findings that make up NRC's (revised) Waste Confidence Decision. (0270-8 [Niles, Ken])

**Comment:** Transparency: In the 2010 Waste Confidence Decision, the NRC used "safeguards" as an excuse to avoid its responsibility for transparency and provide the public with the studies NRC relied upon to support its decision. It does not have to be this way... Second, NRC can agree to closed hearings to review facts deemed to be "safeguards" with public interest representatives having security clearance. NRC's secrecy serves to reduce the public's ability to participate in NRC's process and is in direct conflict with President Obama's call for transparency in government decision-making. (0148-1 [Lampert, Mary])

**Comment:** In addition to providing for an Informal Hearing, the Commission should assure that all the documents being reviewed by NRC Staff as part of the EIS process are made available to the public no later than when the Draft Supplemental Environmental Impact Statement ("DSEIS") is published. (0275-21 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** I am pleased that the NRC Staff established a web page listing NRC documents related to Waste Confidence (<http://www.nrc.gov/waste/spent-fuel-storage/wcd/documents.html>)... I suggest that the NRC Staff add other documents to its web page (i.e., not limited to NRC documents) that it considers to be material to the review; the public would benefit from this. Finally, in revealing source information that would be considered by the Staff, I believe the public could take the constructive opportunity to offer information or insights on why the Staff should not rely upon existing information. (0283-4 [Zalcman, Barry])

**Comment:** Adjudicatory process is needed. As near as possible to the adjudicatory decision-making process is needed now. The NRC is not facing the reality of the situation, if it thinks that top-down rule-making is going to solve the problem. There needs to be an unbiased group that is outside the nuclear industry to bring some reality to the situation (0237-8 [Thomas, Ruth])

**Comment:** The Commission has provided for the possibility of Informal Hearings for rulemakings in 10 C.F.R. § 2.805 which provides, in pertinent part, that the "Commission may hold informal hearings at which interested persons may be heard, adopting procedures which in its judgment will best serve the purpose of the hearing." For the following reasons, the States believe that the procedures set forth in Subpart L (Informal Hearing Procedures for NRC Adjudications) would be most appropriate for assuring the Commission that it has developed a complete record sufficient for Commission determination of the important issues involved in this EIS and rulemaking process. (0275-20 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The major federal action for which the EIS is being prepared is to determine whether to allow additional nuclear wastes to be generated when there is no permanent, safe, and secure waste disposal facility, no date certain by which such a facility will exist, and no certainty that it will ever exist, and, if the generation of such further nuclear waste is to be allowed, what alternatives exist to the current practice of allowing nuclear wastes to be stored at individual reactor sites indefinitely and in spent fuel pools for as long as the licensee chooses (0275-1 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The NRC's misperception of the major federal action for which the EIS is being prepared is highlighted by a recent letter from the NRC Chair in response to a letter filed by a number of public interest organizations regarding the proper scope of the EIS, wherein NRC asserts:

The update to the Waste Confidence Rule is the federal action; the "no action" alternative is a decision not to prepare the rule and instead to conduct a site-specific analysis of post-licensed life spent fuel storage for each NRC licensing action that relies on Waste Confidence. As the Commission has stated, the Waste Confidence rule is not a licensing action, it does not authorize the initial or continued operation of any nuclear power plant, and it does not authorize storage of spent nuclear fuel. Thus, licensing of specific reactors or storage facilities is not the purpose of this rulemaking, or the proposed action. A separate NRC action is required before a reactor is licensed and before fuel can be stored after the expiration of a reactor's license at a specific site. The environmental analysis accompanying each of these actions to license or relicense a nuclear power plant would examine sitespecific "no action" alternatives. (0275-7 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** The focus of my comments today on today's scoping analysis is the site-specific impacts of high density spent fuel pools. The State of New York strongly urges that the NRC staff and the commissioners as they go through this rule, make provision so that interested governmental entities, states, host communities, citizens, can actually raise issues of concern about site-specific environment impacts related to onsite storage of spent nuclear fuel and amongst those options the high-density storage in spent fuel pools. (0004-5-4 [Sipos, John])

## 19. Comments that are Out of Scope

**Comment:** When it comes to looking at impacts at the reactor site, we must look at the existing reactors to determine the impact. Since all radioactivity on a reactor site is the result of this irradiated fuel, directly or indirectly, there is no radioactive material waste on that site that is outside of the scope of impact. (0004-13-10 [French, Dominique])

**Comment:** Since we cannot meaningfully comment without knowing the prospective federal action that is being evaluated, we will assume that at least one of the actions that should have been specified for the scoping meeting is whether the NRC should continue granting licenses and license renewals for the use of nuclear fuel. That, after all, is how irradiated spent nuclear fuel is generated. In our view, there are other actions that should also be included in this evaluation including the production of nuclear fuel, all steps, and power operates that necessitate the use of higher burn-up fuels. (0004-13-4 [French, Dominique])

**Comment:** Scope of impact associated with high-level radioactive waste cannot begin with the reactor. The only reason nuclear fuel is produced at all is because of the NRC granting licenses for operations which depends upon the use of nuclear fuel. Therefore all aspects of uranium fuel and any other type of nuclear fuel production are in scope in our view. (0004-13-5 [French, Dominique])

**Comment:** Since there are many steps in making fuel, mining, milling, conversion, enrichment, and fuel fabrication, the environmental and human environmental impact of release of radioactivity and exposure to radiation at all these facilities must be considered along with the

transportation between these sites and all waste produced at every step. (0004-13-6 [French, Dominique])

**Comment:** The contribution of everyeachone of the fuel cycle facilities needs to be looked at as a contributor to the total radiation loosed by humankind. (0075-5 [Lewis, Marvin])

**Comment:** The environmental and public health impacts of uranium mining and milling are severe, life-threatening and long-lasting. They include massive amounts of radioactive and toxic rock and sand, or "tailings," surface and groundwater contaminated with radioactive and toxic pollutants, and airborne releases of conventional, toxic and radioactive pollution. Many places where uranium mining has been done have adopted bans on new uranium mines.(0090-1 [Kerr, Beverly])

**Comment:** The inevitable negative consequences if uranium mining are mining waste, radioactive gas, contamination of air, soil and water, and public health impacts. These negative factors make it unsuitable for Virginia and, in fact, other states in the US and other nations around the world... (0090-4 [Kerr, Beverly])

**Comment:** [The Blue Ridge Environmental Defense League's] overall recommendation to the Uranium Working Group and the Virginia General Assembly is that, based on these findings and previously submitted information, the Commonwealth of Virginia should keep the current uranium mining ban in place. (0090-5 [Kerr, Beverly])

**Comment:** So I'm not sure how many times you're going to hear this but I'm going to say it tonight. You can't really look at an environmental impact of waste storage without looking at environmental impact of waste generation, and you can't look at that without fuel generation, and you can't look at that without the whole fuel chain. It's all kit and caboodle, right? And that's why NEPA is the way it is because our life is that way. (0119-5-1 [Olson, Mary])

**Comment:** Uranium must be left in the ground. It is terrifying and outrageous that decisions made over the last 70 years have committed humankind to daily monitoring and maintenance of lethal nuclear waste for countless generations. (0220-1 [Deutsch, James])

**Comment:** Issues beyond the scope of this EIS include the environmental impacts of the entire nuclear fuel cycle and alternatives to licensing nuclear power plants. Although the Court found that individual licensing decisions are predicated upon the generic WCD, it did not mandate that the EIS supporting the WCD assess the environmental impacts of plant licensing more broadly...Therefore, the NRC need not assess the environmental impacts of nuclear plant operation more generally. (0263-15 [Ginsberg, Ellen])

**Comment:** Now is the time to finally commence work on an Environmental Impact Statement that fully assesses the environmental impacts of the entire uranium fuel cycle, including health and environmental impacts and costs, and that examines a reasonable array of alternatives, including the alternative of not producing any additional radioactive waste. (0271-22 [Fettus, Geoffrey])

**Comment:** If NRC is going to assume that continued production of nuclear wastes, and thus electricity from nuclear reactors, is a benefit and use that benefit, either implicitly or explicitly to justify adverse environmental impacts from further nuclear wastes production, then it must

quantify those alleged benefits and the adverse impacts and take a hard look at both of them. (0275-19 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** It is essential that this EIS integrate the systems components of the nuclear power industry, including its nuclear wastes, in order to produce a useful and meaningful analysis. (0298-3 [Johnson, Abigail])

**Comment:** The EIS should explain why the Yucca Mountain facility is not acceptable for long-term storage of spent nuclear fuel. Sufficient details should be provided or references be cited (0246-11 [Kohler, Joseph])

**Comment:** A definition of permanent disposal is essential. We believe the definition should incorporate the National Academy of Sciences recommendations for a successful repository: waste placement with plans for reversibility, long term monitoring and control, capability for treating wastes and waste retrieval if necessary. (0269-12 [Warren, Barbara])

**Comment:** Although interim (either pool or dry cask) storage at the reactor site is safe for extended periods, the Council has long held the position that a concrete path forward for the back-end of the nuclear fuel cycle is critical, especially for expansion of nuclear energy in the United States and continued global involvement in the dramatically expanding international nuclear energy marketplace. To this end, we support an "all of the above" waste management approach including resolution of waste confidence issues; completion of the Yucca Mountain licensing process; development of a repository; comprehensive consolidated management approaches; funding and organizational reforms; and recycling and other technology-driven solutions to close the fuel cycle. (0276-1 [Blee, David S.] [Knox, Eric])

**Comment:** In order to fully evaluate each scenario, the EIS should include consideration of the environmental impacts of disposing of spent fuel once it is placed in a repository. (0286-122 [Curran, Diane])

**Comment:** The EIS must also assess the consequences of each scenario. As further discussed in Dr. Makhijani's Declaration, the NRC no longer has a technical basis to assume that spent fuel disposal in a repository will cause no radiological releases and therefore will have no significant adverse environmental impacts. (0286-14 [Curran, Diane])

**Comment:** For scenarios that include repository disposal, the scope of the EIS should also include the calculation of surface impacts at the site (including those from storage, unloading, repackaging, etc.) and post-closure repository impacts. In regard to post-closure repository impacts, the NRC cannot rely on the estimated zero radiation doses from salt disposal as specified in Table S-3 in 10 C.F.R. § 51.51(b) because (i) the NRC itself has admitted that salt disposal is inappropriate for spent fuel, (ii) all other media will have non-zero impact, and (iii) the impact is highly dependent on the combination of site, engineered barriers (including disposal casks), and sealing systems that are presumed to be used. (0286-18 [Curran, Diane])

**Comment:** Deep geologic disposal impacts depend on the combined performance of the spent fuel and the disposal cask, the engineered barriers, the repository sealing system, and the near-field and far-field geologic, seismic, and hydrogeologic features of the site. In addition, assumptions are needed about the use of resources and defining the maximally exposed individual, normally taken to be a resident farmer family. The EIS must explore all reasonable



combinations of geology, engineered barriers, sealing systems, and disposal casks to explore bounding dose. (0286-77 [Curran, Diane])

**Comment:** The NRC cannot avoid estimating the impacts of repository disposal for all scenarios in which such disposal is assumed.

NEI suggests that a repository "would mitigate" impacts of onsite storage and that "the EIS need only describe the availability of a permanent repository as a potential mitigating measure" rather than actually estimating the impacts of such disposal. NEI suggests this because "under NEPA, the NRC need not be in a position to compel specific mitigation actions, outcomes, or alternatives." NEI Comments at 6. We disagree.

A repository is not merely a "mitigation alternative" to a basic strategy of storage. On the contrary, a repository is the desired solution for minimizing the environmental impacts of spent fuel that has been generated by the operation of nuclear reactors. It has been central to the waste confidence findings from the very start. In the Scoping Notice, repository disposal is assumed for all but one of the NRC's scenarios proposed for consideration in the EIS. Under NEPA, therefore, the environmental impacts of repository disposal may not be ignored in this EIS. The NRC is required to calculate the impacts of disposal in all scenarios where such disposal is assumed. See also ¶ 7.1 of Dr. Makhijani's Declaration, which demonstrates that an environmental analysis for any storage scenarios that are followed by repository disposal logically must include an analysis of the impacts of the repository, in order to ensure that the environmental impacts of each scenario are fully considered.

The only analysis of repository impacts that the NRC has is Table S-3, whose finding of no significant impact is based on the assumption that spent fuel will be reprocessed and the resulting high-level waste will be disposed of in bedded salt. As discussed in Dr. Makhijani's Declaration, ¶¶ 7.3 and 7.4, that assumption does not address disposal of spent fuel; further the assumption that spent fuel could be disposed of in salt has been explicitly repudiated by the NRC, and therefore the finding of no significant impact is no longer valid. Further, Yucca Mountain disposal impacts also cannot be used since Yucca Mountain is highly unlikely to be available as a permanent repository and since the project has been defunded by the govern. (0322-5 [Curran, Diane] [Fettus, Geoffrey])

**Comment:** There should be dedicated state and federal funding...to prohibit reprocessing. The reprocessing of irradiated fuel has not solved the nuclear waste problem in any country. (0004-14-10 [Zeller, Lou])

**Comment:** Okay, I wanted to state that I'm not clear how, from the presentation how fuel reprocessing factors into this analysis? If it's not been considered, I submit that it should be. (0118-18-1 [Jaworski, Mary])

**Comment:** And I guess not including anything that comes out of say re-started MOX or reprocessing programs. And so, I think that needs to sort of be factored into waste confidence which is that we've got to come up with a way to account for three Yucca Mountains or sites. (0119-10-3 [Levine, Gregg])

**Comment:** REPROCESSING - NOT THE ANSWER. PW does not support reprocessing. It does not solve the waste problem; rather it exacerbates it by creating numerous additional waste streams that have to be managed. It is expensive, polluting and increases nuclear weapons proliferation threats. (0148-35 [Lampert, Mary])

**Comment:** Reprocessing is not the answer. (0148-6 [Lampert, Mary])

**Comment:** The US experience with reprocessing should be fully reviewed and explored in the EIS. While nuclear proliferation was a key factor in halting reprocessing, it is worth reviewing that reprocessing also substantially increases nuclear waste quantities, including high level wastes. The State of New York bought into federal promises when it supported commercial nuclear reprocessing. After just six short years, the contractor left the venture and the contamination. Since the 1970s the state and the public have been dealing with widespread contamination at West Valley, NY and battling the federal government over the cleanup. Inadequate funding and the political will to complete a full cleanup threaten the Great Lakes and drinking water for millions of people. (0269-18 [Warren, Barbara])

**Comment:** Prohibit reprocessing: The reprocessing of irradiated fuel has not solved the nuclear waste problem in any country, and actually exacerbates it by creating numerous additional waste streams that must be managed. In addition to being expensive and polluting, reprocessing also increases nuclear weapons proliferation threats. (0273-13 [Zeller, Lou])

**Comment:** Without confidence, NRC should not even waste resources on developing reprocessing licensing criteria and regulations. In fact the leaking tanks and contamination at the federal government AEC/DOE reprocessing facilities in Washington, Idaho, South Carolina and Tennessee should be included in this EIS including the leakage of the high level waste that has already occurred into the rivers and watersheds of those facilities. (0285-15 [D'Arrigo, Diane])

**Comment:** Should NRC consider licensing reprocessing in the future, the WCD potentially could be used in that licensing proceeding. NIRS contends that the existing reprocessing waste (tanks, sludge, high level waste logs, damaged fuel buried at the site, and any other reprocessing waste) need to be considered in the WCD both for the capability of providing permanent isolation in a high level waste repository in practice and for long term storage in the absence of such a repository. (0285-19 [D'Arrigo, Diane])

**Comment:** The EIS should not only address the storage of spent nuclear fuel, but also the potential storage of high level radioactive waste from reprocessing of spent nuclear fuel. (0286-21 [Curran, Diane])

**Comment:** The proposed EIS should not only address the storage of SNF, but also the potential storage of HLW from reprocessing of SNF. (0286-94 [Curran, Diane])

**Comment:** Interim storage of spent fuel and highlevel waste for an extended period is not a final solution and long-term waste management solutions must include spent fuel reprocessing with final geologic disposal of any high-level waste. The Department supports spent fuel reprocessing and the final geologic disposal of the high-level waste. (0294-3 [Bevill, Bernard])

**Comment:** Although I am a firm believer in recycling at every opportunity, I do oppose repurposing/reprocessing irradiated fuel; this appears to expand the nuclear waste stream rather than decrease. (0314-3 [Riley, Christine L])

**Comment:** I strongly oppose "recycling" the waste in the form of MOX fuel, which generates more hazardous waste streams down the road. (0336-5 [Warshauer, Meira])

**Comment:** Containment - Will water be captured after spent nuclear fuel has been removed from storage? Or will water be drained? (0096-4 [Wiley, JiYoung])

**Comment:** And a couple of other categories that need to be accounted for, DOE is looking at greater than Class C, so-called low level radioactive waste disposal. And certainly one of the possibilities is that the commercial irradiated nuclear fuel repository might be looked to for that disposal need as well. (0118-17-10 [Kamps, Kevin])

**Comment:** Regarding scenarios for the projected volumes that will be, of waste, that will be necessary to deal with in a repository, my question is are they considering also the volumes of waste from reactors overseas currently that are promised that if they would buy our reactors that we would take their waste. And so how much currently is there projected to be and, assuming this policy to sell our nukes abroad continues, how much added waste will that add to the volume, enhance the probability of having a permanent off-site repository develop. (0118-15-1 [Lampert, Mary])

**Comment:** NRC downplays the severity of problems that come with siting and licensing a repository and incorrectly concludes that political resistance rather than legitimate technical problems is the reason that Yucca has not opened and is unlikely to do so. In the oft chance that Yucca does open, its maximum capacity of 77,000 metric tons will be met by waste generated by 2009 requiring the development of another storage facility east of the Mississippi. NRC may opine that Congress will change this law; however that is not assured. In addition the EIS must factor in that: (a) the U.S. has agreed to take spent fuel assemblies from overseas as part of their agreement to buy U.S. reactors... (0148-33 [Lampert, Mary])

**Comment:** REDUCING FUTURE WASTE. Like drunken sailors on a spree, NRC pushes or enables the production of more waste domestically, so far U.S. reactors have generated 65,000 metric tons of spent fuel, of which 75% is stored in pools according to NEI; and, to make matters worse, importing foreign spent fuel.

For example, on January 26, 2006, the Washington Post (Nuclear Energy Plan Would Use Spent Fuel, Peter Baker and Dafna Linzer, Washington Post, January 26, 2006, A01) reported that the Bush administration prepared a plan to take spent fuel from foreign countries and reprocessing it - a technology not yet approved and one that does not eliminate waste - rather creates waste. Scoping requires not only considering waste generated in the U.S. but waste generated overseas that we agreed to take back. How much foreign waste is there to date; and how much are we committed to in the future? The notion of accepting other countries' spent fuel at a time when the United States has no means to dispose of its own nuclear waste is totally irresponsible. This was followed by the federal government's weighing of a Utah company's request to import large amounts of so-called low-level radioactive waste from Italy so that we can become the nuclear garbage dump of the world. (Christian Science Monitor, Mark Clayton, February 28, 2008). (0148-36 [Lampert, Mary])

**Comment:** NRC should factor the potential impacts (security, social) of foreign ownership of this waste. (0285-6 [D'Arrigo, Diane])

**Comment:** The spent nuclear fuel in our country includes far more than is just located at the nuclear power reactors. We must also deal with the wastes of the more than a score of research reactors. We must deal with the massive quantities of hazardous nuclear wastes from the nuclear weapons complex. We must deal with the large amounts of depleted uranium wastes

that are stockpiled and currently attempted to be peddled into the conventional armaments uses as armor penetrating shells and even into consumer and industrial products. We must deal with the huge inventory of wastes such as U-233 stockpiles stored at ancient facilities that date from the beginning of the nuclear age and are extremely hazardous.

Scope Request: The NRC needs to engage and begin to solve these problems rather than allowing them to be put off again and again. Additional EIS processes need to engage to immediately deal with this entire scope of extremely hazardous materials. (0262-9 [Andrews, Richard])

**Comment:** This has to do with the confidence over that they'll be somewhere to send the waste from reprocessing from West Valley. They're planning now at West Valley which is the only commercial reprocessing that took place in the country although a portion of it was weapons. They're planning to take the solidified high-level waste out of the building that was used for reprocessing where it's been stored and put it in 50-year license -- well -- yes, casks that there's confidence will be good for 50 years on a pad on the road. And so, is there a portion of this process that you're going through, is it going to look at that as well as the irradiated fuel from the different reactors? ...Well, what you're doing here though is you're looking at -- isn't this scoping to deal with the confidence that the Nuclear Regulatory Commission has over -- confidence that you have that there will be somewhere to permanently I guess dispose of this waste -- of the waste from nuclear power? Is that right? ...Waste confidence decision is only on the irradiated fuel then? (0119-4-1 [D'Arrigo, Diane])

**Comment:** One fact that should be included is the West Valley Demonstration Project, which demonstrates that nuclear contamination is permanent despite the long term best efforts of both state and federal governments. (0219-2 [Gugino, Martin])

**Comment:** The West Valley site must be fully evaluated in the EIS to insure full and complete cleanup. (0296-22 [Shapiro, Susan])

**Comment:** We do support the concept of hardened onsite storage...Of course, that's not appropriate at all places. I think Prairie Island is probably the most noteworthy example of where we'd want to get it offsite. (0004-18-4 [Fuchs, Katherine])

**Comment:** The state [of New York] would encourage the NRC and we have listened carefully and we've read the PowerPoints and to your comments today, but to provide, to make provision for an analysis of site-specific impacts for storage of spent fuel and we believe at the Indian Point facilities in Westchester County. (0004-5-2 [Sipos, John])

**Comment:** We're worried about the exponential amount of spent fuel rods hovering over San Onofre. I was even comparing that to Fukushima. It really, really dwarfs the amount of fuel we have in Fukushima. (0005-18-1 [Iwane, Cathy])

**Comment:** Please enter into the record that at least one concerned citizen of the Hudson Valley, namely me, requests that everything possible be done by our elected and appointed officials to get rid of nuclear waste anywhere near the Hudson River Estuary or any other river or estuary for that matter. (0007-1 [O'Neill, Kevin])

**Comment:** Because of our landmark court victory, there is no longer any legal basis for plants like Indian Point to avoid studying the environmental impacts of long-term nuclear waste storage in fuel pools or dry storage. (0008-1 [Evans, Dinda])

**Comment:** 1. The agency has used an informational meeting at Bloomsburg to introduce the idea of comments from the public not getting into any NRC record or docket. Nothing was saved in writing of the comments from the audience that night. People had come from Philadelphia and all over Pennsylvania to get their comments into the record.

2. The AL J, administrative law judge, in any hearing has dictatorial powers to eliminate any testimony and evidence from the record with little restraint. This makes intervention prohibitively expensive and appeals impossible. This change followed the first time that an individual intervener, pro se, ever won a contention at a hearing on an operating nuclear power plant (See Lewis Contention in the matter of Three Mile Island #1 Restart Hearings.) I refer to Para. 2.333 Authority of the presiding officer to regulate procedure in a hearing.

3. The NRC held a public meeting about the complete collapse of safety culture at Palisades NPP on Sept. 12, 2012. Considering that the NRC has listed Palisades as one of the 4 worst run plants, Palisades has the worst embrittled reactor vessel according to NRC, and leaks into the control room, I do not see NRC safety culture as "world class." The NRC has a penchant for ignoring that which contradicts the industry viewpoints. This is especially the case for generic problems; fire safety, offsite power outages, Mark I design weaknesses.

4. Previously classified documents show potential fire dangers at San Onofre. A fire at Browns Ferry NPP 37 years ago prompted the NRC to promulgate regulations. These regulations are not met in many NPPs to this day. Or you may consider workers smoking marijuana as meeting the hourly fire watch variance. Many NPPs continue to be granted variances to the fire regulation.

5. Back when nuclear power plants were first proposed, the idea-of a 'smartgrid' was unheard. We now have many smart grids which can be easily broached.

6. Mark 1 designs have many weaknesses according-to a stockholder's resolution presented: April 25, 2012 at Detroit's Renaissance Center. Any perusal of what is happening at Fukushima will give the Chairman a good perspective of Mark 1 design flaws. Russia is presently talking to Japan as to where 40,000,000 refugees will go if the design flaws proceed further.

7. San Onofre has shown thinning and wear in steam generator tubes as little as 2 years old. Many cracks and wear has come to light unexpectedly all over the nuclear landscape. I request that unexpected wear be addressed before licenses are issued and adequately addressed.

8. I am pleased that security has been reintegrated into ROP assessments. I hope that the reintegration of safety will lead to better oversight than detailed above.

9. I live near the Limerick Nuclear Power Plant. Please tell them to fix 3 year old leak into the River. As to the financing of NPPs and the welfare meted out to the nuclear industry, I plan to bring that up in later comments.

10. I have not gone into the most contentious parts of the nuclear fuel cycle. Tsunamis and floods of proportions unseen historically are possible. Earthquakes happen. The Caldera at Yellowstone is 50,000 years overdue to blow. Man may have spread enough radiation to reset

the evolutionary clock of the Earth which means Mankind is facing extinction. (0009-1 [Lewis, Marvin])

**Comment:** I am writing to you to urge you and your office to please carry out a thorough and comprehensive environmental impact statement for the continued storage of carcinogenic and frightening nuclear waste at the Indian Point, Nuclear Power station. (0088-1 [Poole, Jesse])

**Comment:** Nuclear waste storage is a very dangerous man made problem, no one in the world has a solution yet. We have 5 nuclear reactors in NC and the Shearon plant holds more waste than most of the other nuclear plants in the country. This is a critical subject for NC and the safety of its residents. (0104-2 [Cunningham, Kristine])

**Comment:** The Council has suggested that our means for participation would be through a 2.206 petition. But then Mary Lampert provided the information that there were only, only two times have there been a substantive relief given under one of those petitions, since 1975. So, basically, you know, it's a meaningless opportunity for us to try to participate in this process. And when you talk about repeatedly throughout this hearing, public process and wanting to hear from the public, you are essentially excluding a community that has a very large amount of nuclear waste stored on the shores of Cape Cod Bay, which was in the hurricane zone and there is no plan, that we know of. The petition or the letter that Entergy submitted its spent fuel plan management proposal, submitted as part of its license, under 10 CFR 50.54(bb), is basically just sitting there and it was essentially, you know, a bait and switch. The NRC never reviewed this schedule as far as we can tell, never ruled on it and said it was adequate. So the plant has now gotten relicensed without having the spent fuel management plan submittal reviewed and ruled on. And now, because the license was issued before the Waste Confidence Decision, it's not going to be considered under the generic EIS. So we're in a Catch 22, sort of a bait and switch type of situation. And it would appear that any opportunity for public process for us, does not exist. No way to participate in this proceeding other than via a meaningless 2.206 petition. So I would guess I would ask you to take into consideration making some kind of special provision for Pilgrim and for the community. There are five million people living within a 50 mile range and, as you know, a boiling water reactor, Fukushima-style, etcetera, etcetera. (0118-19-1 [Sheehan, Margaret])

**Comment:** Again, at Palisades the concern of a violation of NRC Earthquake Safety Regulations, which was identified by an NRC dry-cask storage Inspector, Dr. Ralph Landsman, in February of 1994. And yet these defective casks with defective wells and no quality assurance are still deployed in violation of NRC Earthquake Safety Regulations, on the shore of Lake Michigan. (0118-2-6 [Kamps, Kevin])

**Comment:** In licensing/relicensing, you should (imperative: must) consider the habitat of this on-site storage in regards to all environmental and anthropogenic parameters. (0130-1 [Lenz, Andrew])

**Comment:** This experience is directly relevant to the Pilgrim plant. As at other plants in the USA, EDMGs at Pilgrim cover measures that seek to mitigate damage if the plant experiences an attack or an accident. The EDMGs were drawn up by the Nuclear Energy Institute (NEI), which is an industry association. They were secret until NRC recently placed them in the public domain. NRC has made them a license condition for the Pilgrim plant. The measures covered by these EDMGs at Pilgrim include measures for adding water to the spent-fuel pool.

Note that NRC placed the EDMGs into the public domain in response to the Fukushima accident. Thus, the newly-disclosed EDMGs add to the body of new and significant information that arises from the Fukushima accident.

In the newly-disclosed EDMGs, NEI calls for a capability to spray at least 200 gpm of water into the Pilgrim pool. This pool is high up in the reactor building. To accommodate this situation, NEI calls for the spray capability to include:

"Capability to lift/locate the monitor nozzle such that the spray can be externally directed into the spent fuel pool (e.g., from an adjacent building roof, fire truck extension ladder). The lifting capability (e.g., crane or fire truck with extension ladder) may be located off-site as long as the site has confidence (e.g., through an MOU) that it will be available for use on-site within the required timeframe (i.e., 2 hours or 5 hours). This may require a modification to the lifting device to allow the monitor nozzle to be affixed."

Presumably, the Pilgrim licensee has made an arrangement to bring a truck-mounted crane or a ladder fire truck to the site at short notice. This arrangement might work in some situations; however, there are several factors that could render the arrangement unworkable, including:

- This arrangement can never be realistically tested.
- An event that initiates or co-initiates the accident (e.g., earthquake, hurricane, ice storm, blizzard, attack) could also render the truck unavailable.
- A radioactive release from a reactor accident could produce radiation fields that render the truck unavailable, or preclude its use on the site.
- There seems to be no provision for a radiation-resistant TV camera to guide nozzle positioning, or for shielding of the truck/spray operators.
- There seems to be no recognition that spraying water on exposed spent fuel could, in some circumstances, exacerbate the accident by feeding a zirconium-steam fire.
- To some extent, NEI recognizes that its guidelines cannot guarantee that water can always be added to the pool. NEI says: "It is understood that not all conceivable scenarios can be mitigated by sprays. The objective is for each site to work to identify means to spray the pool."  
(0148-14 [Lampert, Mary])

**Comment:** Require Indian Point to make a comprehensive study of the effects of storing nuclear waste on site without creating long term health hazards or creating undefendable terrorist targets. (0222-1 [Silver, Barrett])

**Comment:** As a systems engineer who has worked on the Space Shuttle program, I would like to note that program was terminated because the design lifetime was reached, and the government chose not to do the necessary engineering to extend that design lifetime. I am appalled to learn that the NRC had been granting license extensions for Nuclear plants beyond their design lifetimes without such design lifetime extensions. This means that there is no safety design in effect for these plants, as any element is subject to potential failure as being outside its design envelope. This in turn means that all sorts of unknown parts are liable to failure due to use beyond their design life. It is imperative that any plant license extension be contingent upon such an engineering review, and replacement of all elements that cannot be deemed reliable for the extension period, whether due to age, wear, radiation exposure, or any other lifetime-related factor. If such elements cannot be replaced, the plant must be shut down and not re licensed.  
(0225-1 [Filler, Matthew])

**Comment:** We also want to express our emphasis on communities facing possible NEW CONSTRUCTION of a nuclear power plant. For example, citizens should be able to question NRC staff and make public comments on the nuclear waste produced in their town at the proposed W.S. LEE Nuclear Station near Gaffney, S.C. Issues to be addressed include monitoring issues, storage type and exact location, possible health effects, trucking, and strict guidelines for the time period they are required to store the radioactive waste. Nuclear utility ratepayers must be made aware of the dollar amount they pay for nuclear waste management.

The NRC must be transparent in their efforts to give notice to the citizens of Gaffney, SC and surrounding 100 mile radius about the current hazards of storing nuclear waste at existing reactor sites. People living in this area must be fully informed that they will be faced with storing nuclear waste for generations to come because there are no current plans for permanent waste disposal. Why? There are no citizens who feel safe having thousands of metric tons of radioactive waste dumped in their state. (0274-1 [Sorensen, Laura])

**Comment:** Another example is the unique location of the PINGP's ISFSI: it sits in a flood plain at the headwaters of the Mississippi River. The ISFSI is also located at the confluence of the Mississippi and a local river, the effect of which literally reverses the flow of the Mississippi. This is not only a unique feature but a very important one considering that, in the event of an incident at the ISFSI, the impact would be not simply local but nationally as the waters of the Mississippi would be impacted downstream. (0291-7 [Harlan, Thomas])

**Comment:** Site Specific Cumulative Health Impacts to groundwater and surface water which supply the public with drinking water within 50 miles of nuclear waste storage sites must be fully evaluated in the EIS to comply with the federal Safe Drinking Water Act. (0296-17 [Shapiro, Susan])

**Comment:** Site Specific Cumulative Health Impacts to food supply, including milk, eggs and other agriculture products produced within the 50 mile radius of nuclear waste storage sites, must be fully evaluated in the EIS. (0296-18 [Shapiro, Susan])

**Comment:** This comment is intended to supplement previous ones I have made, calling for seismic risks to be included in the scope of this EIS.

...NRC has still required no action to address Dr. Landsman's concerns, 20 years after the dry cask storage pad was first installed on the sand dune. The concrete cask pad is 3 feet thick, but sits atop 55 feet of loose sand, anchored to nothing.

The Bible's injunction against "building your house upon the sand" comes to mind. Palisades' dry cask storage pad, bearing some two dozen, fully loaded, high-level radioactive waste casks, each weighing well over 100 tons, is located on a sand dune which the U.S. Army Corps of Engineers and the State of Michigan Department of Natural Resources have identified as a high-risk erosion zone. The pad, built in 1993, is less than 150 yards from the waters of Lake Michigan, a headwaters of the Great Lakes. 40 million people in 8 U.S. states, 2 Canadian provinces, and many Native American Nations draw their drinking water from the Great Lakes. (0330-1 [Kamps, Kevin])

**Comment:** But this [preferred alternative] also includes the rejection of any more 20 year license extensions as NRC has rubberstamped at 73 reactors since the year 2000. Thus, such pending license extensions as at Indian Point 2 & 3 (NY), Crystal River 3 (FL), Diablo Canyon 1



& 2 (CA), Seabrook (NH), Davis-Besse (OH), South Texas 1 & 2 (TX), Limerick 1 & 2 (PA), Grand Gulf 1 (MS), and Callaway (MO) should all be rejected by NRC. (Beyond Nuclear has successfully applied the Nuke Waste Con Game victory to win from NRC two year delays in the finalization of licensing approvals for new reactors at Grand Gulf 2 in MS and Fermi 3 in MI, as well as for 20 year license extensions at Grand Gulf 1 in MS and Davis-Besse in OH. A coalition of two dozen environmental groups has applied the victory against three dozen new and old reactor licensing proceedings across the U.S.). (0062-3 [Jessler, Darynne])

**Comment:** But this [preferred alternative to stop making irradiated nuclear fuel] also includes the rejection of any more 20 year license extensions , as NRC has rubberstamped at 73 reactors since the year 2000. Thus, such pending license extensions as at Indian Point 2 & 3 (NY), Crystal River 3 (FL), Diablo Canyon 1 & 2 (CA), Seabrook (NH), Davis-Besse (OH), South Texas 1 & 2 (TX), Limerick 1 & 2 (PA), Grand Gulf 1 (MS), and Callaway (MO) should all be rejected by NRC. (Beyond Nuclear has successfully applied the Nuke Waste Con Game victory to win from NRC two year delays in the finalization of licensing approvals for new reactors at Grand Gulf 2 in MS and Fermi 3 in MI, as well as for 20 year license extensions at Grand Gulf 1 in MS and Davis-Besse in OH. A coalition of two dozen environmental groups has applied the victory against three dozen new and old reactor licensing proceedings across the U.S.) (0068-3 [Sheridan, Paul])

**Comment:** Pending license extensions as at Indian Point 2 & 3 (NY), Crystal River 3 (FL), Diablo Canyon 1 & 2 (CA), Seabrook (NH), Davis-Besse (OH), South Texas 1 & 2 (TX), Limerick 1 & 2 (PA), Grand Gulf 1 (MS), and Callaway (MO) should all be rejected by NRC. (0072-4 [Shuput, Steve])

**Comment:** I write as one who lives in the heavily populated Northeast in proximity to 3 nuclear reactors. Let's let common sense prevail and not renew the licenses of elderly reactors for an additional 20 years. (0221-1 [Kline, Susan])

**Comment:** Nuclear power plant aging must be addressed. It is hard to understand how the NRC could have allowed license extensions and the uprating of power generation at even the nation's oldest reactors. The aging concern particularly includes those 23 General Electric Mark I reactors that are similar to the four reactors at Fukushima Daiichi --- an accident still in progress. All older operating reactors have a history of corrosion, plugged pipes, leakage of radioactive contaminants, and other defects. While the removal of defective, outdated equipment is essential, the storage of the replaced, highly radioactive components and structures poses major waste confidence challenges. (0277-9 [Roskos, Laura])

**Comment:** Family and Friends live down stream from Hanford. The whole world relies on the ocean polluted by Hanford. Clean it up. (0159-1 [von Christierson, Peter])

**Comment:** I have attended public meetings on the problems involved in storage of nuclear radioactive waste at the Hanford site in the state of Washington. The public comments at these meetings document public resolve that no additional radioactive waste be brought to Hanford until that site has been cleaned up. All communities along the Columbia River are concerned about the ongoing leakage of radioactive waste from Hanford into groundwater in the Hanford area and thence into the Columbia River. (0252-1 [McCollough-Howard, Celeste])

**Comment:** Idaho's INL should not be considered an option for storage. It sits on top of a huge aquifer which, if polluted, would mean that a huge breadbasket of this nation would suffer

radioactive contamination--too great a risk for us to take. Battelle and Governor Otter's consideration of extending storage for "research" and employment purposes is not the will of this state. (0214-1 [Monsees, David])

**Comment:** Environmental analysis ordered by the Court must be properly incorporated into the re-licensing of Indian Point as well as all other nuclear power plants located across the country. (0001-5 [Anonymous] [Butler, Edward] [Evans, Michael W.] [Flowers, Bobbie] [Gilbert, Valerie] [Levey, Laura] [Malina, Matt] [Neiman, Laura] [Puca, Rob] [Richkus, John] [Tignanelli, Doreen] [Valentine, Jennifer] [Varekamp, Patrick])

**Comment:** Please not only exclude spent fuel storage from IP [Indian Point] but also do not re-license it. (0026-2 [Garner, Lowell])

**Comment:** The U.S. Court of Appeal's decision forces the NRC to address the risks of nuclear waste disposal before any U.S. nuclear plant, including Indian Point, may be licensed or re-licensed. (0030-3 [Flanagan, Lynn])

**Comment:** Without dwelling on the issues of safety within the nuclear power plants themselves, but seriously examining the spent nuclear rod issue, we recommend to the Panel that it deny the relicensing of Units 2 and 3 of the Indian Point Nuclear Power Plant at Buchanan, New York. (0031-1 [Morrison, George J])

**Comment:** Indian Point Nuclear Plant is a danger to our community. I trust you will move forward and close it down promptly and we can stop the poisoning of our river and land and go forward with safer energy solutions. (0034-1 [Pasquale, Elizabeth])

**Comment:** As far as I know this plant [Indian Point] is not really necessary for the energy resources needed in the area, but instead posts severe risks to the health and possibly even lives of the many people and fauna surrounding it. Toxic waste is leaking into the ground water, the Hudson river flora and fauna is suffering from careless and outdated environmental techniques, evacuation plans are outdated and unworkable. The plant may pose a serious potential target for terrorists considering not only the dense population in its immediate environment, but also the proximity of America's military academy, which is constantly producing future military leaders as well as employing some of the currently finest officers and their families. The consequences of a major disaster or terrorist strike would also affect populous NYC. In all these perspectives it is abominable that the owners of Indian Point are not held to work their plant with up-to-date environmental and safety technology. (0036-1 [Shakarian, Jana])

**Comment:** With so much at stake in terms of lives, environment and property, the NRC should take the community's concerns into account, and not re-license the continuing operation of this facility [Indian Point]. (0088-2 [Poole, Jesse])

**Comment:** The Court's decision requires the Nuclear Regulatory Commission to address the risks of nuclear waste disposal before any U.S. nuclear plant, including Indian Point, may be licensed or re-licensed. I urge you to address these real risks at Indian Point and all other nuclear facilities before we witness the next accident at a power plant or, heaven forbid, a terrorist attack, which we will all regret. This reckoning is long overdue. (0108-2 [Schlamm, Rhoda])

**Comment:** Given that there has not been any long-term solution for storing nuclear wastes, the storage of these wastes on-site should become part of the consideration for licensing and re-licensing of nuclear power plants. In particular for Indian Point, since it is now known those wastes are leaking into the local water supply. (0229-1 [Riggs, George])

**Comment:** I live in southern California, and we have tremendous concerns here about the San Onofre Nuclear Power Plant, about the wear that has taken place in the tubes of the steam generators, and the danger that, that poses in any kind of a restart before the changes -- before the fixing of that problem takes place. Right now there seems to be a movement underfoot to allow Southern California Electric to restart the plant at 70 percent power. This is what they are proposing, and we have not been able to have -- I forget the exact name of it, but it is an adjudicated hearing -- to find out exactly what is wrong and what needs to be done to fix it before they are allowed to restart. If there is any kind of restart allowed, it is going to lead to the potential for leakage. We -- the last time the unit was shut down, there had been radioactive steam that leaked on January 31, and since that time the repairs have not -- they have not been done to be able to provide any kind of safety. (0005-6-1 [HaLevey, Libbe])

**Comment:** Southern California had -- is -- well, California is home to such economic dependence -- excuse me, I'm not saying this correctly, let me start this again. Southern California has got one of the largest agricultural economies in -- certainly in the country, if not in the world. If there is any kind of radioactive release -- substantial radioactive release from San Onofre, it has the potential because of offshore winds that blow onshore -- that's always the direction it goes in, we've got charts that show where the radiation would go, it would destroy the agricultural economy of this state to say nothing of what it would do to the land, to the people, and all this here. You can't take risks with the restart of San Onofre. It cannot be done until and unless the repairs are made, and they must be made first. You can't allow Southern California Electric to restart. (0005-6-2 [HaLevey, Libbe])

**Comment:** Calling for an adjudicated response to San Onofre's nuclear plants safety issues. (0203-1 [Cash, Joy])

**Comment:** NCTC is an "affected tribe", the PG&E nuclear power plant located between Avila Beach and Morro Bay California, is built on top of NCTC's Ancestors village site. All the land and ocean around the power plant is Sacred to the Chumash Peoples. The Chumash Peoples have live along the Central California Coast for over 15,000 years. The Chumash village at the power plant site dates beyond 9,000 years. The Chumash have live and been a part of this land forever...

NCTC does not support the re-licensing of this nuclear power plant, the potential for a catastrophic disaster along the most beautiful coastline along the Pacific Coast is far too much of a risk for all the peoples, animals, and plant nations that live or would be effected. The power plant was built on 13 or more faults, the interactions of all the faults with the San Andreas faults are a blueprint for disaster. NRC needs to make good decisions; decisions that protect all living things. (0284-1 [Collins, Fred])

**Comment:** Well, I guess my concern is I'm about 35 miles from North Anna in Virginia, and I know that the plant's design was exceeded by our 5.8 earthquake back in 2011. And looking at documents and papers, it looks like they want to do -- Dominion wants to do a combined license for a third reactor, and my concerns obviously are with the recent reports about landslides happening 150 miles away from the epicenter, which the epicenter was about 11 miles from

North Anna, and we had 450 aftershocks. So, I mean, are we actually -- or should I rephrase that -- is the NRC going to allow Dominion to place a third reactor on a fault line? (0005-3-3 [Gray, Erica])

**Comment:** For decades, Riverkeeper and other organizations have had no confidence in assertions by the nuclear industry and various regulatory agencies about nuclear waste--now a federal court has agreed. It is imperative that we use this opportunity to halt the industry push for a quick and dirty solution and inject some sanity into the debate on nuclear energy and radioactive waste. (0001-1 [Anonymous] [Butler, Edward] [Evans, Michael W.] [Flowers, Bobbie] [Gilbert, Valerie] [Levey, Laura] [Malina, Matt] [Neiman, Laura] [Puca, Rob] [Richkus, John] [Tignanelli, Doreen] [Valentine, Jennifer] [Varekamp, Patrick])

**Comment:** Nuclear waste is as lethal as a waste product gets. Regulations, security and monitoring are critical to control its accidental release. (0057-1 [Steiner, Danny])

**Comment:** Once again the NRC is demonstrating that it has been captured by the nuclear industry. (0114-1 [Swanson, Jane])

**Comment:** And if you really want to solve this problem of getting rid of 70 years of waste, I think the NRC really needs to drop the secrecy veil and open up to the smart minds of the world. Because we can fix this, there is a way, but it's going to take us working together. It's not going to take a Nuclear Regulatory Committee working in a veil of secrecy, which is what's gone on for many, many years. It's time to stop and do the right thing. (0118-20-2 [Kerr, Julius])

**Comment:** Just put the people of your country AHEAD of any contributions made by the Nuclear Industry. (0149-1 [Straw, Sara])

**Comment:** The public have never been truly informed or consulted. Decision makers are fallible and may already have sealed our fate. Shame. (0220-2 [Deutsch, James])

**Comment:** Please, NRC, stop being a nuclear energy promoter and protector; instead protect the people. (0231-3 [Henry, Beth])

**Comment:** And, please, enforce such regulations as you do have! (0243-2 [Fast, Wendy])

**Comment:** The NRC must remind itself as it embarks on this long overdue EIS about spent reactor fuel that its duty is to the people, not to the corporations that it licenses. This is not an issue of economics upon which decisions are made to eliminate options on the basis of excessive cost to the nuclear power industry. That industry has been getting away with avoidance of its real costs to our world, our environment and our security for too long. This is a matter of national security and nuclear power has not ever made us more secure, quite the opposite. Nuclear technology has weakened our nation and made the whole world less secure. As long as we are creating more nuclear waste our nation and NRC are not facing up to reality. (0262-10 [Andrews, Richard])

**Comment:** The NRC must increase the strength of its regulations and the oversight of its enforcement mandates. The expense of enacting more stringent regulations should not be a factor in establishing the safest, most confident operation of the nation's nuclear reactors and their radioactive waste storage systems. (0277-10 [Roskos, Laura])

**Comment:** The nuclear industry made the waste and profitted from nuclear power. They should be responsible for storing and managing it with strict and comprehensive government oversight. (0290-7 [Craig, Anne])

**Comment:** The NRC's job should be the public's interest - its health, safety and welfare - in light of the fact that the production of electricity through nuclear means presents a clear, present and on-going danger. (0290-8 [Craig, Anne])

**Comment:** Publicly reported, independent annual reviews of storage facilities/methods should be required. (0314-2 [Riley, Christine L])

**Comment:** I must say that the NRC has come to be viewed as an agency that is "fully captured" by those who it is supposed to be regulating. Decisions made by the NRC are viewed very skeptically by the public. Here you have an opportunity to prove that you really are regulating and you really do have the best interests for the health and safety of the public at heart and in mind as you decide on the safest way to handle the existing and future waste produced by our nation's reactors. (0316-2 [Lawton-Singer, Cynthia])

**Comment:** The nuclear power industry has a history of not being forthright with the public regarding the risks of the radioactive materials used to create such power. Our only hope is that the Nuclear Regulatory Commission will take seriously its mission to protect and inform the public. (0336-6 [Warshauer, Meira])

**Comment:** I would like to comment on the nuclear waste issue concerning my local area and country wide. I am an Environmentalist, and would like to promote eco-responsible energy sources like solar, wind and geothermal. I also understand we this will not happen overnight, and am willing to tolerate responsible nuclear power plants with total transparency and very strict regulations, and if they start recycling their nuclear waste (like other countries). I am also willing to tolerate responsible eco-fracking (if deemed safe) with very strict regulations and total transparency. I feel my governments first responsibility is to protect its citizens from reckless capitalism (electric, oil & fracking company's), even if in the short term it is good for our economy (jobs). We need to invest into a long term plan to become an eco-energy country, and become a leader in exporting our technology to the world. These are the high paying eco-jobs of the future. (0002-1 [Levine, JR])

**Comment:** There is something called a CANDU for Canadian Deuterium Uranium nuclear power plant. The main claim in favor of it is that it can make good use of most of the leftover uranium in a spend conventional nuclear power plant fuel rod. (0003-3 [Adams, Grace])

**Comment:** We really need to replace BOTH fossil fuel and nuclear power with renewable energy, like wind power, solar power, geothermal power, and some bio-diesel from algae for liquid fuel for monster trucks and trans-ocean flights. (0003-5 [Adams, Grace])

**Comment:** ...we can and will implement renewable energy solutions to replace dirty nuclear fuel. (0021-3 [Zigmund, Sean])

**Comment:** Solar, wind, hydrogen and free energy are the forms of energy that we must move toward. Nuclear energy is part of an old paradigm, an old way of thinking, an old world. (0039-1 [Didrichsen, Susan])

**Comment:** We need to develop a sustainable energy plan that is in sync with the systems of the earth: water, weather, seismic activity - and with the life forms that inhabit our planet. (0049-9 [Laramie, Eve])

**Comment:** I am for Solar and for Wind power to replace this dangerous power generation process. (0057-2 [Steiner, Danny])

**Comment:** We need to put ALL of our efforts into developing clean, green, renewable energy sources. (0070-3 [Selquist, Donna])

**Comment:** We are in the age of safe renewables and this is where they emphasis should be. Waste is a huge issue that does not seem to have a solution. Therefore, we should not be creating any more from any new plants. (0079-1 [Haasch, Jane E])

**Comment:** Furthermore nuclear power plants are dangerous. They should be systematically shut down and replaced with power plants that utilize renewable resources for power, such as wind and solar. (0110-1 [Johnson, Alaina])

**Comment:** We need to move on to wind power and solar power which has absolutely no waste product. That's the direction we need to go. And I think the NRC knows it. And I'd like to see these guys get jobs in solar power and wind power and keep on going. (0119-11-4 [Kerr, Julius])

**Comment:** When solar energy is something that will work and it's cheaper than nuclear energy. So why keep doing the nukes, gentlemen? Let's stop the nukes. Let's move to solar energy. Let's move to wind energy. I'd be glad to have wind energy in my backyard or solar panels. (0119-13-2 [Kerr, Julius])

**Comment:** Better yet, let's finally shut down all reactors and turn entirely to a green/sustainable/clean way of living and supplying energy. It will help save our planet, us, and fuel our flailing economy. (0124-3 [M, Teresa])

**Comment:** Most importantly - stop producing it! Time to go to solar and wind and only clean, safe, renewable sources of energy. (0134-2 [Warren, Barbara])

**Comment:** Move to solar, wind and safer, cleaner, and greener forms of energy! (0135-1 [Renn, Melissa])

**Comment:** stop the nuclear waste and go green energy... (0155-1 [Jennings, Sid])

**Comment:** If it is true we, humanity, possesses an Anti-Matter device, use it to get rid of all Nuclear Waste. Close all Nuclear plants and promote renewable energy sources, such as the sun and wind. (0181-1 [Crowley, Loretta])

**Comment:** ...WE SHOULD BE MOVING AWAY FROM NUCLEAR ENERGY AND TOWARD RENEWABLE GREEN ENERGY TECHNOLOGIES. (0194-4 [Selquist, Donna])

**Comment:** Sierra Club supports sustainable energy alternatives that do not harm the environment. (0213-1 [Taylor, Wallace])

**Comment:** In discussing the alternative of discontinuing production of spent fuel, the EIS should consider how renewable energy can replace whatever current or future energy needs would have been supplied by nuclear power if nuclear power is discontinued as an energy source. Numerous studies have shown that we can generate all the energy we need from renewable sources with a comprehensive transmission and distribution grid if we will adopt policies supporting that vision. (0213-5 [Taylor, Wallace])

**Comment:** Renewable energy can meet the energy and capacity demands of the country, combined with a program of energy efficiency and conservation and expansion of the transmission grid. Most states, including Iowa, have energy efficiency programs subject to public utility regulation. Likewise, many states have renewable electricity standards requiring that a certain amount of the energy consumed in the state be from renewable sources. There are other policies, including feed-in tariffs, tax credits, loan programs, etc., that should be adopted to encourage the expansion of renewable energy. The waste confidence EIS should analyze all of these issues in examining the alternative of stopping the production of spent fuel by not permitting new nuclear reactors and closing existing reactors. This would lead us to a renewable energy future and away from the production of more radioactive nuclear waste. (0213-6 [Taylor, Wallace])

**Comment:** Other developed nations, such as Germany, are shutting down their reactors and emphasizing renewable energy. (0227-2 [Murtha, William])

**Comment:** I believe we need to invest in cleaner fuels: wind power, solar panels, etc. (0255-1 [Foster, Tracy] [Graham, Roger])

**Comment:** The future is with renewable energy and I will be happy for my taxes to subsidize solar, wind and geothermal. (0258-4 [Homer, Deanna])

**Comment:** We have viable positive alternatives that can much more effectively and safely resolve our needs for electrical power and for national security. To continue down the path of nuclear technology is a failed path. Those that continue on that path are simply in denial of reality. (0262-1 [Andrews, Richard])

**Comment:** The alternative energy analysis should examine more sustainable energy solutions - energy conservation, efficiency, and renewables such as solar, wind and tidal power. The time factor for implementation is also critically important in a warming world, affected by climate change. Conservation and efficiency can be rapidly deployed, whereas nuclear reactors take decades to come on line and produce electricity. (0269-16 [Warren, Barbara])

**Comment:** Plenty of economically viable, environmentally preferable alternatives to nuclear power exist such as conservation, energy efficiency, wind, solar, tidal and other green technologies. These must be explored and compared to nuclear energy. (0269-2 [Warren, Barbara])

**Comment:** An alternative is reasonable when it provides safety and avoids environmental harm. This has NOT been the case in the current EIS for the WS LEE Nuclear Station proposed by Duke Energy. No investigative figures to support their dismissal of solar as an alternative to nuclear were shown. (0274-3 [Sorensen, Laura])

**Comment:** A public comment by Dan Gamble during the EIS hearing concerning solar energy as an alternative at this site needs to be re-examined by the NRC. (Public Comment March 6, 2012 tracking #80fd04c4) Also, Duke Energy must be required to provide proof of a detailed site analysis on solar and wind energy production at the proposed nuclear plant site. (0274-4 [Sorensen, Laura])

**Comment:** Oft omitted from the analysis is a relative cost-internalized comparison of energy alternatives from cradle to grave which actually compare a complete package view of the total cost. By compartmentalizing phases of facility operation, shutdown and storage, we don't get a total package view allowing relative comparison of nuclear operations with other energy alternatives. (0297-2 [Tibbits, Kathy])

**Comment:** Solar and wind, along with geothermal can be enough. (0303-2 [Kulp, Judy])

**Comment:** Pilgrim has a number of site-specific security issues, given its vulnerability from the sea and the fact that it is within 37 miles of Boston's [inaudible]. According to recent evidence and testimony by the town's emergency planning director, despite several incidents in the past two years, there is still no emergency plan in place for a hostile incident by land or by air in connection with Pilgrim's waste storage facility. (0004-23-7 [Sheehan, Margaret])

**Comment:** I repeat and extend my comments on the adequacy of money, manpower, and emergency needs being in place at the time that they will be needed. Money is the first item that I call attention in this submittal. Although a business model is not presented anywhere in the emergency documents, there is an underlying assumption that money will emerge sufficient to the actions needed in any emergency. (0056-1 [Lewis, Marvin])

**Comment:** The mess from the last storm [Sandy] remains at the shore and in NYC. Are we ready to handle a radioactive mess if there are failures of HOSS casks and where can I find a NRC guide to handle emergencies along this line? I am sending this page of comments in as threatening storms continue to come Eastward into the Jersey shore. I would very much like and need answers as I go to Jersey many weekends. I shall not invite my friends, but allow them to come if they are knowledgeable of the shortcomings of the emergency resources. (0056-3 [Lewis, Marvin])

**Comment:** It seems that the plans for evacuation and emergency contingencies at Indian Point (and many other nuclear facilities) are at best outdated, and at worst, impossible. (0106-1 [Maiorca, Michelle])

**Comment:** In light of Fukushima, there was a ten-mile setback issue. And then there was a issue brought out that they wanted the American people to move back 50 miles away from Fukushima, if I remember correctly. I think maybe in the scoping process, we ought to look at the fact that we may need a 50-mile radius away from any nuclear power plant. (0119-11-1 [Kerr, Julius])

**Comment:** I can't recall ever hearing anything, particularly in that radio venue, about warnings from nuclear facilities that are close by or 50 miles away. And I certainly have no information whatsoever on what to do if one of those were to be given to me -- if I were to receive a warning or notification that there had been an accident. I certainly don't have an evacuation route in my head or know where to go if I leave my home. And if that's not supposed to be a part of the EIS, I guess I'm thinking that I hope you guys -- I really appreciate your openness to all of these



things that we are talking about with you. But I hope that if an EIS is not the appropriate place to be getting information that we need that the NRC with its mandate to protect our safety and our health would begin supplying that information in some other way, if not through an EIS. (0119-14-1 [Rivers, Alicia])

**Comment:** I am concerned about the huge amounts of nuclear waste being stored near my home in Charlotte, NC. I have been told -- in confidence -- by Duke Energy employees that these facilities are much more dangerous than anyone admits. I have also been told that, in case of a disaster, we could not escape because of too few roads -- we'd have to "shelter in place." And of course we wouldn't be able to prove it years later that our cancer or leukemia came from radiation exposure. How convenient for Duke Energy. (0231-2 [Henry, Beth])

**Comment:** This is probably already covered but I'll mention it anyway: Emergency procedures should be included in the event of an off-site release of radionuclides above authorized limits. These may already be captured in existing licenses. (0246-5 [Kohler, Joseph])

**Comment:** The consequences of a spent fuel catastrophe should be examined in the EIS, as well as the emergency planning and recovery implications - including federal agency involvement and assistance to states and local governments. (0269-4 [Warren, Barbara])

**Comment:** The EIS should evaluate the time, effort, and response necessary to respond to such an incident. (0291-1 [Harlan, Thomas])

**Comment:** Another important consideration (and one that underlies the entire need for the EIS) is emergency response. In the event of an incident, what are the necessary steps to contain the incident and remediate against the impact of the same. (0291-15 [Harlan, Thomas])

**Comment:** On a final note, while the City, in its comments set forth above, intimates that there should be a more robust analysis of an emergency response plan, it firmly believes that such an analysis must occur. Without an analysis of the emergency response plan, there can be no containment or mitigation analysis as a result of any leak, spill, or other disruption of the spent fuel storage systems. (0291-26 [Harlan, Thomas])

**Comment:** I want to focus on a subcategory that you'll be looking into, which is Boiling Water Reactors Mark 1 and Mark 2, like my neighborhood reactor. And the impact of adding water to spent fuel pools, to the spent fuel pool in a severe accident situation. The Union of Concerned Scientists pointed out that if these types of reactors with a spent fuel pool, in the reactor building, and all the emergency pumps that protect the reactor core from overheating, are located in the building basement. So that water evaporating from the spent fuel pool would, after condensing, drain into the basement. In addition, if the rate at which the water was sprayed into the spent fuel pool exceeded the rate at which the water was draining from it, the pool would overflow and drain to the basement, knocking out those systems. And in a situation where you're adding extra water, you're doubling up your trouble. (0118-7-1 [Lampert, Mary])

**Comment:** it seems that it's necessary to look at the design of the electrical equipment inside these BWRs to assure at what temperatures, pressures and humidity and radiation ranges they have been certified to continue operating. Because it would seem, it would not take long, maybe just a couple of hours, a few days, for the electrical equipment to fail under the high temperatures and humidity expected when a spent fuel pool is heating up and releasing very

high temperatures and high humidity. I think this is a scenario that has to be analyzed and the information provided. (0118-7-2 [Lampert, Mary])

**Comment:** I live near a Mark 1 reactor that's on a flight path for a major airport - there's no airspace restrictions. The only thing between a 747 and the SFP is a thin sheet metal roof. I have no confidence that it's safe. (0242-1 [Agnew, David])

**Comment:** I support Pilgrim Watch's submission in response to NRC02012-0246. I live within eyesight of Pilgrim NPS, a Mark I BWR, that is most vulnerable to a pool fire with its densely packed pool. (0250-1 [Hanes, Fenna])

**Comment:** This EIS should examine solutions to the risks of the GE Mark I and II designs and should prioritize emptying these pools. (0281-6 [Fuchs, Katherine])

**Comment:** Department of Energy is guilty of environmental justice violations at Yucca Mountain, because it's western Shoshone Indian land and they did not want to host a repository. (0118-17-4 [Kamps, Kevin])

**Comment:** There should be dedicated funding to local and state governments to independently monitor these sites [hardened on-site facilities and fuel pools]. (0004-14-9 [Zeller, Lou])

**Comment:** In the analysis, I'd like to see some attention made to legislation and its potential impact. In particular, one of my concerns is being an advocate of low density pool storage for BWRs is, what would be the effect if NRC actually pushed and supported for the Nuclear Waste Policy Act to be amended so that the monies there could also be spent by Licensees for going to dry-cask storage for all assemblies, more than five years out of reactor. That is something I think in looking toward and analyzing safety on pool storage. (0118-26-2 [Lampert, Mary])

**Comment:** Instead of focusing on offsite storage, it makes more sense to focus first on reducing risk onsite by amending the Nuclear Waste Policy Act (NWPA) of 1982.13 The NWPA established a fund composed of fees levied against electric utilities (passed on to consumers) to pay for the costs of constructing and operating a permanent repository. The fee is one mill per kilowatt-hour of nuclear electricity generated. The Nuclear Waste Fund receives almost \$750 million in fee revenues each year and has an unspent balance of \$25 billion. The fund currently is restricted for developing an offsite repository. It seems prudent and reasonable for NRC to encourage Congress to amend the act so that the fund also can be spent for safer onsite dry cask storage to protect the public over the many decades before an offsite repository is available. The EIS should include this option. (0148-34 [Lampert, Mary])

**Comment:** Reactor owners have been contributing toward the costs of building and operating a permanent, deep geologic disposal facility for irradiated fuel rods. Currently, however, a designated location and safe disposal technologies remain hypothetical. In the meantime, we believe the NRC and the nuclear power industry should seek to convince the Congress to make some of those funds available now for the enhanced design and manufacture, deployment, and oversight of highly fortified on-site storage casks nationwide. (0323-14 [Birnle, Patricia T.])

**Comment:** I think the decision by the court was an unfortunate one, and this is something that we have to live with, however, but in trying to get through this process of coming up with what would seem to be an acceptable waste confidence rule, a couple of years are going to be wasted, perhaps, assuming that this has some delay in getting reactors either licensed or

licenses extended. That may not be the case, but if it is, the effect of this court's decision is going to be perhaps some widespread environmental damage and damage to our society. If you assume that this last hurricane is somehow the result of global warming, I think a prudent person would say, "We don't have any time to delay." (0005-2-3 [Meadow, Norman])

**Comment:** These dry casks that are piling up all over the United States, and the rest of the world for that matter, which at the moment, nobody wants, could be configured into a low cost giant electrical power plant, or used to heat large buildings directly. (0054-1 [Behling, Steve])

**Comment:** It seems obvious to me, that making an attempt to re-use these old cores would solve several problems at once. (0054-2 [Behling, Steve])

**Comment:** If you need to temporary stored nuclear waste use the White House! (0122-1 [Monroe, Victoria])

**Comment:** Make use of our Military Testing Bases and or our MOA's (Military Operation Area's) out west, which are really huge tracts of land (think tens of thousands of acres) used ONLY by the military and already secured by them 24/7! (0163-1 [Leichtling, Don])

**Comment:** An ideal outside coating for these casks would be similar to the spray-on "bed liner" used for pickup trucks that not only prevents rusting and or damage for the life of the vehicle but would also seal the casks to prevent leakage of any kind! (0163-3 [Leichtling, Don])

**Comment:** Perhaps sometime In the future, a safe low cost solution like lifting it all into space via a space elevator and then shoving it in an orbit that will send it into the SUN for final recycling will present itself...(0163-6 [Leichtling, Don])

**Comment:** Area 51 (which does not even exist officially) contains huge tracts of land that has already been used as a nuclear testing site (and is still contaminated and is now off limits to all but a few forever) would allow all this material to effectively disappear...(0163-7 [Leichtling, Don])

**Comment:** Spent fuel should be encased with ceramics as the French have been doing for decades. It is expensive, but deems the fuel rods safer from exposure over the millenia. (0179-1 [Roberts, James])

**Comment:** Please change the way you store spent fuel from nuclear power plants! (0188-1 [Israel, Marcy])

**Comment:** Initiate a 'Manhattan Project' to learn how to turn nuclear waste into a benign substance. This is necessary because it is obvious that there is no way to guard the waste for the virtual eternity required for natural decay to eliminate the danger. (0295-5 [Larson, Dennis])

**Comment:** Our non-profit Farallon Project has data on two technical solutions to radioactive waste. I have been involved in that since the 80's, when we stopped the Navy from dumping old nuke subs into the ocean. The first is Seacrete, a former patented invention that uses seawater and solar energy to create a material which can safely encapsulate radwaste anywhere! The second is Transmutation, invented at Arizona State University, that can change any radwaste into Iodine which is active for only 30 days! I have worked with Sen. Boxer years ago on this, relevant to 50,000 barrels of radwaste that were dumped into the ocean off San Francisco. I

have contact with two millionaires who gave donations for our project, and could be into a possible work with your efforts. (0309-1 [Golich, Conrad])

**Comment:** The Commission must assess the potential impact of the government's failure to establish permanent repositories in the future. (0038-7 [Goze, Yunjoo])

**Comment:** Finland is building permanent storage underground designed to withstand THE NEXT ICE AGE. It is absolutely negligent that the United States has NO long term (thousands of years) storage plan for nuclear waste. The NRC and entire nuclear power industry should be focused on this issue prior to any go forwards in relicensing or new plants being built. And it should be done at their corporate expense, not at the ratepayer's or taxpayer's expense. Not funded by governmental corporate loopholes. (0055-2 [Enebo, Karin])

**Comment:** Yucca Mountain doesn't seem to be gaining any traction. (0174-1 [Crockett, Margaret])

**Comment:** Another solution needs to be found, and the spent fuel rods should not be kept onsite! (0174-2 [Crockett, Margaret])

**Comment:** The delay [in finding a permanent repository] has required plants to expand storage pools and to pack SNF [spent nuclear fuel] more densely within them. The lack of progress on a permanent repository has caused considerable uncertainty regarding the environmental effects of temporary SNF storage and the reasonableness of continuing to license and relicense nuclear reactors. In addition, the Blue Ribbon Commission on America's Nuclear Future has said that we may already be at a point where more than one permanent repository is necessary. As noted in *New York v. NRC*, at this point there is no possibility of finding even one permanent repository in sight at this time. (0213-3 [Taylor, Wallace])

**Comment:** Failure to secure permanent disposal. The Court has asked the Commission to evaluate the environmental effects of failing to secure permanent disposal. The scenario that the court has asked the NRC to evaluate is in conflict with US policy, law and international treaty. Under the Nuclear Waste Policy Act of 1982, as amended, it remains national policy that the US government "has the responsibility to provide for the permanent disposal of spent nuclear fuel in order to protect the public health and safety and the environment..." [Sec. 111. (a)(4) of the NWPA] Congress is actively working on legislation to implement a program based on the recommendations of the Blue Ribbon Commission that will establish a replacement for the Yucca Mountain Program. Meanwhile, the Department of Energy is still collecting fees from utilities to fund a future spent fuel disposal program that, at the end of fiscal year 2012, contained \$38.7 billion. In addition, the US government has ratified the IAEA's Joint Convention on the Management of Spent Nuclear Fuel and the Management of Radioactive Waste, which commits all Contracting Parties to provide for disposal of spent fuel, if considered a waste, in order to prevent undue burdens on future generations. (0226-2 [Bell, Michael])

**Comment:** Finding 1 should clearly be affirmed based on the wealth of evidence in the DOE license application for Yucca Mountain and the NRC staff review material regarding that license application that shows a repository can be developed that is safe and environmentally acceptable. (0244-21 [Lacey, L. Darrell])

**Comment:** Finding 2 regarding the Commission determination that a repository will be available "when necessary" is problematic based on this administration's recent decisions attempting to terminate the Yucca Mountain Program. The administration's actions compound an already

tenuous situation; lawsuits have already found that the government is responsible for its failure to take the wastes for disposal in repository as required by contracts put in place as a result of the Nuclear Waste Policy Act. Because the government is paying damages to the utilities for its failure to open the repository and take the wastes, arguably, "when necessary" is already past. (0244-22 [Lacey, L. Darrell])

**Comment:** Final disposal must happen. The NRC cannot be a party to further deferral of this absolute necessity. (0262-2 [Andrews, Richard])

**Comment:** While the Nuclear Waste Policy Act (NWPA) lays out the nation's plan for nuclear waste management, that plan is not being followed. Therefore, we continue our plea for the federal government to carry out its obligations by taking prompt action to remove and dispose of used nuclear fuel and high-level waste from commercial nuclear power plant sites. (0268-1 [Wright, David A.]

**Comment:** The federal government has a legal and moral obligation to move forward on a repository program, and used nuclear fuel and high-level waste must not be indefinitely stored. As mentioned previously, the federal government is responsible for taking action in accordance with the provisions of the NWPA. The best way to avoid further delay and convince the public that the federal government takes its obligation to solve this national problem seriously is for the NRC to immediately resume its key role in the federal disposal program - review of the license application for a repository at Yucca Mountain. (0268-5 [Wright, David A.]

**Comment:** Make clear to DOE that the status quo is unacceptable, that it expects DOE to demonstrate near-term progress toward fulfilling its unambiguous obligations under the law so that extended on-site storage is not needed. (0268-6 [Wright, David A.]

**Comment:** Resume, and seek any necessary funding to complete, the review of the license application for Yucca Mountain that was submitted by DOE in 2008. (0268-7 [Wright, David A.]

**Comment:** NRC has an important role in assuring the safety of nuclear power facilities, including the back end of the nuclear fuel cycle. In preparing its new EIS on Waste Confidence NRC must provide the public with detailed information on the consequences of lengthy delay in achieving the emplacement of used nuclear fuel in a geological repository if development of the Yucca Mountain site is no longer to be national policy, as set forth in current law but as strongly opposed by an Administration just beginning its second four-term term in office. (0278-1 [North, D Warner])

**Comment:** This EIS must address the substantial and real consequences of political inaction. As even this Administration has admitted, there is nothing scientifically wrong with the Yucca Mountain repository site. Politics is the problem and this EIS needs to clearly articulate the price that our society has to pay when politics trumps science. The NRC staff should also explore methods by which our Nation's waste management practices can be freed from the yoke of political meddling. If such an explanation is not forthcoming, future history may be doomed to repeat itself, as our country tries to develop either a Central Interim Storage Facility or different repository site. We recognize that the NRC has been put in this difficult situation by this Administration's political position; however the NRC must perform its NEPA responsibilities and examine the significant long term environmental consequences caused by politically motivated inaction. (0280-8 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Weart, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** I cannot resist the temptation to remark that the careful consideration of these aging efforts, although well worth doing under any circumstances, would not have taken on such an unnecessary and increased emphasis had the Administration followed the law. Actually, if the Administration had followed several laws, among them: The Atomic Energy Act, the National Environmental Policy Act, the Administrative Procedures Act, and most obviously, the Nuclear Waste Policy Act. Yet by pushing the Yucca Mountain Project "off the table," the Administration has created an impasse of biblical proportions. (0282-2 [Haughney, Charles])

**Comment:** The action to stop our only repository program should have been preceded by a Programmatic EIS prepared by the Department of Energy (DOE). Such an EIS would have properly considered: 1) the reasons that Yucca Mountain needed to be "off the table;" 2) environmental and safety considerations associated with all manner of spent fuel storage; and 3) a realistic approach to developing a second repository. Instead, as a result of the Administration's affront to nuclear safety in abandoning Yucca Mountain, we have the DC Circuit directing the NRC to do DOE's job. (0282-3 [Haughney, Charles])

**Comment:** Forgive my digression, but it leads to my second comment. As a part of its abandonment of Yucca Mountain, the DOE established the Blue Ribbon Commission on America's Nuclear Future (BRC). The BRC members took their assignment very seriously, conducted their deliberations in an open manner, and developed a thoughtful report on time and under budget. The Staff should make good use of the BRC report, with its well-developed conclusions and recommendations. As of this writing, the Administration has wrung its hands and not bothered to explain to the public how it intends to implement the BRC recommendations, if at all. I urge the NRC Staff not to wait for the DOE. Rather, use the BRC report on its own merits as you develop this EIS. (0282-4 [Haughney, Charles])

**Comment:** As you consider these BRC-related recommendations involving the Fed Corp and consensus-based siting, you might be tempted to exclaim that those considerations are outside the scope of this EIS. Using conventional thinking, that may be true. But someone in this government needs to squarely address the entrenched political impediments to safely managing this waste. Why not the NRC staff? (0282-7 [Haughney, Charles])

**Comment:** Finally, NSPM and the PIIC urge that the NRC, in scoping the Waste Confidence EIS, acknowledge that the uncertainty as to when the Federal Government will meet its obligation to dispose of the utilities' spent nuclear fuel is the underlying cause of the remand by the U.S. Court of Appeals for the DC Circuit in *New York v. NRC*. The NRC should similarly acknowledge that this uncertainty is due to the Administration's unilateral decision to terminate the Yucca Mountain program and to the failure of the Congress to provide adequate funding for the Yucca Mountain program. The NRC should acknowledge that the DOE and the Administration, having ended the current nuclear waste program, have failed in their obligation to put in place a new program. (0292-2 [Glass, Peter M.] [Mahowald, Philip])

**Comment:** NSPM and the PIIC submit that the EIS must also evaluate the underlying causes of the need to store spent fuel at reactor sites long after reactor operations have ceased. This would provide an explanation and context for why the EIS is needed. It also performs the equally important function of educating the public as to the reasons for the current nuclear waste dilemma. (0292-3 [Glass, Peter M.] [Mahowald, Philip])

**Comment:** Senator Harry Reid, a decades-long opponent of Yucca Mountain and the driving force behind the Obama Administration's decision to defund it, has deemed Yucca Mountain "technically and scientifically unsound." No explanation of his assessment has been given. Between 1983 and 2007, hundreds of scientific and engineering reports were written and 11 kilometers of underground drifts driven - at a cost of about 9 billion dollars - to determine the site's suitability as a repository for spent nuclear fuel. As a result of this work Yucca Mountain is one of the most thoroughly studied areas in the world with respect to its geology, hydrology, and paleoclimate. It is clear that the final work on Yucca Mountain which is almost done should be completed. **(0320-1** [Roseboom Jr., Eugene H.]

**Comment:** The PINGP and ISFSI are two of the most important issues for the Prairie Island Indian Community. The tribe was a Cooperating Agency for the development of the PINGP Unit 1 and 2 reactor license renewal EIS (license renewal approved by the NRC June 2011) and is currently a Cooperating Agency for the development of an Environmental Assessment (EA) for the pending 40-year ISFSI year license renewal application.

Although we are pleased that the NRC will be evaluating the environmental impacts of on-site nuclear waste storage, we remain concerned that this is just yet another update to the Waste Confidence Decision (WCD) and Temporary Storage Rule (TSR), with a conclusion that brings us no certainty or assurance that waste will ever leave Prairie Island. It bears reminding that when the ISFSI at Prairie Island was initially proposed in the early 1990s, it was to be temporary measure to keep the plant running and plant personnel working until Yucca Mountain could be opened. Our Tribe and others expressed concerns about the longterm storage of spent fuel in dry casks and the possibility that the waste would never leave Prairie Island. **(0321-1** [Mahowald, Philip R.]

**Comment:** The Department of Energy will soon provide its implementing strategy for the recommendations of the Blue Ribbon Commission on America's Nuclear Future (BRC) on re-establishing the stagnated nuclear waste storage and disposal program that with the support of the President, Congress and the American people that the NRC and all parties can all have true confidence that this material can be safely managed and eventually disposed of in accordance with both NEPA and NWPA. It is our wish that a re-vitalized disposal plan can be agreed to by policymakers, regulators and stakeholders by the time that the WCD EIS is finalized. **(0233-3** [O'Connell, Brian])

**Comment:** To cut to the chase, I recommend that the Staff fully ventilate the BRC recommendation that our nation's spent fuel and high level waste disposal program become the responsibility of an entity outside of the federal government. I urge you to develop a strong basis for creating a Fed Corp that has access and control of the Nuclear Waste Fund. And I urge you to develop and propose draft legislation to establish an effective and politically unhindered Fed Corp. The Fed Corp must be free from Continuing Resolutions, Fiscal Cliffs, Debt Ceilings, Earmarks, and the Congressional appropriation process. Otherwise the recent ride of the Four Horsemen of the Yucca Mountain Appocalypse (Reid, Obama, Chu, and Jazco) will likely be repeated at some future date; and a Central Interim Storage Facility or a Second Repository will be shoved off the table with equal political vigor. **(0282-5** [Haughney, Charles])

**Comment:** The BRC Report in Recommendation 2 addresses the creation of a new organization to implement the waste management program with the existing roles of NRC and EPA being preserved, "...but that steps be taken to ensure ongoing cooperation and coordination between these agencies." However, the Department believes a "one regulatory

agency" concept is the more appropriate organization for the long-term spent fuel and high-level-waste management program. (0294-1 [Bevill, Bernard])

**Comment:** Also, waste storage pools or facilities need to be designed or re-designed for their anticipated life, which absent a specific plan for relocation should be enough half-lives of the material to render it safe and harmless. Again, if replacement of elements is not feasible, then new repositories must be prepared that do meet these criteria, and the waste moved to them. In particular, waste repositories that are physically dependent on structures that may be subject to failure due to prior failure of an adjacent nuclear reactor, as apparently happened at the Fukushima plants in Japan, must be closed, and their waste relocated. (0225-2 [Filler, Matthew])

**Comment:** The Waste Confidence EIS need not assess the impacts of a disposal facility. However, we strongly believe that this EIS must broadly and fully assess the impacts of extended storage of spent fuel on any future geologic disposal facility and the associated transportation system. (0265-8 [Halstead, Robert])

**Comment:** What would be the advantages and disadvantages of extended storage (from 50 years to 300 years) on the design of a repository? How might this affect the selection of a site for a geologic repository? (0265-9 [Halstead, Robert])

**Comment:** For the repository post-closure periods, the EIS should evaluate the environmental impacts due to the potential loss of cladding as a barrier to the release of radioactive isotopes into the repository setting. (0280-3 [Barrett, Lake] [Fairhurst, Charles] [North, D. Warner] [Roseboom Jr., Eugene H.] [Weart, Wendell] [Weiner, Ruth] [Winograd, Isaac])

**Comment:** The EIS should analyze, in depth, impacts of deep geologic disposal of spent fuel. (0286-74 [Curran, Diane])

**Comment:** Failure to include in scope site specific issues to secure permanent disposal which have significantly different environmental impacts and costs based on site environmental issues, including site specific current and projected population densities, does not meet the specific deficiencies identified by the Court. (0296-5 [Shapiro, Susan])

**Comment:** The NRC has persistently claimed that irradiated nuclear reactor fuel can be stored safely at reactor sites until a permanent repository becomes available. I am afraid I have always lacked confidence in the NRC's confidence that a waste disposal site could actually be located soon enough to be developed safely enough to permanently isolate the nation's civilian irradiated reactor fuel. Or that a site could be located that would be accessible enough for the wastes to be safely transported there, and yet also be inaccessible enough to ward off the threat of terrorists while the fuel was being transported or when it was ultimately deposited. Does the NRC staff truly believe it is possible for permanently toxic wastes to be kept isolated from the biosphere for the requisite millennia? (0300-2 [Drey, Kay])

**Comment:** Regarding the long term underground storage of nuclear waste, there is strong international scientific consensus that disposal in a geologic repository is an effective and appropriate long-term solution. (0004-8-3 [Burton, Bruce])

**Comment:** A permanent storage site for spent fuel should be created before new licenses are issued and mature reactors are re-licensed. This should motivate congress to come up with a viable permanent solution. (0125-3 [Puett, David])



**Comment:** Permanent Storage: Establish concrete steps to achieve a permanent scientifically and politically acceptable permanent storage facility(s) based upon NRC's recognition that lack of progress on Yucca Mountain or any repository has resulted from technical, scientific and political reasons, not simply political as now claimed. (0148-5 [Lampert, Mary])

**Comment:** Also find a permanent storage facility to move much of this on-site storage that has piled up. (0158-4 [Hartman, Randall])

**Comment:** A permanent nuclear repository is a must. (0190-1 [Kuehn, Richard])

**Comment:** It's time to find a repository for nuclear wastes, or close nuclear plants. It is too dangerous to have these unprotected wastes in so many places. (0209-1 [Kriesel, Robert])

**Comment:** The planned additional NEPA analyses will be sufficient to satisfy the remand in the current proceeding. However, waste confidence would be bolstered by tangible progress toward a repository and other spent fuel management options. Short of a reversal of actions to shutter Yucca Mountain or a concerted effort to pursue an alternative path, real progress will remain elusive. (0276-4 [Blee, David S.] [Knox, Eric])

**Comment:** During the process of closing down the nation's currently operating reactors, and those that have already been closed, we urge the NRC to be vigilant in monitoring the status of the high and low level radioactive waste present at every reactor site nationwide. Spent fuel pools and dry casks at operating and shut-down reactor sites cannot be considered safe unless and until all their radioactive wastes have been permanently isolated from the human environment. (0323-13 [Birnie, Patricia T.]

**Comment:** Some of the issues that I request that the NRC and Licensees address in this rulemaking include:

- Methane 'burp' is methane hydrates go to a gaseous state fast enough to cause a world wide explosion. (0009-5 [Lewis, Marvin])

**Comment:** We [members of the Women's International League for Peace and Freedom] urge you to refrain from asking Congress to legislate a political solution, and implore you --- at this time --- to minimize the transport of high-level radioactive waste on our highways, railways, waterways, and airways. (0277-3 [Roskos, Laura])

**Comment:** The legally responsible parties for planning and execution of the proposal must be identified within the scope of the EIS. Does DOE have full legal custody of spent civilian fuel in storage? What is the regulatory status of agreement states with respect to long term storage? Which agency is responsible for independent oversight of waste management operations? The scope should include an evaluation of the regulatory framework under which long-term management of spent fuel will be accomplished and which agency has what authorities. (0246-10 [Kohler, Joseph])

**Comment:** The draft EIS should carefully consider putting a mechanism in place for site-specific supplemental environmental review in relicensing activities. In some cases, many decades pass and significant changes in circumstances and environmental information occur

between licensing and relicensing activities. For example, increases in population in the vicinity of a nuclear power plant over the life of the original license could severely impact the timeliness of an evacuation in an emergency. Supplemental environmental review at relicensing would help to characterize these new constraints and provide the opportunity to develop necessary mitigation plans and monitoring commitments. (0272-3 [Weisenmiller, Robert B.]

**Comment:** NRC's Order (EA-12-051) provides no reasonable assurance. NRC now cannot assume otherwise in its analysis. The Order simply requires all licensees to have a "reliable means of remotely monitoring spent fuel pool water levels to support effective prioritization of event mitigation and recovery actions in the event of a beyond-design-basis external event." (Order, pg., 7) The Order incorrectly assumes that there are effective mitigation and recovery actions to prevent a pool fire in the event of beyond-design-basis external events. Specifically, the Order at 5 says that, "In the case of spent fuel pools, compliance with existing regulations and guidance presumptively provides reasonable assurance of safe storage of spent fuel." (Order, pg., 5) (0148-10 [Lampert, Mary])

**Comment:** NRC's Assumption That Operator's Will Be Capable to Add Water To The Pool During an Accident is Overly Optimistic: EA-12-05, for example, does not demonstrate what effectively can be done if the newly ordered spent fuel pool monitors show that: "(1) the level is (not) adequate to support operation of the normal fuel pool cooling system; (2) level is (not) adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck; and (3) level where the fuel remains covered and actions to implement make-up water addition should not longer be deferred." (Order, Appendix 2) (0148-11 [Lampert, Mary])

**Comment:** At these facilities, the spent fuel pool is located within the reactor building, and all the emergency pumps that protect the reactor core from overheating are located in this building's basement. Water evaporating from a boiling spent fuel pool would, after condensing, drain to that basement. In addition, if the rate at which water was sprayed into a spent fuel pool exceeded the rate at which water was draining from it, the pool would overflow and drain to the basement as well. Such an artificial tsunami could wreak as much havoc as did the natural tsunami at Fukushima by submerging and thus disabling vital emergency equipment. In other words, the operators could be forced to choose between two evils:  
(1) turn on the water sprays to save the spent fuel, but risk losing the reactor core; or  
(2) save the reactor core by not turning on the water sprays, but risk losing the spent fuel. The operators have to be provided with better options than picking which irradiated fuel to sacrifice.

The foregoing shows that currently and when Order EA-12-051 is effectuated that public health and safety is not protected because NRC's assumptions about U.S. operator's capability to mitigate an accident are unrealistically optimistic and that operator's ability to carry out mitigative measures can be severely degraded in an accident environment. Scoping must respond to the foregoing issues raised. (0148-16 [Lampert, Mary])

**Comment:** We must make sure that all temporary (and long term) storage of spent fuel, new fuel and radioactive waste materials, is well away from reactors to minimize any chance of overheating of spent fuel reaching and affecting any reactors... (0129-3 [VanWicklen, Betty J.]

**Comment:** Being military, U S Navy would now how to deal with terrorists. In particular, I wish you would ask them whether they would rather commit to helping you guard all the leftover conventional nuclear fuel rods from United States civilian nuclear power plants for the 3,000 years it takes them to settle down. (0003-4 [Adams, Grace])

**Comment:** Protect fuel pools: Irradiated fuel must be kept in pools for several years before it can be stored in a dry facility. The pools must be protected to withstand an attack by air, land, or water from a force at least equal in size and coordination to the 9/11 attacks. The security improvements must be approved by a panel of experts independent of the nuclear industry and the Nuclear Regulatory Commission. (0273-11 [Zeller, Lou])

**Comment:** Electricity production is not what NRC licenses; it is the production of this waste. This activity needs to include a Homeland Security assessment for compatibility with national security as part of this EIS. (0285-4 [D'Arrigo, Diane])

**Comment:** The scoping should include a very clear definition of what reasonable assurance is. One does not exist currently, and it's very important to understand that in terms of the long-term impacts of the waste confidence issue. (0004-25-2 [Shapiro, Susan])

**Comment:** A basis must be established as an enforceable and meaningful definition of "reasonable assurance" of "adequate protection of the public health and safety". To date no such definition exists. (0296-23 [Shapiro, Susan])

**Comment:** Also there are many considerations putting this rulemaking into unfair territory like the licensee hearings proceeding while the issues in this rulemaking have not been settled. (0223-2 [Lewis, Marvin])

**Comment:** Also, I think it's not reasonable, in any discussion, to suggest the public has an option to use the 2.206. And I would suggest that the staff reread or read for the first time, the record in the Adjudication Process on the two post-Fukushima orders brought by Pilgrim 1. Judge Rosenthal directed the NRC staff in this process, to look at 2.206s going back to 1975, and determine whether substantive relief had ever been granted. Of the 387 Directorate decisions that the staff reviewed, only 2, only 2, substantive relief was granted. Then if Staff came out and said that, well, there was partial relief or partial denial of 140 of the 387. Judge Rosenthal looked at few and he said, no, there was no substantive relief. I looked at 4, I couldn't be expected to look at all 140. Again, no substantive relief. And so, therefore, I just put the heavy burden on the staff to come up with a waste confidence decision this time that is right. Because the public does not have any other option to get substantive relief. (0118-11-1 [Lampert, Mary])

**Comment:** Nuclear reactors have already become the most expensive type of energy including the decommissioning of a plant. And they are subsidized. (0079-2 [Haasch, Jane E])

**Comment:** The EIS should include a full cost accounting study that accounts for the true costs associated with nuclear energy. Substantial and disproportionate subsidies are provided at the front end of nuclear energy - nuclear enrichment, nuclear reactors, weapons, research - and little funding at the back end for proper nuclear waste management. This results in the shifting of responsibility for nuclear waste and health, environmental and monetary costs onto localities, taxpayers and ratepayers. Full cost accounting requires all monetary and non-monetary costs to be included, no matter who is paying the bill. (0269-19 [Warren, Barbara])

**Comment:** The true costs associated with nuclear energy should be accounted for in the Environmental Impact Statement. The nuclear power industry is the recipient of substantial subsidies on the front end, while a number of monetary and non-monetary costs are shifted to

the public, especially for nuclear waste. These hidden costs must be accounted for via full cost accounting. (0269-6 [Warren, Barbara])

**Comment:** The Commission should establish a procedure by which the public will have an opportunity to raise, before an Atomic Safety and Licensing Board, site-specific issues regarding nuclear waste remaining at reactor sites following shutdown, at least for those facilities that received operating licenses or license extensions on or after December 23, 2010, when the Commission formally abandoned the position that it could establish a date by which a permanent nuclear waste repository would be available. (0275-17 [Brock, Matthew] [Sipos, John] [Sorrell, William H.]

**Comment:** One potential new technology that is relevant to radiological risk is the use of ceramic fuel cladding as a replacement for the zirconium alloy (zircaloy) fuel cladding that is now used in light-water reactors. In situations where the fuel overheats, ceramic cladding may behave better than zircaloy cladding. Experience and analysis show that zircaloy cladding can readily undergo exothermic reaction with air or steam, and a steam- zircaloy reaction can yield a copious amount of hydrogen. These phenomena can greatly exacerbate the severity of a fuel-overheating incident. (0286-101 [Curran, Diane])

**Comment:** New cladding materials, such as silicon carbide, are being researched in part due to the desire to reduce fuel costs and increase fuel burnup. The long term performance of such cladding in storage and after repository disposal also needs to be addressed within the scope of the EIS. (0286-69 [Curran, Diane])