Alliance for Nuclear Accountability

A national network of organizations working to address issues of nuclear weapons production and waste cleanup
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Comments at February 2, 2012 Public Meeting on the
Second Amended Notice of Intent to Modify the Scope of the Surplus Plutonium Disposition Supplemental Environmental Impact Statement

Good evening, my name is Susan Gordon and I'm the director of the Alliance for Nuclear Accountability, a network of 35 local, regional and national organizations representing the concerns of communities in the shadows of the U.S. nuclear weapons sites. I'm based in the organization's Santa Fe office.

I appreciate this opportunity to comment on the amended Supplemental Environmental Impact Statement on plutonium disposition. I will submit these written comments for the record and ANA will submit more extensive comments by March 12.

In preparing comments on behalf of ANA, I draw attention to the fact that we have a member of the ANA staff who is based in South Carolina and who, along with ANA, has closely followed the troubled plutonium fuel (MOX) program since its inception almost two decades ago. We are thus quite aware that the meeting being held tonight is yet another indication of on-going problems confronting DOE's administration of the plutonium disposition program and that cost overruns, schedule delays, technical challenges and lack of mission clarity continue to plague DOE.

By DOE's own admission the EIS process for which comments are being sought began five years ago, which reveals that confusion persists with this program. And, even more telling, the NEPA process for the overall plutonium disposition program began in June 1994, with the Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement (SPEIS). In the subsequent 18 years not a single gram of plutonium, beyond small amounts of test material, has been disposed of via the so-called "preferred alternative" - use of the controversial mixed oxide fuel (MOX) for nuclear power reactors. This program stands as a monument to DOE ineptitude in pursuing a misguided mission that has fallen prey to manipulation by special interests such as the French government-owned company AREVA.

It is abundantly clear that the elimination of a costly stand-alone Pit Disassembly and Conversion Facility (PDCF) is being done because the construction of the $5-billion MOX plant at the Savannah River Site is eating up the bulk of funds for plutonium disposition and a large percentage of DOE's overall non-proliferation budget. What is being presented as a prudent decision to cut costs actually indicates that costs for the MOX program have spiraled out of control and are placing other more important parts of the DOE budget under huge stress.

In my brief comments here, I will focus on a few key points that must be addressed in the SEIS:

Plutonium fuel (MOX) as the "preferred alternative" for plutonium disposition must be reconsidered. It remains unclear if the MOX program will ever be carried to fruition given both the lack of reactors to use MOX and the absolute inability of DOE to outline the operational schedule of the MOX plan now under construction at the Savannah River Site. It is thus past time to revisit the decision to pursue MOX fuel as a route for plutonium disposition.

It is becoming clearer that production levels at the MOX plant, if it is ever operates, will be greatly constrained not only because of lack of reactors but also because of the MOX testing program that will be required in one of the Tennessee Valley Authority's Browns Ferry reactors. Testing of MOX "lead test assemblies" in one of the Browns Ferry boiling water reactors (BWRs) will take 6 years, followed by many years to review the test, possibly followed by pursuit with the Nuclear Regulatory Commission (NRC) of licensing for commercial use. MOX testing in one of the Sequoyah pressurized water reactor (PWRs) may well have to be repeated and this would take almost 6 years, followed by years of post irradiation examination and licensing pursuit. Thus, the $5-billion MOX plant at SRS is at risk of sitting partially or totally idle even if it can obtain an operating license, which is being challenged by public interest groups, and get through demanding start-up testing.

The urgent need for a comprehensive study on options to manage plutonium as waste is clear. While the notice mentions that the "glass can-in-canister" option is included for review, which we support as a viable disposition option, DOE must immediately place other disposition options back on the table. As the MOX program is possibly fated to total failure, it is incumbent that DOE now begin a new analysis of all non-MOX options, some of which were included in early NEPA analyses. DOE must keep actively pursue an array of non-MOX disposal options open lest the collapse of the MOX program results in a total halt to pursuit of disposition of plutonium. This is an unacceptable outcome that is becoming more possible given DOE's mismanagement of the overall plutonium disposition program.

Details of the schedule for use of plutonium feedstock in the MOX plant at the Savannah River Site must be discussed. The public must be informed of the amounts of plutonium that will be needed and the schedule for the use of the feedstock produced at potential facilities being considered for the pit disassembly mission. DOE must demonstrate that the feedstock will actually be needed and used in the MOX plant and so far neither a demonstrated need nor a schedule for plutonium feedstock use has been presented. If there is no clearly defined need for plutonium feedstock, then the program as outlined in the Amended SEIS notice is premature at best and any decisions following the SEIS would be questionable.

The source of plutonium feedstock destined for production into "lead test assemblies" for required MOX irradiation testing must be defined. DOE must discuss if this material will come from the ARIES process at the Los Alamos National Lab and present the schedule for LTA fabrication for both BWR and PWR testing. Likewise, DOE must explain what feedstock materials are planned for use in start-up testing and initial operation of the Mixed Oxide Fuel Fabrication Facility at SRS, if that facility ever operates.

DOE must fully explain what it means by analysis of MOX use in a "generic reactor…for any additional future potential utility customers." DOE claims to be focused on use of MOX in Tennessee Valley Authority reactors, but inclusion of a "generic reactor" in the SEIS notice implies that DOE is far from certain if it will secure TVA's reactors for MOX use. DOE must

reveal plans that it may have as to soliciting more utilities to provide nuclear reactors to potentially use MOX, explain what type of reactors are being sought and discuss the impact of the MOX-use timeline if "generic" reactors are solicited. Additionally, any modifications to the MOX plants must be discussed for providing "generic MOX," including physical modifications needed and associated NRC licensing impacts.

Any solicitation of "generic" reactors may imply that DOE is aiming to provide MOX in smaller batches to a number of nuclear reactors across the country. As it is likely that pursuit of MOX by more utilities will be met with great concern by the public and that reactor safety and licensing issues will place great hurdles in the path of pursuit of such "generic" reactors, DOE must reveal which utilities beyond TVA and Energy Northwest are being pursued to provide reactors for MOX use.

It has been reported that DOE is soliciting low-enriched uranium (LEU) fuel fabrication vendors to have their fuel design be made into MOX fuel by AREVA in the SRS MOX fuel plant. Therefore, the SEIS must full discuss the solicitation by DOE or contractors of such vendors as GE, Westinghouse and AREVA and describe how MOX would be made to the specifications of the various LEU vendors.

In an "Interim Action Determination" (http://energy.gov/sites/prod/files/EIS-0283-S2-IAD-2011.pdf) signed on April 1, 2011, an SRS official indicated that the design of the MOX plant at SRS was going to be changed to allow MOX fabrication lines "to produce fuel for boiling water reactors (BWR) and next-generation light water reactors, in addition to the current capability for manufacture of pressurized water reactor (PWR) fuel."

The SEIS must discuss the MOX plant modifications indicated in the "Interim Action Determination" and fully explain just what a "next-generation light water reactor" may be. It appears that DOE is speculating on MOX use in some type of non-existent reactor, further revealing that DOE is concerned about existing reactors being licensed to test and use MOX fuel. DOE must reveal what MOX plants design changes will take place, what the capacity will be of the new MOX fabrication lines, when they will be operable, when fuel will be delivered from them and what the costs associated with MOX use in "next-generation light water reactors" is estimated to be. If answers to these questions don't exist, the SEIS must present the elimination of the "next-generation light water reactor" option.

As reveled by documents obtained via the Freedom of Information Act, in a secret meeting on April 22, 2009 between DOE, TVA, AREVA, MOX Services and Oak Ridge National Lab, there was a discussion about the "need to make fast reactor fuel for the first core of a Advanced Recycle Reactor and the MFFF ability to fabricate this fuel if it is oxide fuel." Any plans or capability for production of such fast fuel in the MOX plant must be fully discussed in the SEIS.

Likewise, production of plutonium fuel for any "small modular reactor" located at SRS or any other site must be discussed in the SEIS. Savannah River Nuclear Solutions has publicly indicated that SMRs being pursued at SRS could burn plutonium fuel - in particular the sodium-cooled GE PRISM reactor - yet there has been no presentation about how or where the fuel would be fabricated. If a role is foreseen for the MOX plant to produce SMR fuel, including metallic fuel, this must be discussed in the SEIS.

The risks and uncertainties of expanded pit processing in the PF-4 facility at Los Alamos must be discussed in detail. Risks related to criticality, vault storage, cost and schedule, secure shipping and handling, waste handling, staffing, worker dose, and impacts to other programs are among the possible risks. Given recent attention to seismic risks at the PF-4 facility, a new technical basis for seismic impacts must be prepared for the facility. Among other things, this must address risks associated with handling and processing larger amounts of plutonium, especially in the more dispersible oxide form.

Risks associated with ramping up production of plutonium feedstock using the Advanced Recovery and Integrated Extraction System (ARIES) equipment must be discussed given that this process was never envisaged to be a production-scale facility. The SEIS must discuss risks associated with ARIES contingency plans if higher throughput is necessitated to provide feedstock for the MOX plant in the eventuality that the H-Canyon and other SRS facilities would not be available for pit processing.

The SEIS must discuss the types of pits that would be processed in the PF-4 facility and discuss the risks and uncertainties associated with processing them. The SEIS must discuss specific of processing pit families 1, 2, 3 and 4 and the amounts of plutonium in each type of pit as well as the associated waste streams. Any reports prepared by the NNSA's Office of Fissile Materials Disposition concerning expanded pit processing at LANL must be discussed in and attached to the Draft SEIS.

An assessment must be made if the LANL Site-Wide Environmental Impact Statement (SWEIS) will need modifying given any new pit disassembly mission.

DOE must proceed cautiously in the disposal of non-pit plutonium in the Waste Isolation Pilot Plant. The only way that such disposal will be considered is if the requisite Waste Acceptance Criteria are met and other regulatory requirements are met and if there is sufficient volume in WIPP, as specified by law.

We note that any decision to ship contaminated non-MOXable plutonium to WIPP is an affirmation that disposal of plutonium utilizing the "spent fuel standard" – by which plutonium is placed in a matrix with a radiation barrier – is essentially dead. The SEIS must discuss this shift in the guiding philosophy that was originally behind the plutonium disposition program and why a decision was made to eliminate the "spent fuel standard" as the approach to plutonium disposal. Elimination of the "spent fuel standard" opens the door to cheaper disposal options that do not necessitate a radiation barrier.

Given that the MOX program is in trouble and well could fail and that DOE has so far refused to prepare an alternatives disposition study, the possibility of disposing of all surplus weapons plutonium in WIPP may arise. The possibility of such a troubling approach raises a host of legal, regulatory and environmental concerns that must be discussed in the SEIS.

Finally, details of processing plutonium at facilities at the Savannah River site must be discussed in details.

In the transformation over the past year of the H-Canyon from an aging reprocessing facility into a "national asset," the search for new missions for the H-Canyon has intensified apace with the

lobbying for the continued operation of the facility. The justification that underscores this effort rests squarely on the fact that the H-Canyon brings in around $150 million per year to SRS and thus contractors at the site will fight to continue receiving this budget allocation.

Technical details of the H-Canyon's ability to receive and process pits must be discussed in detail, including which families of pits would be processed, which dissolver line would do the processing, what the capacity of H-Canyon is to process pits, what upgrades are needed and the associated costs of such upgrades, criticality concerns, worker dose, waste streams, and risks and uncertainties including impact of a rapid shutdown, with and without restart, of H-Canyon during a pit processing campaign.

DOE must provide information in the SEIS as to how plutonium is being packaged at the HB-Line for disposal in WIPP and how such packaging meets the WIPP Waste Acceptance Criteria. At SRS, plutonium is being packaged into Pipe Overpack Containers and being blended with a special material – "stardust" – to make the removal of the plutonium more difficult via chemical processing. The nature of the "stardust" material must be discussed as well as the packaging process and associated risks and uncertainties. Packaging capacity, criticality risks, waste streams, condition of aging equipment, worker dose and anticipated shipment schedules are but a few of the issues which must be addressed about use of the HB-Line.

The role of K-Area is preparing pits must be fully discussed, including pit receipt and storage, methods to declassify and cut up pits, criticality issues, impact on pit handling on other K-Area missions, worker dose and security aspects in pit transport, shipping and receipt.

The notice fails to discuss the role of the MOX plant itself in processing pits. As the MOX plant is being built with a modified PUREX facility inside the plant, the role of this "polishing" facility must be discussed, along with the impact on other MOX operations of adding a new pit mission to the facility. The SEIS must discuss how the MOX plant design and chemical processing will be changed in any new license amendment submitted to the NRC and how the review of the license and the associated intervention challenging the operating license of the plant will be impacted. Likewise, the SEIS must discuss how the MOX plant EIS will be amended and what the anticipated schedule is for that process, including the required public meeting.

Thank you for the opportunity to submit these comments.

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