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Mr. Joyce:

We respectfully submit these scoping comments for the Greater Than Class C Environmental Impact Statement (GTCC EIS). The EIS proposes to evaluate potential alternatives involving various disposal methods for application at several DOE and generic commercial sites. DOE should broaden the scope of this EIS to a Programmatic EIS, thereby fulfilling DOE's obligations under the National Environmental Policy Act's (NEPA's) Rules and Regulations.

We Argue for a Programmatic EIS for GTCC Waste Disposal

We contend that disposal of GTCC waste is a "program," defined by DOE under its NEPA regulations as systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive. The federal government is responsible for the disposal of any low-level radioactive waste with concentrations of radionuclides that exceed the limit established by the Commission for Class C Waste, as per Section 61.55 of Title 10, Code of Federal Regulations (CFR). Therefore the statute-driven nature of the DOE GTCC waste disposal proposal is evident.

Moreover, the GTCC EIS proposes to analyze differing conceptual disposal methods for multiple candidate sites (including generic commercial locations) to implement this plan. This strongly indicates that systematic and connected agency decisions will have to be considered in the GTCC EIS.

The Council on Environmental Quality (CEQ), impaneled by NEPA, issued implementing regulations as part of the Code of Federal Regulations (CFRs) that all executive branch agencies had to incorporate. At 40 CFR 1502.4(a) the CEQ required that, "Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined." At 40 CFR 1502.4(b) the CEQ stated, "Environmental Impact Statements may be prepared, and are sometimes required, for broad Federal actions such as the adoption of new agency programs (Sec. 1508.18).

Agencies shall prepare statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decisionmaking.”

Because of these CEQ requirements, DOE NEPA implementing regulation 10 CFR 1021.330(a) states, “When required to support a programmatic decision DOE shall prepare a programmatic EIS or EA.” [Cites to two other statutes in 10 CFR 1021 omitted in this quote.] Given the CEQ NEPA regulations and the Department’s implementing regulations, we argue that DOE is obliged to prepare and complete a programmatic environmental impact statement for GTCC waste disposal so that its proposal is properly defined and analyzed. Any subsequent Record of Decision should then select a disposal method or methods and a specific site or sites, and only then should a site-specific EIS or EISs go forward. In sum, this GTCC waste disposal environmental impact statement should be broadened to a programmatic environmental impact statement.

The remainder of our comments apply to the PEIS that we think is required, to the site-specific EIS(s) we believe should follow a GTCC waste disposal PEIS and Record of Decision, and to the presently proposed EIS should DOE make the wrong decision to proceed with it. However, we reiterate our belief that a PEIS is required.

All true alternatives for safe storage must be identified and analyzed

DOE should reject in advance irretrievable disposal of GTCC wastes. Given potential future innovations that could provide safer disposal methods, or the discovery of greater risks at any one site than previously foreseen, it is necessary *ipso facto* that all disposal options be reversible. At a minimum, DOE must consider interim “Hardened On-Site Storage” (HOSS) at existing nuclear facilities as a real alternative (further discussion immediately below). Should DOE summarily reject HOSS, please explain why.

Analyze Hardened On-Site Storage

In our view, GTCC radioactive wastes should be safely stored as close to the site of generation as possible and be safeguarded in hardened, on-site storage facilities. HOSS facilities should be considered and analyzed from the perspective that these wastes must be zealously protected from risks posed by wildfire or other natural or man-made disasters. HOSS facilities must not be designed as permanent waste disposal solutions, and therefore should not be constructed deep underground. The wastes must be retrievable, and real-time radiation and heat monitoring at the HOSS facility must be implemented for early detection of radiation releases.

The overall objective of HOSS should be that the amount of releases projected in even serious terrorist attacks should be low enough that the storage system would be unattractive as a target to begin with. Design criteria must include resistance to severe attacks, such as a direct hit by high explosive or an aircraft loaded with fuel and/or explosives. Please explain why HOSS was not posed as an alternative in the Notice of Intent for the GTCC EIS. If HOSS is not analyzed in the draft GTCC EIS, please provide detailed reasons for its rejection.

DOE should dedicate funding to local and state governments for independent monitoring

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Funding for independent monitoring of the HOSS facilities at each site must be provided to local and state governments, with the right of review of that monitoring by the potentially affected public.

Periodic review of HOSS facilities should be required

An annual report reviewing the safety condition of each HOSS facility should be prepared with meaningful participation from public stakeholders, regulators, and utility managers at each site. A good summary of the report must be made publicly available and provide for possible recommendations for any needed corrective actions.

Please list which proposed disposal methods will or will not work at which sites

This GTCC EIS proposes “Enhanced Near Surface Disposal” and “Intermediate Borehole Disposal” as solutions for GTCC waste disposal. Intermediate depth borehole disposal proposes drilling deep boreholes more than 30 meters in the ground. Enhanced near-surface disposal proposes the placement of the wastes in engineered trenches, vaults, or other similar facilities. Certainly, Enhanced Near Surface Disposal and Intermediate Borehole Disposal are not suitable for all sites. Factors such as depth-to-groundwater will inevitably eliminate some proposed disposal methods from some sites. Please list which proposed disposal methods will or will not work at which sites and why. Please analyze in detail all proposed disposal methods for all suitable sites, including depths of repositories and boreholes proposed for each site.

Concentration averaging must be used transparently, if at all

Concentration averaging is the method of reclassifying nuclear waste by averaging the radionuclides in the waste over the volume or mass of a container, usually a 55-gallon drum. DOE’s July 2007 “Greater-Than-Class C Low-Level Radioactive Waste And DOE Greater-Than-Class C-Like Waste Inventory Estimates” report states that the amount of GTCC low-level waste (LLW) has decreased as a result of concentration averaging. Because the waste activity can be averaged over the disposal container, some GTCC waste will be allowed to be disposed of as Class A, B, or C LLW (Pg. 1-5). The NRC and DOE inventories were reduced by removing sources that would not exceed Class C concentration limits if the activity of an individual source was averaged over the volume of a 55-gallon drum (Pg. 3-5). Concentration averaging basically allows a higher waste to be diluted and disposed of as a lower class of waste.

The Nuclear Regulatory Commission (NRC) has adopted the 1995 “Branch Technical Position on Concentration Averaging” and uses this report as the basis for concentration averaging in this report. Has DOE adopted the Branch Position? If not, how will this affect DOE’s GTCC-like waste?

If concentration averaging is to be used, the pre-averaged amounts must be stated. The amounts of A, B, and C, waste which were originally GTCC before averaging must be stated.

Protect those most at risk

Many federal radiation protection standards, such as limits on how much residual radiation will be allowed in contaminated soil, are based on "Reference Man." That is defined as a hypothetical adult "Caucasian" male who is 20 to 30 years old, 154 pounds

in weight, five feet seven inches tall, and is "Western European or North American in habitat and custom." However, other groups, including women, children, and embryos/fetuses, are more sensitive to the harmful effects of radiation or toxic materials.

The government's model for setting residual radioactivity standards for cleaning up radioactively contaminated sites (RESRAD) pictures a family on its front panel display, but its standard calculating model converts contamination to radiation dose only for "Reference Man." In the context of clean up and storage of nuclear waste at Department of Energy sites, the risk to a pregnant woman farmer, the fetus, and her children should be evaluated, rather than Reference Man. As a matter of principle, the most potentially vulnerable human beings should be protected, instead of Reference Man.

Future GTCC Wastes

How much waste is projected beyond the 2062? How much waste is expected beyond that date if 50 and/or the number of new reactors that DOE estimates are built and operated for the length of their licenses. Characterize such GTCC and GTCC-like waste, detailing the volumes, radioactivity and composition of these materials and in what forms they will be received and stored.

The EIS must comprehensively address the long-term consequences of the complete future GTCC proposal.

Future GTCC wastes from the proposed Global Nuclear Energy Partnership program are not included in projected GTCC inventories. How much GTCC waste will GNEP produce?

The long-term costs of GTCC must be thoroughly analyzed.

As government subsidies constitute the irretrievable commitment of taxpayers' dollars, analyses of all projected costs for the proposed GTCC waste disposal program and real alternatives to it must be front and center in the EIS.

What is the comparison of costs of all the different proposed disposal alternatives (including hardened on-site storage)? Please calculate the costs of building each proposed disposal options at each proposed site, the transportation of waste, operating expenses, health costs for treatment of occupational illnesses and accident victims, and the costs of security of the facilities. Please compare that to the costs of not implementing the GTCC program. What will be the entire life cycle costs of the GTCC proposal?

The Timeline for this EIS must be stated.

The draft EIS must include a complete timeline for the GTCC proposal. This timeline must show the beginning and end of activities at all facilities in relationship to one another, including construction, material transfer, waste removal, operations, and the ultimate decontamination and decommissioning of all facilities.

The Future Activity of GTCC wastes must be estimated

The total volume of wastes being addressed in this EIS is estimated to be about 5,600 m³ containing about 144 million curies of activity. The total volume of GTCC waste is relatively small; however, the GTCC wastes contain very high levels of activity.

The draft EIS must project volumes and curie-counts of future GTCC wastes for the next 500 years. These amounts could accelerate rapidly because of the so-called nuclear renaissance.

Monitoring of the GTCC facilities must be specified in the EIS.

Details should be included on how environmental, safety and security monitoring will be performed and who will do it. The costs of monitoring must be included in the cost of the project.

All socioeconomic impacts to potentially affected communities must be analyzed.

How many jobs will be generated? How long will these jobs last? Will people be brought in from outside of the area to work at these facilities? If so, what positions will they fill? Impacts to tourism must be analyzed. Impacts to property values must be analyzed. All of these must be analyzed for all options at all sites.

Disposal of GTCC radioactive wastes should be the starting point for public discussions of nuclear reactor decommissioning and proposed future reactors, not an afterthought.

Much of the future GTCC wastes will be the reactor parts themselves that won't enter into the waste streams until the 2060's. Reactor decommissioning is a tough problem. Do we wait 100 years for the radioactivity to decay away? That leaves an abandoned, contaminated site where no one will take responsibility. Should they be entombed? More broadly, are more nuclear power plants worth the expense and intractable waste problems that taxpayers will inevitably be required to pay for? It is imperative that DOE analyze these issues because they have direct impact on the future generation of GTCC radioactive wastes. Please use this EIS as a starting point for discussion on the future of nuclear power.

Please post the transcripts of the public scoping meetings on your website.

The American public has a right to read and understand the full range of public debate.

Please make all reference documents available to the public on your website as soon as possible

In order for the public to make meaningful and informed comments on the draft EIS, all reference documents must be available when the comment period on the draft begins. In our experience, the cited reference documents form the baseline foundation for all DOE NEPA processes, but yet the Department is often negligent in making those reference documents available in a conveniently accessible and modern fashion.

DOE should analyze possible GTCC waste treatment alternatives, such as vitrification.

Encasing GTCC wastes in glass may reduce their risks to the environment and public health. If vitrification or other waste treatment alternatives are dismissed, please explain why.

Do not bring more nuclear waste to the Hanford Nuclear Reservation

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The Hanford Site is included for consideration in the EIS. Senator Ron Wyden (D.-OR) said it all when he stated, "My point here is a simple one. DOE has not fulfilled its obligation to clean up Hanford. It's not clear when it will. But now, DOE is proposing to bring more waste to Hanford – this time in the form of waste from commercial nuclear power plants, medical wastes and other nuclear processing facilities... Hanford should have less nuclear waste, not more. It should be cleaned up, not dumped upon. So, today, I am putting myself on the record as being fiercely opposed to DOE's plans to dump more waste at Hanford and I will do everything in my power to fight to keep it from happening." In sum, Hanford should be rejected as a potential disposal site for GTCC wastes.

Do not bury sealed sources and other GTCC wastes at the Los Alamos Laboratory

LANL has collected around 15,000 sealed sources from across the country that are currently being stored above ground at the Lab's radioactive waste dump, Area G. The final disposition of Area G, in operation since 1957 but now being forced to close by the New Mexico Environment Department, has yet to be determined. Hopefully the existing buried hazardous and radioactive wastes will be exhumed and removed. The GTCC EIS should analyze a location at LANL for a HOSS facility instead of continuing to bury nuclear waste at Los Alamos.

- Senator Jeff Bingaman (D-NM) has stated, "It's clear to me that LANL is not an ideal location for this type of 'enhanced near-surface facility' especially given that DOE does not yet have a complete understanding of the geological formation on which the lab rests." Even Senator Pete Domenici (R-NM) has stated, "This would not be a good fit for Los Alamos' mission." We assert that LANL should also be rejected as a potential site for GTCC waste disposal because that conflicts with the New Mexico Environment Department's cleanup order.

Do not bring GTCC to the Waste Isolation Pilot Plant (WIPP)

This would require changing the Land Withdrawal Act over what WIPP can accept and opens the site up to commercial waste, which is and should remain prohibited. As it is, WIPP cannot accommodate all the wastes that DOE has now planned for it, let alone new waste.

Yucca Mountain should not be considered as a possible site for GTCC wastes disposal since its suitability for any radioactive waste disposal is still not known.

Additionally, Yucca Mountain's potential capacity is already exceeded by presently projected volumes of high-level radioactive wastes.

DOE should clearly specify exactly what is GTCC

Please specifically state what is and what is not included in the term "Greater Than Class C." For instance, are all Radioisotopic Thermal Generators (plutonium-238 batteries for spacecrafts) considered GTCC? Is storage tank sludge from plutonium reprocessing such as at the Hanford Nuclear Reservation considered GTCC? Are smoke detectors containing radioactive alpha emitters considered GTCC? Please explain why

the above are or are not considered GTCC. This EIS must provide a concrete definition of what GTCC radioactive wastes actually are.

The draft EIS must be specific concerning disposal methods

Several disposal options for GTCC wastes are being evaluated in the EIS. Intermediate depth borehole disposal proposes to drill boreholes deeper than 30 meters into the ground. The wastes are then to be placed in the boreholes up to about 30 meters from the surface, and the remaining space filled with clean soil. What then is the total depth to the bottom of the borehole? Is there a maximum borehole depth being considered? What is the minimum distance from the bottom of the borehole to the water table?

Enhanced near-surface disposal proposes the placement of the wastes in engineered trenches, vaults, or other similar facilities. Please provide drawings of engineered trenches, vaults, other similar facilities, barriers, deeper depth to disposal, enhanced waste packaging, and boreholes. Please list which proposed disposal methods, or combination of methods, will or will not work at which sites.

Please be specific when analyzing GTCC impacts

DOE states it intends to evaluate the issues listed below while considering the potential impacts of proposed disposal alternatives. Our comments follow DOE language (quoted here in italics).

- *Potential environmental impacts including air, noise and water quality.*

All GTCC waste disposal considerations must stringently minimize the use of and be stringently protective of our precious water resources in New Mexico. Please list all mitigation measures needed for all proposed sites and all unavoidably adverse environmental impacts.

- *Potential transportation impacts from the shipment of GTCC LLW and DOE GTCC-like waste to the disposal site(s).*

Please specify the potential transportation impacts of shipping waste from each existing GTCC site to each of the proposed disposal locations. Please specify how many shipments would occur by truck, train, or barge. Specify how many shipping containers would be needed, their costs, and whether they already exist or whether new containers would have to be developed and manufactured.

- *Potential impacts from postulated accidents.*

Any and all facility and transport accidents must be considered in the GTCC proposal. We request that all accident scenarios be explored. Please provide written protocol and procedures for emergency responders within a 50-mile radius of all accidents analyzed. Moreover, when GTCC waste disposal proposals pertain to National Nuclear Security Administration sites (such as LANL), we believe that it is required that DOE should consult with the Defense Nuclear Facilities Safety Board.

- *Cumulative impacts from past, present and reasonably foreseeable actions.*

☐ Please address cumulative impacts on the 50-mile radii surrounding DOE facilities and missions. In New Mexico, this would include Sandia National Laboratories, current operations at the Los Alamos National Laboratory (LANL), planned expanded operations at LANL and future activities contemplated under “Complex 2030” (the future nuclear weapons complex that DOE wants). Possible nuclear operations under the “Global Nuclear Energy Partnership” must also be included. Please be specific about potential

impacts to water, air and soil, environmental justice, transportation, economics (including tourism), emergency preparedness, and waste generation.

- *Intentional destructive acts.*

What will the potential impacts be from an accident or terrorist attack at a GTCC site? What emergency response services are going to be available should this happen? What will be the impacts of an accident or attack during transportation? What emergency response services are going to be available should this happen? How will the GTCC EIS address new security requirements from Design Basis Threats analyses? Any and all possible terrorism attacks must be considered. Specifically state the weights, velocities, and general parameters used in each analysis. Please include an analysis of possible terrorist attacks on the GTCC facilities and transport of the nuclear waste.

In conclusion

The treatment and handling of GTCC wastes must be protective of human health and the environment for many tens of thousands of years. Analyses to do so are not only best done in a programmatic environmental impact statement, but we argue are required to be done in a PEIS. DOE must consider storage of GTCC waste as interim until improved safe methods of disposal are discovered. Out-of-sight, out-of-mind permanent burial must not be considered just because no other method is now known. The relatively small volumes but high activity level of GTCC wastes make it an ideal issue in which to seriously consider hardened on-site storage. We urge DOE to do so.

We support safe, monitored storage of radioactive wastes as a matter of national security and environmental protection. However, that should not be interpreted as support for more nuclear weapons, nuclear power, or the generation of more nuclear wastes. In our view, the best way to treat radioactive wastes is to not produce them to begin with.

Sincerely,
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