UNITED STATES GOVERNMENT
DEPARTMENT OF ENERGY

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GLOBAL NUCLEAR ENERGY PARTNERSHIP
(GNEP)

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PUBLIC HEARING

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Tuesday, December 9, 2008

The public hearing of the Global Nuclear Energy Partnership convened in Discovery II in the Holiday Inn, 550 C Street, SW, Washington, DC, at 1:00 p.m., Holmes Brown, Moderator, presiding.

PRESENT:

HOLMES BROWN, Moderator
CARTER "BUZZ" SAVAGE, Presenter

PUBLIC PRESENT:

SUSAN GORDON
NICKOLAS ROTH
DARRELL LACY
KEVIN KAMPS
BRIAN O'CONNELL

THOMAS B. COCHRAN
ED MUELLER
MICHELE BOYD
ED LYMAN
SHERVIN BOLOORIAN
STEVEN KRAFT
IRENE NAVIS

LEONOR TOMERO
DIANE D'ARRIGO
PAMELA MOFFAT

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Adjourn

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P-R-O-C-E-E-D-I-N-G-S

1:00 p.m.

MR. BROWN: Thanks very much. Good afternoon and welcome to this public meeting on the draft Programmatic Environmental Impact Statement for the Global Nuclear Energy Partnership. The development of an environmental impact statement on this subject is required by the National Environmental Policy Act.

My name is Holmes Brown. I will serve as the facilitator for this event. My role is to ensure that this meeting runs on schedule and that everybody has an opportunity to speak. I'm not an employee of the Department of Energy nor an advocate for any party or position. At the registration table you should have received a participant's packet. If not, please raise your hand so staff can bring it to you. It contains copies of the slide presentation and is a convenient place to take notes during the briefing that

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will follow in a few minutes.

There are three purposes for today's meeting. First, to provide information on the content of the draft Programmatic Environmental Impact Statement (PEIS) and on the National Environmental Policy Act (NEPA) which governs the process. Anyone else who needs a participant's packet? A second purpose is to answer your questions on the draft PEIS and NEPA, and third to receive and record your formal comments on the draft PEIS. The agenda for today's meeting reflects these purposes.

We will begin with a presentation by Mr. Buzz Savage regarding the draft Programmatic Environmental Impact Statement for GNEP. Mr. Savage is the Associate Deputy Assistant Secretary for Fuel Cycle Management. To answer your questions, project staff will be available throughout the afternoon at the display tables to the back and to the sides. They can discuss the draft PEIS and the NEPA

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process, the contents of printed materials on display and the contents of Mr. Savage's presentation. Following Mr. Savage's presentation we will recess so that the public may pursue further questions with available project staff. Once we reconvene, the court reporter will be available to receive your comments and suggestions regarding the GNEP draft PEIS. All your comments will be transcribed and made part of the permanent record.

I'm now pleased to introduce Mr. Savage who works on recycled fuel management for DOE's Office of Nuclear Energy. He will discuss the background of the project and the purpose and basic elements of the draft PEIS.

(Presentation by Mr. Savage.)

MR. BROWN: Thanks very much. At this time we're going to take a brief recess so that we can set up to receive your comments and also to provide you with an opportunity to pursue further questions with available staff

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at the posters in the back and the side of the road. In addition, materials from groups other than the Department of Energy are also available at the table up here at the side of the room. I will make an announcement when we're about to resume the formal portion of the meeting and begin taking oral comments. If you would like to provide a comment today and have not yet signed up to do so, you may go to the registration desk and add your name to the list. So again, we're going to recess briefly so you can pursue further questions and we'll soon begin taking your formal comments. Thanks.

(Whereupon, the foregoing matter went off the record at 1:37 p.m. and went back on the record at 1:50 p.m.)

MR. BROWN: If folks will take their seats we'll begin the public comment period. Again, if you'll take your seats. If you want to continue your conversations you may adjourn to the lobby. It's now time to

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receive your formal comments on the draft PEIS. This is your opportunity to provide DOE with reactions, additions, or corrections to the draft document. A court reporter will transcribe your statement. Our reporter today is Sam Wojack.

Let me review a few ground rules for formal comments. Please step up to the microphone over there when your name is called, introduce yourself, providing an organizational affiliation where appropriate. If you have a written version of your statement please provide a copy to the court reporter after you've completed your remarks. Also, if you have additional documents that you would like to have included in the formal record, provide those to the court reporter. They will be inventoried and entered in the official record.

I will come two names at a time, the first of the speaker and the second of the person to follow. In view of the number of

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people who've indicated an interest in speaking this afternoon, please confine your public statement to five minutes. A staff person sitting in the front row will hold up a sign indicating when you have one minute remaining. At that time please summarize your remaining comments.

Mr. Savage will be serving as the hearing officer for the Department of Energy during the formal comment period. He will not be responding to any questions or comments during this session. And I've been verbally reminded that if you would please turn your cell phones off. We have sort of a symphony of sound here. I think in deference to the prepared remarks of the speakers if you'll turn your cell phones off. Thanks very much. With that, let me call our first speakers. Susan Gordon will start and Ed Lyman will follow Susan.

MS. GORDON: I want to thank the Department of Energy and Mr. Savage for the

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extension that DOE has given for the comment period. That's something that many community-based organizations were looking for and we appreciate having that opportunity.

So my name is Susan Gordon and I'm the Director of the Alliance for Nuclear Accountability which is a network of more than 36 local, regional and national organizations representing the concerns of communities in the shadow of the U.S. nuclear weapons sites and radioactive waste dumps. Many of our members organizations are in areas targeted for reprocessing facilities and are gravely concerned that their communities will become nuclear waste dumps just like West Valley, New York, Pocatello, Idaho, Richland, Washington, and Aiken, South Carolina.

ANA objects to the Global Nuclear Energy Partnership draft Programmatic Environmental Impact Statement's support for reprocessing of high-level radioactive waste. As stated in the draft PEIS, GNEP intends to

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provide nuclear power that is safe, secure and economical while reducing the impacts associated with spent nuclear fuel disposal and reducing proliferation risks. ANA, however, finds that the GNEP proposal would actually exacerbate the inherent proliferation, cost, safety, waste and security risks associated with nuclear power. The Global Nuclear Energy Partnership is a Bush Administration scheme to revive the dangerous practice of reprocessing irradiated nuclear fuel. GNEP would endanger the environment, encourage nuclear bomb-making, squander U.S. taxpayer dollars and deepened the nuclear waste problem. Under the GNEP plan some countries would supply and fuel nuclear reactors for other as yet unnamed countries that would agree to forgo uranium enrichment and plutonium reprocessing. Once the fuel rods were irradiated, they would be sent back to the suppliers for eventual reprocessing. Reprocessing is the fundamental

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link between a nuclear reactor and a plutonium bomb. Irradiated or spent fuel is separated into its constituent ingredients usually using acid. One of the ingredients, plutonium, can be used to make new reactor fuel or nuclear bombs. Separated plutonium encourages nuclear weapons proliferation.

This would perpetuate a system of nuclear have countries and nuclear have-not countries. This approach clearly has failed U.S. foreign policy and has not served to stop countries from attempting to obtain nuclear weapons or technology to enable the development of nuclear weapons. The draft PEIS diminishes many of these risks by minimizing environmental impacts of reprocessing and by not providing a full proliferation risk or life cycle cost analysis for GNEP. Furthermore, it overstates the need for reprocessing by exaggerating projections of increased U.S. nuclear power production capacity in the future. Finally, the no-

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action alternative supports funding for the Advanced Fuel Cycle Initiative which conducts research for reprocessing. Instead of the preferred or no-action alternatives, the final PEIS should support the establishment of hardened on-site storage, or HOSS, of nuclear waste.

DOE's contention - how am I doing on time? DOE's contention that GNEP will reduce waste volumes does not take into account the environmental discharges from reprocessing facilities. The history of reprocessing in the U.S. and abroad has demonstrated that facilities have a catastrophic effect on the environment. The reprocessing facility in West Valley, New York, which was the site of the only U.S. commercial reprocessing plant that operated for six years accumulated 600,000 gallons of high-level waste on-site. The tanks used to store this liquid high-level waste must be cooled or the waste will explode. Since it

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went online, the French reprocessing facility at La Hague has discharged 100 million gallons of radioactive liquid waste annually into the English Channel and continues to blow gaseous forms of Krypton-85 and Carbon-14 downwind. In the United Kingdom, the Sellafield reprocessing facility has discharged 1,000 pounds of plutonium into the Irish Sea. The draft PEIS must address how DOE will handle waste streams that include but are not limited to strontium, cesium, radioactive lanthanides, technetium, uranium and Krypton gas.

So I want to thank you again for the opportunity to help DOE make a sound decision on GNEP and restate that this document is incomplete and should never have been released. The goals and plans for GNEP have shifted repeatedly since it was first proposed. This is a symptom of a program that is trying to justify itself. The Bush Administration is trying to push its nuclear renaissance during its last few days in

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office. Nuclear power and reprocessing are not the solution to climate change and will only serve to divert money into the pockets of the nuclear industry. It is time for this proposal to be withdrawn. And thank you again for extending the comment period. My complete statement I'll hand to the reporter. Thanks.

MR. BROWN: Okay, thanks Susan. Ed Lyman, who will be followed by Darrell Lacy.

DR. LYMAN: My name is Dr. Edmund Lyman. I'm a Senior Staff Scientist with the Union of Concerned Scientists here in Washington and I'm going to read my statement today for efficiency. The Union of Concerned Scientists, or UCS, opposes the Department of Energy's preference as stated in the GNEP DPEIS to close the nuclear fuel cycle, that is, to change the U.S. strategy for disposal of commercial spent nuclear fuel from direct emplacement in a geologic repository to reprocessing and separation of fissile

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materials for fabrication into new reactor fuel. UCS opposes spent fuel reprocessing for reasons of security, safety and cost as expressed in detail in our comments on the scope of the GNEP DPEIS and other publications, including the 2007 report Nuclear Power in a Warming World, which is described and referenced in Chapter 1 of the DPEIS, although not really dealt with in a substantive way.

A preliminary review of the DPEIS indicates the document provides no new or compelling data or analysis to support DOE's, quote, "preference," unquote, for closing the fuel cycle. The technical analysis is of extremely poor quality and is riddle with unsupported assumptions, misleading comparisons and major omissions. The fact that DOE expresses its preference without selecting a specific strategy makes it appear the process is in sync with the standard, "decide, announce, defend" mode. DOE is not

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in a position to express any preference for the closed fuel cycle unless it can point to a scenario that clearly demonstrates its goals can be met, and then effectively responds to the technical arguments against such a preference.

Many of our criticisms of GNEP deal with security and proliferation issues. To that end, UCS requested in its comments on the scope of the PEIS that DOE perform a non-proliferation impact assessment of the program. We understand such an assessment has been done but is being withheld from release. We request that DOE immediately release the document to the public for formal comment and that all comments be addressed in the final EIS and the record of decision. We also request DOE release the study performed by the national laboratories on the attractiveness of GNEP fuel cycle alternatives for producing nuclear weapons-usable materials. A recent presentation on some of the findings of that

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study concludes that, quote, "There is no silver bullet to solve the safeguards and security issue. None of the proposed flow sheets examined to date justify reducing international safeguards or physical protection levels. All reprocessing products evaluated need to be rigorously safeguarded and provided the highest levels of physical protection." That includes all the UREX variants, COEX, NEW-EX, and PYROX and even THORAX and that document is available on the website, Charles Bathke, et al., a presentation in Japan, October 6, 2008.

Because of the serious security and proliferation impacts of GNEP, there cannot be a rational public debate on DOE's preference for closed fuel cycle without full disclosure of DOE's non-proliferation analysis, and the fact that proliferation is cited in the purpose and need for agency action underscores that. UCS will provide a detailed critique of the deeply flawed

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technical analysis in the PEIS in its written comments. Some of the issues that we will discuss in more depth are listed below. One, the DPEIS contains a misleading comparison of nuclear waste disposal impacts of the various alternatives. The analysis in Chapter 4 of the DPEIS does not consistently compare the waste disposal impacts of the various alternatives over a 50-year implementation period. Table S.4-2 of the summary implies that after 50 years of operation the recycle options involving thermal and/or fast reactors produce no spent fuel that must go to repository, and the thermal load reduction factor for recycle options involving fast reactors is a factor of more than 200 relative to once-through. But this result is based on the assumption the entire fleet of reprocessing facilities, fuel fabrication plants and reactors using actinide fuel will be replaced and continue to operate beyond the 50-year implementation period. If the system

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is not replaced, all the material in process, that is, in reactor cores and in storage awaiting reprocessing will require geologic disposal. In addition, all the separated actinides and fresh actinide-based fuel will require geologic disposal if there are no reactors to use them as fuel. Like a pyramid scheme, the scenario ultimately depends on the availability of a new generation of reactors and other facilities to process the waste from previous generations. If new reactors do not become available the system collapses.

Second, a technical point is the analysis of accident impacts from mixed-oxide fueled light-water reactors is incorrect and significantly underestimates the true impacts because it assumes the presence of weapons grade and not reactor grade plutonium. The DPEIS based its accident analysis for MOX fuel reactors on the surplus plutonium disposition EIS which used weapons grade plutonium MOX fuel. That is a significant technical error

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because in GNEP you would be using reactor grade plutonium which has a significantly different inventory of radionuclides. And I showed in the 2001 paper I published the environmental impacts would be two to three times greater for using commercial reactor-grade plutonium MOX fuels compared to weapons grade. That's a significant underestimate of those consequences and a major technical error in this document, and I'll stop there. Thank you.

MR. BROWN: Okay, thanks very much. Darrell Lacy? Michelle Boyd will follow Darrell.

MR. LACY: Good afternoon. My name is Darrell Lacy. I represent Nye County, Nevada, home of Yucca Mountain and the Nevada test site. I appreciate the opportunity to comment on the PEIS. All of the options that are discussed here will have some impact on either Yucca Mountain or the Nevada test site which is home to the federal government's low-

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level waste disposal facility. We have submitted written comments and I will summarize those today.

It is our belief that the current GNEP program is a responsible and necessary way to deal with the nuclear waste problem, but it must be part of a larger, more integrated energy policy. All forms of energy have adverse environmental impacts, including all of the renewable technologies that are currently in vogue today. Any rational energy policy that attempts to deal with greenhouse gases must include nuclear power to help provide baseload and stability to the nation's electrical grid. But for nuclear power to be viable, the nation must address the nuclear waste issue. If we take the no-action alternative which was discussed here as part of GNEP, we will need a geologic repository the size of Yucca Mountain every 25 to 30 years. For those of us who have been involved in the Yucca Mountain process, we understand

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that that's not reasonable to expect that to happen.

While Nye County supports GNEP, any decision must address all of the waste streams involved, the volume and types of spent fuel produced, the ultimate disposal of any spent fuel high-level and low-level waste that are produced in the reprocessing facilities, any transportation cost and risk associated with any spent fuel and high-level waste streams that are moved around the country, and it must deal with the existing inventories of spent fuel, high-level and defense waste that are currently out there that are ignored in this GNEP discussion. Ultimately, any decision on GNEP will not eliminate the need for one or more geologic repositories. The various programs look at changing the volume and toxicity of these streams, but there is still always a stream that needs a geologic repository and the current program assumes that the existing

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inventories will be going to Yucca Mountain.

Any failure to address all these waste streams from our nuclear programs would be irresponsible and only push the cost and decisions onto future generations. When DOE is ready to make a decision on resolving the waste issues, Nye County, Nevada is ready and willing to help find a solution to this issue. Thank you.

MR. BROWN: Thanks, Darrell. Michelle Boyd? And she will be followed by Kevin Kamps.

MS. BOYD: My name is Michelle Boyd. I'm the Director of the Safe Energy Program at the Physicians for Social Responsibility. Today I'm speaking for Dr. Michael McCally who is the Executive Director. His wife is in the hospital so he was not able to come today. PSR is a non-profit advocacy organization that is the medical and public health voice for policies to prevent nuclear war and proliferation, and to minimize the

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impacts of global warming and toxic degradation of the environment.

PSR opposes the Global Nuclear Energy Partnership. At its core, GNEP is a program to restart nuclear waste reprocessing in the United States and reprocessing would threaten public health and the environment, pose serious proliferation risks and cost taxpayers hundreds of billions of dollars, all without solving the problem of spent fuel from commercial nuclear reactors. The Department's Draft Programmatic Environmental Impact Statement for GNEP fails to recognize these flaws. It fails to adequately analyze the public health threats posed by reprocessing, it fails to analyze the proliferation risks and it fails to analyze the costs of such a massive program. Without a complete analysis of the impacts of the GNEP proposal, this draft PEIS is highly inadequate.

Experience in the United States and in other countries shows that reprocessing

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is the most polluting part of the nuclear fuel cycle and results in numerous waste streams that have to be managed. The most recent report by the National Research Council Committee on Biological Effects of Ionizing Radiation, or BEIR-7, confirms that increases in radiation exposure enhance the exposed population risk for cancer. And evidence continues to accumulate suggesting that children living near nuclear power facilities and especially reprocessing facilities are at increased risk of leukemia. Current research on health outcomes in partnerships receiving X-rays demonstrates that radiation even at low doses causes many forms of heart disease. These findings are confirmed and extended in laboratory animal studies. Early estimates show radiation exposure may account for 4 percent of all cardiovascular deaths in the United States. At a recent National Academy of Sciences meeting, radiation protection experts suggested that in light of these

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1 findings about cardiovascular disease, public
2 and worker radiation exposure standards
3 relevant to licensing nuclear power plants
4 will likely need to be changed.
5 DOE admits that reprocessing would
6 result in higher radiation doses to the
7 public, but claims these exposures would be
8 within regulatory limits, yet the department
9 doesn't analyze how the radioactivity will
10 actually be captured and stored in a safe
11 manner. For example, the draft PEIS states
12 that cesium and strontium would be separated
13 out and stored onsite for 300 years. After 30
14 years of operation, an estimated 7.5 to 12.4
15 billion curies of this highly radioactive
16 waste could accumulate at a GNEP facility,
17 posing an enormous risk to public health. The
18 National Academy of Sciences has called the
19 131 million curies of cesium and strontium
20 stored at the Hanford site in Washington State
21 the nation's most lethal single source of
22 radiation other than inside an operating

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reactor. Other waste streams include liquid low-level waste and gases such as carbon-14 and krypton-85. The Environmental Protection Agency requires that krypton-85 be captured and not released as is done at La Hague in France. However, technologies for capturing radioactive iodine are extremely expensive and would greatly increase the cost of the overall program.

Reprocessing would also make nuclear bomb materials more vulnerable to theft and attack, compared to leaving plutonium in a spent fuel rod, yet there is no analysis in the draft PEIS of the proliferation risks posed by reprocessing. DOE has stated that the National Nuclear Security Administration is preparing an assessment of the proliferation risks, but two months after releasing the PEIS and with public hearings basically complete after today, this analysis remains unavailable. And we do appreciate the extension on comments so

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that we can comment on this analysis. However, the public not only has to be able to comment on this analysis, but these comments should be considered as part of the draft PEIS.

Remarkably, the draft PEIS fails to include any cost estimate for GNEP. We know that in 1996 the National Academies of Science concluded that the cost of reprocessing and use of plutonium fuel from existing reactors would be an estimated $500 billion. We also have real cost estimates from international experience with reprocessing. For example, a French government report from 2000 concluded that reprocessing is actually uneconomical.

The Department of Energy's alternative to the GNEP program, which is to store waste at reactor sites where it's currently located until we find a place to put it in geologic repository doesn't represent a sufficient range of realistic alternatives.

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DOE must consider safeguarding spent fuel from terrorist attacks in hardened facilities at reactor sites which is a concept supported by more than 150 national and grassroots organizations. And I have copies, there were copies over there of these principles for safeguarding nuclear waste at reactors. Onsite storage makes sense from a safety, security and economic perspective and must be incorporated within the PEIS analysis. Thank you.

MR. BROWN: Thanks. Okay, Kevin Kamps is next. Brian O'Connell will follow him.

MR. KAMPS: Good day. My name is Kevin Kamps from Beyond Nuclear in Tacoma Park, Maryland. We are a watchdog group on the nuclear industry, and given that reprocessing is at the heart of GNEP I would like to focus my comments during this environmental impact hearing on the environmental devastation that's caused by

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extracting plutonium and uranium from irradiated nuclear fuel. Areva of France is one of the companies that's vying for the countless billions of U.S. taxpayer dollars to reprocess commercial radioactive waste in this country, so it's fair to review Areva and its predecessor Cogema's reprocessing record in France. Areva's La Hague reprocessing plant has annually discharged 100 million gallons of radioactive liquid wastes into the English Channel via an underwater pipeline. The sediments at the foot of this pipe would be considered intermediate-level radioactive waste under British laws and regulations requiring deep geologic disposal. Despite this, they are allowed to remain on the sea floor, eroding and carried away by the ocean's currents. Nearby beaches have been closed to public access due to radioactive contamination. Elevated rates of leukemia have been detected in neighboring populations. Radioactivity from La Hague has been detected

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as far away as waters in the Canadian Arctic.

DOE's assertion earlier that nuclear power does not emit air pollution is false. Areva's radioactive gaseous discharges to the atmosphere are even larger than its liquid waste releases. These gaseous discharges include krypton-85 with an 11-year half life and carbon-14 with a 5,700-year half life. These radioactive gaseous discharges blow downwind resulting in global collective doses to human beings for millennia to come. Eighty percent of the collective radiation dose of the entire French nuclear industry results from its reprocessing operations. Rather than solving France's radioactive waste dilemma, reprocessing actually complicates it. Multiple radioactive waste streams are generated most of which lack permanent, safe and sound disposal solutions. High-level radioactive wastes risk major releases while in liquid form and reprocessed uranium stored in the Champagne region of France has begun

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leaking into the aquifer used to irrigate vineyards in this world-famous region.

In the 1990s, many hundreds of high-level radioactive waste shipments to La Hague, one quarter to one third of all shipments involved transport containers that were externally contaminated in excess of so-called allowable radiation doses. A large number emitted 500 times more radiation than allowed by law and regulation. One shipment emitted 3,000 times the allowable radiation dose. Such contaminated shipments not only put workers at risk, but also unsuspecting members of the public who came in close contact with such shipments.

Considering EnergySolutions of Salt Lake City acquired British Nuclear Fuels and is also interested in GNEP's countless billions of dollars it's also appropriate to look at the environmental harm caused at British Nuclear Fuel's Sellafield reprocessing site in the United Kingdom. British

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reprocessing at Sellafield has discharged 1,000 pounds of plutonium into the Irish Sea. Plutonium has been detected in children's teeth hundreds of miles downstream. Ninety percent of the radioactive emissions and discharges from the British nuclear power program come from its commercial waste reprocessing. So taken together, the collective radiation dose from 70 years of so-called routine, that is, accident-free operations of the French and British reprocessing plants would be the radiological equivalent to the Chernobyl nuclear catastrophe.

The West Valley, New York reprocessing plant here in the United States only operated for six years but caused so much radioactive contamination of the surrounding environment that it will cost at least $5 billion to clean up. A recent report found that clean-up of West Valley could cost $10 to $27 billion over the next thousand years. If

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not cleaned up, the radioactive contamination onsite will erode into adjacent waterways and flow downstream into Lake Erie. During its operations, West Valley had among the highest worker exposures and worst water contamination in the U.S. nuclear power industry.

And finally, reprocessing does not solve or reduce the radioactive waste problem. On the contrary, it complicates it. Reprocessing generates numerous new, difficult-to-manage radioactive waste streams. Liquid high-level radioactive wastes must be re-solidified into glass logs, a process that has encountered technical difficulties at such sites as Hanford, Washington, leading to skyrocketing costs. Once vitrified, the high-level radioactive waste glass logs require deep geologic disposal, something no country on earth has yet opened. Even then, fears persist that the intense radioactivity and thermal heat of the waste will degrade the glass, leading to massive radioactive releases

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1 into the environment over time. Thank you.
2 MR. BROWN: Thanks, Kevin. Brian
3 O'Connell? Tom Cochran will follow.
4 MR. O'CONNELL: My name is Brian
5 O'Connell. I represent the National
6 Association of Regulatory Utility
7 Commissioners. I serve as the Director of the
8 Nuclear Waste Program Office where I monitor
9 the DOE's Civilian Radioactive Waste
10 Management Program. The reason we do that is
11 that our association represents the interest
12 of ratepayers who are contributing to a
13 nuclear waste fund held by the government for
14 the purpose of developing a geologic
15 repository. We are neither part of the
16 nuclear industry, nor did we choose Yucca
17 Mountain as the disposal site, but we do want
18 the federal government to fulfill its
19 statutory and contractual obligation to
20 provide safe disposal of spent nuclear fuel as
21 was agreed in 1982. I spoke at the
22 programmatic scoping meeting in 2007. I've

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provided some written comments to the people out at the front desk. I'd like to summarize what those comments are.

The goals expressed in the GNEP programmatic EIS are broad and global in intention. It seemed to us that many people were drawn toward the concepts of the program such as safe, secure and sustainable expansion of nuclear energy in the U.S. and abroad, and the expected benefits in meeting future electricity demands without the carbon emissions from fossil fuels, possible reductions in amount of geologic disposal, and the possible extraction of greater amounts of energy valued through the reprocessing of the spent nuclear fuel. There were questions raised over the details such as how would the arrangements between supplier states and user states work, what reprocessing methods would be used and have they been proven on a production scale, what is the relationship of the development and use of the repository at

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Yucca Mountain or with future repositories, and of course, what are the economics of the proposals. It seemed to us that the ideals and goals have become fluid and that part of that seemed to be the reaction of Congress where there were expressions of interest in reprocessing or recycling as some prefer to call it, but seemed to be more concerned that the timetable for realizing those benefits was too drawn out. There was no cost estimate to reprocess and some disagreement among experts about the economics compared with the ones to recycle. Some experts expressed concern about proliferation risks, even though one of the GNEP goals was stated to be the reduction of proliferation risk. Some other people wanted to believe that if we reprocess spent fuel there will be no need for geologic repository or developing one at Yucca Mountain to be more specific.

The programmatic EIS serves to explain further the possible alternatives that

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we've heard about. Descriptions are helpful. Many of the stakeholders do lack the expertise to weigh the technical aspects of the alternatives, but it is not often - I've prepared EIS's and reviewed many. It's not often that an EIS looks at seven alternatives as well as a no-action alternative, and we feel that adding these alternatives in response to public comments is a welcome sign of flexibility and respect for public input, including the comments that have been made today that are all being recorded and will all be analyzed by the Department. We would expect that an EIS would assess the various environmental impacts of several alternatives, but what many stakeholders will be interested in learning are other decision variables such as the degree of confidence in feasibility, proliferation potential and economics. Further, there needs to be a consideration of how best to manage and operate any of the reprocessing alternatives, be it government,

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private or some form of partnership. A key question that we have is how can we be sure that the operators of reactors will actually use the reprocessed fuel instead of fresh fuel. If reprocessed fuel is not competitive in the marketplace, will government subsidies be required?

I'm going to summarize further. It is definitely in the report that we've seen, and we have heard DOE officials state plainly and repeatedly that a geologic repository is required in all scenarios, including - and it's often overlooked - for the disposition of defense waste from the weapons programs and spent fuel from Navy ships and submarines. There is obviously a question hanging in terms of change of Administration as to whether or not the work will continue and will be carried forward. Will Congress warm to the proposals as they weigh their energy scenarios for the future? I'd like to close by saying I wish to

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emphasize a point made in the summary, that all programmatic alternatives would generate spent nuclear fuel and/or high-level radioactive waste that would require disposal in a geologic repository. That may not be what some people wish to believe as they seek in reprocessing a substitute for building a repository, period. Thank you.

MR. BROWN: Thank you. Tom Cochran. Ed Mueller will be next.

MR. COCHRAN: Mr. Brown, Mr. Savage, thank you for this opportunity. My name is Thomas B. Cochran. I'm a Senior Staff Member of the Natural Resources Defense Council and I'm speaking on behalf of the Natural Resources Defense Council. We will submit written comments before the end of the comment period.

Today I want to summarize a number of - about 10 or 11 reasons why the GNEP draft PEIS is a legally deficient document and should be withdrawn, and repaired and

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recirculated. First, the program is intended to support a safe, secure and sustainable expansion of nuclear energy according to the document. This analysis excludes a mix of alternatives, an analysis of a mix of alternatives, energy supply technology and demand initiatives that can meet future requirements for electricity services with less reliance on nuclear power in a less costly, safer and secure and more sustainable manner. Second, the DOE has segregated the discussion of proliferation impacts of the GNEP proposal and its alternatives in a yet-to-be-published report by NNSA. This is an unlawful segregation of the discussion of nuclear proliferation risk, the most important environmental risk associated with deployment of facilities under the proposed action and programmatic alternatives, into a separate document outside of the NEPA process. And the precedent for this being unlawful in part is the GESMO proceeding held by the NRC in the

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mid-1970s where they had to supplement their EIS.

The - describing the purpose of GNEP, the draft PEIS says that it would promote technologies that support economic sustained production of nuclear-generated electricity, et cetera. Despite this claim, the GNEP draft PEIS contains no economic analysis of facilities deployed under the proposed GNEP option and its programmatic alternatives. Instead, the major conclusions in the report are couched in terms of greatest opportunity and potential for largest reduction without factoring in economic considerations that render these conclusions illusionary. Fourth, despite the intended purpose and need of the GNEP to support sustained expansion in nuclear energy, the PEIS fails to analyze the supply and projected costs of uranium under the no-action alternative and other alternatives. Fifth, the GNEP PEIS fails to consider the reasonable

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alternatives, continued operation on the once-through fuel cycle but without the R&D and the advanced fuel cycle initiative, and without the R&D on fast reactors under the Gen 4 program, but which would reduce the proliferation risks of the program. Sixth, the GNEP program does not analyze the environmental impacts of facilities at actual sites which it could do, but it withdrew that analysis for reasons that I don't understand. Seven, the PEIS fails to analyze and compare impacts for the period prior to 2060 or for that matter after the 50-year analysis period. The GNEP analysis of the closed fuel cycle alternatives in each case assumes a balanced mix of thermal and fast reactors, thereby minimizing the environmental impacts and then biasing the comparison in the direction favoring the closed fuel cycle. The GNEP PEIS fails to compare the collective effective dose commitment of various alternatives, thereby leaving us with no means to compare

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realistically the cumulative health effects of the various alternatives.

The GNEP draft PEIS uses radioactive toxicity as a preferred metric. This fails to include the effects of retention in the pathway and therefore biases the health effects analysis. As I've mentioned to DOE previously back in - when Rickover jerked the fast reactor out of the Sea Wolf submarine. He was asked why he did it. He indicated this was in the `50s, `56 or `57. They were expensive to build, complex to operate, susceptible to prolonged shutdown as a result of even minor malfunction, and difficult and time-consuming to repair. An adequate PEIS would analyze each of these issues separately and address them as it looks historically at the 30-some odd fast reactors built around the world - analyze separately expensive to build, separately complex to operate, separately susceptible to prolonged shutdowns as a result of even minor malfunctions, and separately

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analyze the difficulty and time-consuming to repair.

Finally, I would say the combination of errors and omissions that I've identified above renders the GNEP draft PEIS a fraudulent and biased assessment of the relative merits of the fuel cycles by ignoring economic and proliferation considerations and drawbacks of fast reactors as evidenced by their operations to date. Remember, this program started in April of 1944 and we spent over, what, 50 years developing fast reactors. There's only one commercial-sized fast reactor operating in the world today and that was developed by the Soviet Union, a central economy. That tells you something about the reliability and cost-effectiveness of these technologies that DOE wants to promote. But, by analyzing these fuel cycles in terms of incomplete metrics and then presenting the conclusions in terms more favorable to the DOE objectives, Tetra Tech, Inc., and I hope

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there's some of their representatives here, because my message to you is that you have prepared a draft PEIS for DOE that demonstrates a serious lack of scientific integrity which also calls into question details in the report that would be more time-consuming to carefully analyze. Thank you for this opportunity.

MR. BROWN: Okay. Thank you very much. Ed Mueller? Nickolas Roth will be next.

MR. MUELLER: Good afternoon. My name is Ed Mueller. I am the Director of the Esmeralda County, Nevada, Repository Oversight Program, Oversight of Yucca Mountain Project. I'm here on behalf of the Esmeralda County Board of Commissioners. Esmeralda County, Nevada is adjacent to Nye County, the host county of Yucca Mountain Nuclear Waste Project site. And the proposed rail line which will carry the spent fuel to the project passes through our county.

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In 1983, by law the State of Nevada and 10 counties were declared affected local units of government (AULG). Esmeralda County is one of the AULG counties. Esmeralda County appreciates the fact that the Nuclear Policy Act of 1982 established a process and time schedule for the establishment of the nation's first geological repository for permanent disposal of spent commercial nuclear fuel and high-level nuclear waste. The county also appreciates the importance of having a seat at the table to ensure the highest level of safety and security for residents who might be impacted by the construction and operation of a nuclear waste repository, as well as the transportation of nuclear waste through Nevada en route to the facility. With that said, it's my privilege to read to you today comments from the Esmeralda County Board of County Commissioners regarding the GNEP Draft Programmatic Environmental Impact Statement. These comments are in a letter form from the

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commissioners signed by all three commissioners. The letter is addressed to Mr. Schwartz, Mr. Francis Schwartz who has received a copy of this, hard copy today.

The Esmeralda County Board of Commissioners appreciates the opportunity to provide comments on the Draft Global Nuclear Energy Partnership (GNEP) Programmatic Environmental Impact Statement. We have approved this letter and read the contents into the record at our meeting on December 2, 2008, for the submittal to DOE as our comments on the DOE EIS-0396. We believe the reality is that nuclear resurgence will require a broad industrial and technological expansion. It is about enriching uranium, fabricating fuel, recovering valuable resources from spent fuel and recycling it, and researching and developing new valuable resources from spent fuel - excuse me. We believe the reality is that nuclear resurgence will require a broad industrial and technological expansion. It is

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about enriching uranium, fabricating fuel, recovering valuable resources from spent fuel and recycling it, and researching and developing new technologies. In addition, we suggest there be coordination among commercial and defense technology to develop efforts to ensure development and deployment of the most effective reprocessing and reactor technologies. Ultimately the road to cleaner air and the success of nuclear power must run through Yucca Mountain. With that said, the Esmeralda County commissioners are pleased to acknowledge the Department of Energy for including in the GNEP Draft PEIS Section S.1.1.2 reads, "The GNEP program has been proposed in addition to Yucca Mountain Repository mandated by the Nuclear Waste Policy Act of 1982 and does not change the planning of the Yucca Mountain repository. Any decision pursuant to the GNEP PEIS would not diminish in any way the need for a nuclear waste disposal program as a permanent

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geological repository." Section S.1 under Introduction of the PEIS states, "At this time, DOE is not proposing project-specific or site-specific actions such as the construction and operation of individual facilities to support the demonstration and deployment of any programmatic alternative."

The Esmeralda County commissioners feel, regardless of whatever decisions are made regarding GNEP facility locations, consideration must be made to locate the facilities within the close proximity to the geological repository for which the waste is ultimately destined. DOE must not rule out the locations of Yucca Mountain Project and the Nevada test site as a potential site in Nye County. Esmeralda County appreciates your consideration and looks forward to working constructively with DOE on this important national program. Thank you.

MR. BROWN: Nickolas Roth? And Shervin Boloorian will be next.

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MR. ROTH: Thank you for giving me the opportunity to speak. My name is Nickolas Roth. I'm the Program Director for the Alliance for Nuclear Accountability. As was stated earlier, the Alliance for Nuclear Accountability is a network of more than 36 local, regional and national organizations representing the concerns of communities in the shadows of the U.S. nuclear weapons sites and radioactive waste dumps which we don't want our communities to become them, at least some of them.

The Alliance for Nuclear Accountability objects to the Global Nuclear Energy Partnership Draft Programmatic Environmental Impact Statement's support for reprocessing of high-level waste. If allowed to go forward, the GNEP proposal would exacerbate the inherent proliferation costs, safety, waste and security risks associated with nuclear power. I'd like to talk very briefly about a couple of those issues. One

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is the lack of proliferation analysis within the PEIS. For 30 years, the United States has observed a moratorium on reprocessing. The message was essentially we don't do it, so neither should you. During that time no additional countries began reprocessing nuclear waste. Since the United States announced the resumption of reprocessing in GNEP, several countries have expressed interested in developing sensitive nuclear enrichment and reprocessing technology. In one case, the United States has used GNEP to promote reprocessing technology in a country that previously did not have it. Since 2006, the United States has been assisting the Republic of Korea in the development of pyro-processing technology. During testimony to the Senate Committee on Energy and Natural Resources, Harvard University's Dr. Matthew Bunn stated, "GNEP's heavy focus on building a commercial-scale reprocessing plant in the near term would, if accepted, increase

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proliferation risks rather than decreasing them." Despite that one of GNEP's fundamental stated purposes is to reduce proliferation risks, no analysis of GNEP's proliferation impacts is provided. Instead, the National Nuclear Security Administration plans to release a separate non-proliferation assessment outside of the NEPA process to be released at an undetermined date. Due to the dramatic shift in U.S. policy of GNEP, concerns by many independent experts, the fundamental rationale for GNEP and the PEIS - the PEIS must include a proliferation impact analysis. The analysis should also include a risk assessment that addresses the potential for loss of nuclear material or diversion by terrorists. Spent fuel that has not been reprocessed is considered self-protecting because it is highly radioactive. Separated plutonium is a fine powder and approximately only 18 pounds are required to make a bomb. All of this increases the risk that material

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could be lost or diverted by terrorists.

I'd like to talk also about future projections within the PEIS for nuclear power. The draft PEIS overstates the future growth of nuclear power in the United States. It argues that the underlying purpose and need for GNEP is to support the expansion of domestic nuclear energy production. DOE argues that this need derives from projections that the U.S. nuclear capacity will increase from 100 to 200 gigawatts over the next 52 to 62 years. For DOE's scenario to be feasible, 80 to 100 nuclear reactors would have to go online over that time period. However, the Energy Information Administration, a government entity that provides policy-neutral data and energy capacity projections, projects that only 17 gigawatts of increased capacity is projected to come online from new nuclear power plants over the next 22 years, and there are only plans for 24 nuclear power plants. For DOE's projections to be feasible there

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would have to be a policy shift supporting an unprecedented increase in federal subsidies and construction rates for nuclear power plants. Considering the current worldwide economic situation and public opinion on nuclear power, this seems unlikely. As an alternative to reprocessing, the Alliance for Nuclear Accountability supports the principles for safeguarding nuclear waste at reactors. These principles, which are supported by more than one hundred national organizations and local communities near reactors, would store reactor waste in reinforced dry casks as near as possible to sources of generation. As a result, the waste can be managed for 100 to 200 years while some of the most radioactive elements such as cesium-137 and strontium-90 decay away, making the waste less dangerous to handle.

I'd like to talk briefly about the no-action alternative. The PEIS states that the no-action alternative - that under the no-

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action alternative DOE would continue activities associated with the Advanced Fuel Cycle Initiative and other related DOE programs, including programs that address safety, safeguards, security requirements for the advanced fuel cycle technologies. The Advanced Fuel Cycle Initiative is a program that essentially supports the research and development of reprocessing fuel cycle technology for the Global Nuclear Energy Partnership. If DOE decides to move forward with a no-action alternative, it should not include research and development for AFCI. Since this PEIS is supposed to assess the feasibility the reprocessing, the alternative to reprocessing should not be continued pursuit of reprocessing while doing nothing to address the growing problems of nuclear waste.

I'd like to finish by just thanking the Department of Energy for extending the comment period to March. While many of the issues that our group of

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organizations cited as reasons for an extension have not been fulfilled or completed, this at least allows more time for the public to understand and digest the PEIS and GNEP proposal. Thank you.

MR. BROWN: Thanks a lot. Okay, Shervin Boloorian will be followed by Irene Navis.

MR. BOLOORIAN: Good afternoon. My name is Shervin Boloorian. I'm with the Union of Concerned Scientists, a national non-profit, non-partisan organization. It uses science and analysis to evaluate policy options, and we craft the most effective policy solutions to support cleaner and safer alternatives to strengthen the economy to enhance national security. UCS has a section on its website, ucs.usa.org, devoted to the threat of nuclear terrorism. It is almost exclusively focused on the threat from reprocessing and the Global Nuclear Energy Partnership. One of our aims is to encourage

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policymakers not to be tempted to choose the politically expedient route and lock us into harmful or half solutions that fail to meet the challenges before us. We believe any draft programmatic alternative which closes the fuel cycle will be dangerous, dirty, astronomically costly and will run counter to and undermine GNEP's own proliferation risk reduction goals. According to the draft summary, it is a longstanding U.S. national security policy objective to reduce proliferation risks throughout the nuclear fuel cycle via systematic and comprehensive efforts to prevent the spread of nuclear weapons materials and sensitive technologies.

The President-Elect proposes to secure all loose nuclear materials in the world within four years and take measures to prevent the theft of loose nuclear materials. DOE's preference of closing the fuel cycle would make this goal less tenable, not more. Another general aim of the incoming

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Administration, again, quote, "do not contribute to the proliferation of nuclear materials and fuel production facilities and to prevent the expansion of fuel cycle technologies that can produce bomb-grade plutonium and uranium." Yet, DOE's favored conclusion pursuant to the draft GNEP PEIS makes the future President and his successors' non-proliferation goals less tenable, not more. Closing the fuel cycle creates more bomb-usable plutonium in the world in a form that can be misused, is easier to handle and thereby steal, and thus exacerbates the threat of nuclear terrorism. This is a conclusion that has been echoed by the bipartisan FY 2009 House Energy and Water Appropriations Subcommittee Report. It references GNEP no less than 25 times, not once making a positive reference about advanced reprocessing's capacity to address proliferation challenges under GNEP. The bipartisan congressionally created Commission on the Prevention of

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Weapons of Mass Destruction Proliferation and Terrorism World at Risk report was released last week. According to the Washington Post, the panel reported Monday that the world is more likely than not to experience a WMD attack during Obama's term in office. The country's margin of safety is shrinking, not growing. That report recommended strengthening proliferation agreements internationally. Unsurprisingly, it did not conclude that initiatives like GNEP would provide relief from the nuclear terror threat the way the draft PEIS suggests. The draft PEIS would make the prevention of a nuclear catastrophe between now and 2013 less tenable, not more.

Finally, the keystone fact-finding report which was coauthored by industry officials, people from the nuclear industry and the utility industry, it assessed that GNEP is not a strategy for resolving either the radioactive waste problem or the weapons

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proliferation problem. The group agrees with these following assumptions. All grades of plutonium, regardless of the source, could be used to make nuclear explosives. Reprocessing poses a problem in non-weapon states and even in weapon states, and one should not increase stocks of plutonium.

Rather than investing billions in unproven technologies, UCS recommends that we cease research and development of spent fuel reprocessing technologies that do not unequivocally meet the spent fuel standard, that we should harden onsite storage at nuclear reactor facilities today. Congress is not convinced, the NAS has not been convinced, health advocates, independent scientists are not convinced, and the industry is not convinced, yet DOE continues to press ahead. I urge you to reject the option that would close - any option that would close the nuclear fuel cycle. Thank you.

MR. BROWN: Thanks very much.

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Okay, Irene? And Irene will be followed by Steve Kraft.

MS. NAVIS: Good afternoon. Thank you for allowing me the opportunity to speak. My name is Irene Navis. I'm Planning Manager for Clark County, Nevada's Nuclear Waste Division. I appreciate the opportunity for this public hearing and the extension of time on the comment period. Like other Nevada counties that are here today speaking, Clark County enjoys affected unit of local government status as part of the nuclear waste program for Yucca Mountain. We are a county of nearly 2 million people, 8,000 square miles in size, adjacent to Nye County. We're about the same size as the State of New Jersey. We are 90 miles away from the proposed Yucca Mountain repository and for the following reasons we request that the GNEP PEIS be heard also in Nevada for many reasons, the most important of which is that Clark County contains the key network of highway and

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railways integral to the Yucca Mountain transportation plan.

Due to the important role that we may play in transportation, we noticed pretty quickly that there appears to be a weak linkage between the GNEP PEIS and the Department of Energy's National Transportation Plan for Yucca Mountain. We recognize that this is a PEIS and therefore may be lacking in some important details, and our formal written comments will focus on important gaps, overlaps and lack of important analysis and information. For example, we would like to see further detail about how the PEIS relates to the rail EIS for Yucca Mountain. Our initial review indicates that the PEIS appears to be an example of a segmented federal action which promotes compartmentalization of related DOE programs and will likely result in fragmented planning and implementation. Implementing GNEP will result in many of the same impacts as Yucca Mountain project in

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terms of transportation impacts, socioeconomics, public safety and security. Some links to Yucca Mountain have been made, but the PEIS we believe should go further. For example, we believe that there's a lack of serious linkage to the Nuclear Waste Policy Act, especially Section 180(c) which pertains to first responder training and technical assistance which would likely result in an unfunded mandate for public safety costs to local governments. Your presentation today on Page 17 talked about the closed fuel cycle would require more transportation and handling than the open fuel cycle. This is very important to us because Clark County has regional first responder and Homeland Security responsibility as well as public health responsibilities, being home of the only county-level Trauma 1 burn unit and decontamination-capable hospital in the region. The PEIS does not appear to recognize this role and responsibility. For example, in

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Appendix E in Section 1.3 on Page E-3 it states that states and tribes along shipping routes are primarily responsible for protecting the public. In Nevada anyway this is a local government responsibility which should be acknowledged and better addressed in the PEIS. Thank you so much for your time and attention.

MR. BROWN: Thank you. Steve Kraft is next.

MR. KRAFT: Well, good afternoon. Thank you for the opportunity to speak today. It's unfortunate, Holmes, that we only get to see each other in these situations. I'm Steven Kraft. I am Senior Director of Used Fuel Management at the Nuclear Energy Institute. We are the Washington-based policy organization for the nuclear energy industry. I appreciate the opportunity to address the draft PEIS.

DOE's program as described in the draft PEIS would support advanced technologies

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to expand nuclear energy both domestically and internationally while reducing impacts associated with used fuel management. The nuclear energy industry supports DOE's efforts to begin recycling used fuel rather than directly disposing of it and use the considerable energy content that remains in used fuel as a strategic resource for a new era of nuclear plant construction in the United States in the long run. The draft PEIS generally is consistent with the industry's integrated used fuel management policy with one very important exception. It does not recognize the strategic value of central interim storage. Interim storage is the first and most urgently needed element of a three-pronged approach to integrated used fuel management. Integrated storage at both reactor sites and central locations is the first element of our strategy. The industry and the Nuclear Regulatory Commission agree that used fuel storage at nuclear plant sites

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and at independent sites is safe and secure. Such storage would provide time needed to develop the advanced recycling technologies that are the subject of this PEIS as well as the geologic repository for the material that cannot be recycled. As has been emphasized in the PEIS and some speakers, there is no fuel cycle yet discovered that does not have the need for geologic disposal at some point. While at the same time demonstrating the nation's ability to begin central management of used nuclear fuel. Do not underestimate the value of our demonstrating our ability to do that. In addition and part of that demonstration, DOE could contract for services with a private storage operator so it could meet its legal and contractual obligations to take used fuel from current reactors, especially those permanently shut down. NEI believes that there are communities in the United States willing to host safe, central interim storage facilities, and further, that

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there are industrial companies that would be willing to seek an NRC license for and build such facilities.

Second element is robust research to develop demonstration and eventual operation of facilities to recycle nuclear fuel. Just to repeat something that Dr. Savage had in his presentation. The objective is to reduce the volume, heat and rate of toxicity of the byproducts. At this point, let me just deviate from my notes and make an observation. Maybe it's my age, but I get confused because I'm not sure whether the people who have been at the podium today who are raising concerns and questions about the PEIS are discussing current technology reprocessing or advanced technology reprocessing. And I don't want to get into a debate, I just want to make the observation that when you write your comments you make it clear what you're complaining about. Because I can hear some of the answers that you might

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get to what you say if you're not specific are already in the EIS. Development of a permanent disposal facility is of course the third aspect of our policy. Isolation of byproducts in a specially designed underground repository is consistent with international scientific consensus.

Some specific details worth mentioning, and we will of course file comments at the appropriate moment. That the DOE's plan to eventually recycle or to have the nation recycle used nuclear fuel rather than to directly dispose of it is consistent with views held by scientific and government leaders in many countries that currently use nuclear energy or are going to develop nuclear energy. We think DOE is correct in stating that the agency should not at this time select any specific fuel cycle technology, keep options open, accommodate future technological developments, but leaves open the possibility of starting with current technology, perhaps

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with appropriate advances to improve proliferation resistance as a base for future developments. DOE recognizes, as I said before, the need for geologic disposal, and unfortunately just to repeat that they have not seen fit to analyze the value of central interim storage and to see the complementary role that that can play with the work that they're proposing. Given the long lead times to facilities related to all three stages of the integrated used fuel management system, we believe it is important for DOE to work closely with industry in developing a timeline for R&D, technology selection, siting licensing, construction, operation of all three of these facilities.

While this draft PEIS is necessary, it is certainly not sufficient as a vehicle for decision-making on how to close the nuclear fuel cycle. And I think everyone recognizes the nature of the programmatic EIS versus the site-specific and facility EIS's

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which of course would be necessary. Technology selection for recycling facilities must be based on a firm understanding of the environmental impacts and a broadly based detailed analysis that allows rigorous comparison of alternatives. Furthermore, a stepwise decision-making approach should be taken and used in the technology selection and development of alternative fuel cycle facilities. An extensive understanding of environmental impacts is necessary, of course, as most every speaker has mentioned today, and so to maintain its usefulness and provide this information and transparency, if DOE is going to continue pursuing this program, it should remain committed to updating or supplementing the analysis in the EIS as new information becomes available.

The last point I would like to make is that a development of a regulatory framework by the Nuclear Regulatory Commission is a necessary part of the licensing process

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for new fuel cycle facilities. Planning and resource allocation for the NRC to develop these frameworks, including development of regulatory guidance should not be ignored as part of this program. With that, let me again thank DOE for the opportunity to speak today.

MR. BROWN: Thanks, Steve. Our next speaker is Leonor Tomero. She will be followed by Lorien Vecellio.

MS. TOMERO: Thank you very much. My name is Leonor Tomero. I'm the Director of Nuclear Non-Proliferation for the Center for Arms Control and Non-Proliferation. Thank you for this opportunity. The alternatives assessed in detail under the programmatic environmental impact statement do not meet the objectives of the Global Nuclear Energy Partnership, namely the goals of contributing to solve the problem of nuclear waste, decreasing the risk of nuclear proliferation as it relates to nuclear energy, and do not take into account the cost and realistic time

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frames of most alternatives while failing to include a detailed study of the more promising alternatives. I'd like to briefly go through these six points.

First, many of the alternatives assessed would likely exacerbate, not reduce the proliferation risks of nuclear energy. Reprocessing, which is considered in most alternatives discussed in the PEIS, increases the risk that bomb-grade material will fall into the hands of terrorists. By engaging in these steps that remove many of the necessary barriers that prevent terrorists from acquiring material for a bomb and increasing the production of nuclear weapons-usable material, or material that could be easily converted to pure plutonium, reprocessing increases the risk that this dangerous material will fall into the hands of terrorists. France, the United Kingdom and Japan have accumulated over 192 metric tons of plutonium from commercial reprocessing. As

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nuclear terrorism remains one of the gravest threats to U.S. security, the United States should pursue policies that will reduce the stocks of plutonium rather than produce additional plutonium or material that could be easily separated to yield nuclear weapons-usable plutonium.

Second, reprocessing weakens U.S. non-proliferation efforts which is not addressed in the programmatic environmental impact statement, and the proliferation assessment has not been released yet despite promises that it would be released in the same time frame as the PEIS. Focus on reprocessing and fast reactor technology significantly undermines U.S. and international efforts to prevent the spread of reprocessing and uranium enrichment technologies to other countries. GNEP's vision of supplier countries that would be allowed to reprocess has already encouraged other countries to seek this technology. In addition, the position that a handful of

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countries including the United States can engage in this process while all other countries should forgo these technologies because of the risk that they could use them to produce material for nuclear weapons directly undermines decades of nuclear non-proliferation efforts. Since 2006 when GNEP was announced, South Africa, South Korea and Canada have expressed interest in acquiring reprocessing technology. In addition, one of the proposals would promote the use of CANDU reactors which are generally considered less proliferation-resistant than light water reactors.

Third, the alternatives assessed in the PEIS do not appropriately assess the cost of the proposed alternatives. In 1996, National Academy of Sciences report concluded that reprocessing and plutonium reuse would cost the taxpayers at least an additional $100 billion for waste disposal. The DOE has not released any life cycle cost estimates for

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reprocessing and plutonium reuse since the 1999 report that estimated the life cycle cost of reprocessing and plutonium reuse in fast reactors would be $280 billion. The economics of reprocessing do not justify change from the current ones through fuel cycle practice. GNEP envisions the deployment of dozens of fast reactors which are more expensive than the proliferation-resistant light water reactors. The U.S. nuclear industry has not expressed any willingness to share in the cost of or make any investments in reprocessing. Thus, the cost would be borne entirely by taxpayers and ratepayers.

Fourth, the alternatives assessed in the PEIS do not contribute to solving the nuclear waste problem. The alternatives include the separation of materials through reprocessing. The reuse of some of the material in fast reactors and/or light water reactors do not provide a viable solution for the problem of nuclear waste and will create

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additional waste streams compared to the no-action alternative. The PEIS acknowledges that low-level waste will be produced from many of the alternatives, but does not propose where to store or dispose of these waste streams. Similarly, many of the proposed alternatives would separate the highly radioactive fission products cesium and strontium, and proposed to store these fission products in a permanent geological repository, or store them for 300 years. In addition, the PEIS fails to consider the waste streams produced by reprocessing such as iodine-131 and iodine-133 and iodine-129 which in the case of France are dumped in the North Sea. Moreover, the promise that reprocessing and plutonium reuse in fast reactors will reduce the rate of toxicity of the nuclear waste is still an illusion as safe and economically viable fast reactor technology is still decades away at best, despite years of international research.

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Fifth, the PEIS considers for its 2010-2060 time frame alternatives that are not yet available on a commercial scale. Fast reactors and high-temperature gas-cooled reactors still need significant research and development. In the case of fast reactors, most fast reactors in the world have been shut down because of safety and operating problems, high cost and local opposition, and Congress terminated plans to build a Clinch River fast reactor in Tennessee in 1983 after costs had ballooned to $8 billion compared to the original projected cost of $400 million. However, several PEIS alternatives assume the deployment of dozens of these reactors. Even the more proven technologies such as the available reprocessing technology considered in the PEIS have been failures. In 1972, the only operating reprocessing plant in the United States located in West Valley, New York, was shut down after only six years of troubled operation, and it left major

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environmental contamination at a cost of $5 billion for the cleanup of the commercial reprocessing part of the operation.

DOE plans for rapid deployment have been criticized by a 2007 National Academy of Sciences report and a 2008 Government Accountability Office Report. In addition - I'm sorry, and sixth and finally I'd like to note that the PEIS dismissed and failed to consider seriously more promising alternatives. The PEIS, while focusing on technology that requires significant R&D or existing technology that does not reduce the radiotoxicity of nuclear waste, but increases the cost, safety and proliferation risk of disposal, dismissed more cost-effective, safer, more proliferation-resistant and less contaminating alternatives, such as the once-through fuel cycle without reprocessing, interim dry cask storage onsite, and the development of renewable resources of energy. Thank you very much.

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MR. BROWN: Thank you. Lorien Vecellio? Is Lorien here? Okay, without much warning Diane D'Arrigo, you're next. And Diane will be followed by Pamela Moffat.

MS. D'ARRIGO: I'm Diane D'Arrigo, Radioactive Waste Project Director at Nuclear Information and Resource Service. We're a national organization watch-dogging nuclear power waste and radiation issues. We oppose GNEP, we oppose reprocessing and believe that the PEIS should be withdrawn. The history of reprocessing is pretty much completely ignored. The Department of Energy appears to be an organism with many arms and no brain connecting the activity of the different arms. At the very same time that we're looking at this GNEP proposal to start reprocessing in the United States again, we are also looking at a DOE draft EIS for the cleanup of the West Valley site. It's been mentioned a couple of times. That site is the only place in the U.S. where commercial reprocessing took place.

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It's projected to cost for the entire site which includes commercial nuclear power low-level waste $10 to - $9.9 to $27 billion to clean up. While the Department of Energy promotes new nuclear reprocessing, it is ignoring the reality that there are many uncertainties for this reprocessing that already took place. And I'll read just a couple of lines from the draft EIS for the cleanup of the West Valley site. One of the options, and the DOE's preferred option for that site is to clean up some of it now and over the next 30 years decide what to do about the waste that's there that they really don't know what to do with. Waste disposal options, one of the uncertainties. The lack of availability and regulatory limitations on disposal sites for commercial Class B and C low-level radioactive waste, greater than C waste, potential non-defense transuranic waste and high-level radioactive waste creates uncertainty about how disposal of these wastes

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should be accomplished. The Department of Energy admits that this site is going to erode into the Great Lakes, it's just a matter of how long it's going to take, and that the amount of radioactivity that's at the site will cause significant - potentially could cause significant contamination and exposures. There's really not - the discussion is whether to try to build barriers to keep it from leaking faster, so some of this will be dug up now and then more of it will be - we'll decide later whether to dig up more of it or if we can keep fighting the plumes that are migrating from the site and try to cut off the gully heads that are eroding in this very erosion-prone site. It's a unique site in that way, but we're looking now in the tens of billions of dollars for one year's worth of commercial reprocessing. It took six years to do the reprocessing, and even if the new reprocessing technology is going to be improved, we still have not dealt with and

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we've not - we've got fights between New York and DOE over who, if either, is going to pay to clean up this mess. I don't see how we can get off thinking that we're going to have new reprocessing at a point when the old reprocessing waste threaten the whole Great Lakes, Lake Erie, Niagara Falls, Niagara River, Lake Ontario, and this is not really in dispute. The dispute is who cleans it up, when and how we clean it up, and if we clean it up. So I'm trying to point out that on one hand we have this one EIS proposing new reprocessing, and on the other hand we've got nobody willing to take responsibility for the long-term costs from the previous reprocessing that took place, and that's foolish and it's unacceptable.

When you look at the DOE's other EIS that's in a different stage right now, the greater than Class C search for disposal, a lot of that nuclear waste, the greater than Class C waste comes from reprocessing and

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that's one of the excuses we're being told that we can't dig this up and prevent it from leaking into the watershed is because we don't have a greater than C waste site. And so DOE has an ongoing EIS to deal with that, but that's not part of the GNEP proposal to solve the greater than Class C waste first. We've got a lot of mixed waste. We only have four tanks at West Valley and we've got hundreds of tanks, or dozens anyway, of tanks at the other sites where reprocessing took place in the country, many of which have been shown to be leaking.

The mixed waste, high-level waste and low-level mixed waste, there is no permanent disposal for that. The State of Washington citizens have spoken out that they don't want more waste coming there, although the courts have overturned their opposition and so legally waste could go there. The reprocessing facilities would have nowhere to send even their Class B and C low-level waste

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unless they are in the states that have access to Barnwell or Hanford for the time that Barnwell stays open. So the lessons learned really have not been heard. And then of course Yucca Mountain is not a sure thing. In fact, it's an unlikely thing at this point and so what happens with the high-level waste? We've got high-level solidified waste at West Valley with - I'm not quite sure where it is in the queue, but it needs a place. None of this is really effectively admitted or addressed in the EIS, and this EIS process at West Valley has been going on since the 1980s, late 1970s.

So my final points, just want to make sure I hit them all, that the West Valley site lessons should be learned, that the other EIS's that are ongoing should be incorporated, that - the final point would be, as has been stated by many of my colleagues, the idea of spreading nuclear technology which is part of the purpose of GNEP is to expand nuclear power

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both here and internationally in an era of fear of terrorism is simply foolish.

MR. BROWN: Thank you. Pamela Moffat.

MS. MOFFAT: Good afternoon. I'm here as a member of the Episcopal Peace Fellowship. Often at other hearings I've seen a lot more faith-based faces that I knew in the audience. The last eight years have changed the meaning of faith. One final manifestation of this was the two recent conventions. Freed of any invocations or benedictions, they were unusual in being almost totally faith-neutral or faith-free. One ominous result of this departure is that the means by which our nation defends itself seem to have been freed from moral analysis or ethical corrections. Preemptive war and torture are now approved. Whatever means are needed to win are now acceptable, no matter the harm to our founding documents, to humankind or to the earth. We come back over

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and over again to Congress, to public hearings to speak against yet another flawed proposal. Few of us are lawyers, but we testify on behalf of humanity and for the survival of a moral world in which self-interest and profit are not the dominant deciders.

While we speak, our task has become more difficult over recent years. Science and religion have become out of touch with each other. The flaw seems to be that faith is seen as still clinging to an outdated image of a static planet in a static universe. A Catholic theologian has written that we need to realize that God is less concerned with imposing design on processes, and more interested in providing nature with opportunities to participate in its own creation. A challenge to all of us. The religious voice, I believe, must include all faiths and be the shared plumb line used to assess every old and treasured theory as well as each new proposal. GNEP does not, from

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what I've heard today, seem to measure up. We need better. The DOE books, and I hesitate to sign up for the new one because the old one must weigh about four pounds, it contains a subliminal message. The key piece of their nuclear future is that we are the nation's first and will have the nation's first proposed geologic repository. The second is already mentioned in the report, although the first one if it were open tomorrow could not contain all the waste which we now possess, could it safely and acceptably be moved to Yucca Mountain? No one since I've been here has talked about the instability of the geologic repository's site. There are bumper stickers that I've seen that say Yucca Mountain is moving, which it is. It will leak into water aquifers. It will - what sort of label will they put on this site? And the second site, and the third site, when they are sealed up, that people millions of years from now should there be any will be able to

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interpret? One of my prescriptions had a squiggle on one of its little labels and I thought what on earth is that? It is the coils on the back of your refrigerator. That medicine needed to be refrigerated. If we can't psych out these messages, what about our future followers?

The DOE book has some beguiling little drawings worthy of a children's book, but to me the centerpiece is the aerial photo in color of an open pit uranium mine the size of who knows how many football fields. The ultimate commodity, the nuclear commodity, which is now being produced worldwide. It makes open-strip coal-mining look like Sunday School pictures. There is a quote at the front of Richard Rhodes' 2007 book Arsenals of Folly: The Making of the Nuclear Arms Race. He gives it a page all alone. Reality is that which when you don't believe in it doesn't go away. GNEP is really the latest pie in the sky. When perhaps some future public hearing

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is held, those testifying produce alternative options which are dismissed as pie in the sky, people and perpetrators being told that no one could possibly make these proposals work, I hope that someone in the back of the room will stand up and call out yes, we can.

MR. BROWN: Thanks very much. Has Lorien Vecellio returned to the room? Okay. Pamela concludes the list of folks who had signed up ahead of time to speak. So let me ask if there's anybody else in the audience who hasn't spoken who would like to add any comments at this point? Okay, I think that then concludes this hearing. I want to thank everybody for your attendance, your attention and for your comments, and we are officially adjourned. Thank you.

(Whereupon, the foregoing matter went off the record at 3:24 p.m.)

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