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From: "Tom Clements" <tom clements@wdc greenpeace org>
To: <teh@nrc.gov>
Date: 8/30/02 5:06PM
Subject: EIS comments

Attached, you will find some comments on the NRC's plutonium disposition EIS. I reiterate my request to hold the comment period open until such time as DOE fully reveals the nature of the plutonium disposition program, including a full accounting of where the plutonium is coming from and all purification and disposition tracks. Preparation of an EIS by the NRC may well be premature given this glaring lack of information from DOE as well as the lack of key documents from DCS.

I have also faxed these comments.

Thank you very much.

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(6)

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8 pages - faxed and e-mailed

Mr. Mike Lesar
Chief, Rules and Directives Branch
Division of Administrative Services
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Mail Stop T-6D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

attn: Tim Harris

Dear Mr. Lesar:

These comments are being submitted as part of the official record for the Environmental Impact Statement (EIS) being prepared by the Nuclear Regulatory Commission (NRC) on the MOX Fuel Fabrication Facility which the U.S. Department of Energy (DOE) is pursuing at the Savannah River Site.

I request that the record for comments not close until such time as DOE clearly and precisely reveals the nature of the plutonium disposition program. In spite of various DOE statements, key details about the program are being kept from the public. Most notable among these is lack of an inclusive listing of what plutonium from which sites DOE aims to process into MOX or disposed of via other methods. It is unclear which plutonium DOE intends to purify inside the MOX Fuel Fabrication Facility (MFFF) or via other purification methods, such as in one of the SRS reprocessing complexes.

Likewise, specific details of contaminants in the plutonium have not been revealed. Also missing from DOE is any information on the waste solidification plant which both the NRC and Duke Cogema Stone & Webster (DCS) have said will be needed to support handling of waste coming from the MOX facility. The nature and location of that facility, where waste from it will be disposed, its cost, and schedule of NEPA documentation are all lacking. Until detailed information is released by DOE on these points and other aspects of the program it is difficult to comment on a program which appears in large part to remain on the conceptual level

In spite of the problems which DOE is creating for the program by the chronic lack of openness and apparent refusal and/or inability to reveal to both foreign governments and the public the details about the program, I will nonetheless submit the following comments for the record. Given DOE's failure to provide key information, I reserve the right to provide additional information to any EIS process at any point. I thank you for considering these comments in the development of any EIS as well as any NRC action related to the larger plutonium disposition program.

Plutonium amounts, contaminants, purification methods and disposition pathways must be revealed; new reactors specified;

In earlier EIS Records of Decision, DOE stated that 17 metric tonnes (MT) of plutonium would be immobilized and that it could not be processed into MOX due to cost constraints and technical problems. In the U.S.-Russian plutonium disposition agreement of September 2001, in which both parties clearly recognized the right of each party to dispose of weapons plutonium via immobilization or MOX and in which both parties agreed to a parallel disposition schedule, the U.S. agreed to immobilize approximately 8.5 MT of plutonium in the form of "impure metal" and "oxides."

The U.S.-Russian agreement did not present a detailed list of the origin of the 8.5 MT or of the contaminants contained therein. Additionally, DOE did not explain in the agreement the status of the other 8.5 MT of plutonium, the quantity needed to make up the 17 MT discussed in the EISs. Some of this material, including unirradiated reactor fuel, has been withdrawn from surplus but DOE has not explained how that material will be stored for the long term nor how it will be disposed of.

In January 2002, without any public consultation, DOE announced significant changes to the plutonium disposition program. Although unofficial until presented in an amended ROD, DOE announced cancellation of immobilization in favor of the more expensive MOX option. In its announcement, DOE revealed in handouts that 6.4 MT of plutonium that had been destined for immobilization would now go to MOX and that 2 MT of "very impure plutonium" would be disposed of directly as waste. At that time, DOE did not clarify where the 6.4 MT was coming from nor its make-up. Neither did DOE reveal where the 2 MT was coming from nor where it would be disposed.

Once again, DOE had the opportunity in its February 2002 *Report to Congress: Disposition of Surplus Defense Plutonium at Savannah River Site* to reveal the location and make-up of the 8.4 MT which was being shifted from immobilization and to state how the 6.4 MT would be purified for MOX feed and how the 2 MT would be disposed of. DOE failed in that document to reveal that essential information.

In that document to Congress, DOE did state that 6.4 MT would be "purified using enhanced aqueous polishing in the MOX FFF," but DOE failed to give any details of that purification process. DOE went on to state that it would increase the disposition rate from 2.0 MT per year top 3.5 MT per year, requiring "the addition of two existing

commercial nuclear reactors to the four currently under contract." Amazingly, DOE withheld further details about which reactors were being considered and how an additional two reactors would increase the average consumption from 0.5 MT per reactor per year to an average of 0.583 MT per reactor per year (3.5 MT per year with 6 reactors).

In the document prepared for Congress, DOE stated that disposition by the all-MOX strategy would cost $3.8 billion but DOE failed to explain cost of outlays prior to FY03 figures.

In July 2002, in overheads which are public but which DOE chose to distribute only to a selected portion of the public, DOE presented its *Revised U.S. Plutonium Disposition Strategy*, yet for reasons unknown once again failed to clarify a host of nagging questions about the program. No details were given about aqueous polishing of plutonium being shifted from immobilization to MOX, no explanation was given on how the 2MT of "very impure plutonium" would be disposed of "separately," where the plutonium would come from to make up the "shortfall in agreement with Russia from future declarations,' nor how the "higher disposition rate – 3.5 MT per year" would be achieved using unnamed reactors.

U.S. and Russian Plutonium Disposition: Delinked or in Parallel?

In the February 2002 document, DOE confirmed immobilization to be cheaper than the MOX option. DOE used a new term – "Parallel Progress" – to describe how the U.S. and Russian programs would be carried out but budget figures revealed in the document reveal that DOE does not anticipate such parallel progress in the programs. The budget presented for the U.S. MOX plant totals a whopping $1.73 billion from FY03 to FY08, while the amount projected for the entire Russian plutonium disposition program remains flat at an average of $53 million per year. Obviously, the U.S. is attempting to delink the U.S. program from the Russian program and construct a U.S. MOX plant while essentially no activity is anticipated on the Russian side. Such rejection of the parallel nature of the program not only reveals intent to violate the spirit of the parallel schedule presented in the U.S.-Russia plutonium disposition agreement but also breaches Congressional intent that the programs be carried out in parallel.

Such delinking, which is being done without public input, must be taken into account by the NRC. The NRC must proceed with extreme caution lest it also appear to be taking unauthorized action which attempts to push the U.S. program forward on a lopsided, non-parallel track. Given that the U.S. program has gotten so far out in front of the Russian program, the NRC must now revise all schedules so that each step taken on the program in the U.S. is matched on a parallel, agreed basis by Russia. NRC's schedule for issuing any EISs or construction permits to DCS must be matched by similar steps in Russia .

In July 2002, the Joint U.S.-Russian Working Group on Cost Analysis and Economics in Plutonium Disposition released a report, once again distributed by DOE to only a select

portion of the public, entitled *Cost Implications of Fast Reactor Options in the Disposition of Russian Weapon-Grade Plutonium Withdrawn from Nuclear Military Programs.* While not reflecting the official U.S. position the document is interesting from a number of standpoints. First, it reveals that the Russian program is still casting about for reactors to use for their plutonium disposition program, indicating that great uncertainty surrounds use of the aging Soviet designed VVER-1000 reactors. Second, it clearly shows that a large new plutonium breeder reactor, the BN-800, is being viewed at least by some as having a role in Russian plutonium disposition. The report fails to explain where the funds for building this reactor would come from but estimates the cost to be up to $3.0 billion dollars.

The report does not contain either a proliferation assessment of the reactor, which could be operated so as to produce weapons-grade plutonium, or a technical assessment. Additionally, the report does not discuss how building of such a reactor might result in concern amongst the G-8 countries which may well be asked to fund it or how construction of such a reactor would follow with the terms of the requirement that the programs proceed in parallel. Obviously, if DOE has granted the Russian a veto right over the disposition option chosen for U.S. plutonium then the U.S. and other G-8 countries will have a clear veto right over construction of such a dangerous reactor.

This report reveals the secret hand at work with the plutonium disposition program. Factions in Russia view the plutonium disposition program as a cash cow to help revive its nuclear power industry and to help "close" the nuclear fuel cycle – a misnomer for a leaky, proliferation-prone system. Evidently, there are those in the U.S. who also cling to the "dream" of plutonium use in breeder reactors and who are thus willing to flirt with helping the Russians build their long-desired plutonium-breeding machine, something they have shown that they could never do on their own. A thorough proliferation and technical review should be conducted on funding and construction of the BN-800, including an assessment of just who in DOE wants to partner with the Russian Ministry of Atomic Energy in such a questionable project.

Waste Solidification Plant

It is believed that DOE intends to construct a facility to solidify the waste stream coming from the MFFF, but DOE has remained silent about this facility. It was only at an NRC-DCS meeting earlier this year and mention by NRC, including mention in the April Federal Register announcement that the public is aware of this facility. The announcement stated that "DOE intends to construct and operate a new waste processing building at the SRS to solidify the MOX waste stream (high-alpha and uranium) that were originally planned to go to DOE's HLW tanks at the SRS."

Cancellation of Immobilization

While DOE has said that the plutonium immobilization program has been cancelled, it has failed to discuss this in any NEPA document or any other document open to public

comment. Clearly, DOE must hold public discussion on this decision and simply not pass such discussion off on the NRC.

DOE admits in every document that I have obtained this year that immobilization is the cheapest disposition option. Yet, in spite of this admitted fact, DOE attempts to present that it is saving the taxpayer money by choosing the all-MOX option. This sleight of hand has been noted by many in the public as well as G-8 governments.

DOE claims in the July 2002 overheads that "immobilization only is unacceptable to the Russians." This has been repeated many times but DOE has not provided documentation to this nor how under U.S. law or policy that Russia has any right to determine actions taken by the U.S. Government. Has DOE abdicated control of its own decisions to a chaotic Russian state? As the U.S.-Russian agreement provides for each country to choose its own disposition options, DOE has also not explained how Russia's apparent dictating to the U.S. our disposition option potentially conflicts with that agreement.

Immobilization remains an attractive disposition option and under the original policy, unlike MOX, was considered for disposition of all 50 MT of plutonium which was declared surplus (though DOE has failed to reveal how much is now considered surplus). Immobilization was at least to be a backup to MOX in the event that MOX failed. With elimination of immobilization there is now no back-up track to MOX. What was considered just a few years ago to be risky – not having a backup – is now swept aside by DOE with no discussion. As MOX may fail, for a variety of technical, political and cost reasons, DOE must fully reveal why no backup is now being considered.

In one sense, the plutonium immobilization program survives at SRS. DOE intends to dump solutions containing approximately 80 kilograms of plutonium into Tank 51 and then immobilize it directly with high-level waste.

A plan for the revival of the dormant immobilization program is a prudent step given that it may well need to be utilized to carry out the important plutonium disposition program. NRC should state its view on necessity for a backup option.

Plutonium Packaging at Rocky Flats

According to weekly reports from the Defense Nuclear Facilities Safety Board (DNFSB), there are certain problems with the packaging of plutonium into cans at the Rocky Flats site. These DOE-STD-3013 outer cans are examined and IF a failed weld is found the can is removed and replaced. In at least one instance, an inner can was cut open by a bandsaw while the outer can was being removed, resulting in potential exposure in the plutonium packaging room. Likewise, it was noted that sometimes the inner cans become stuck in the outer cans and have to be hit with a mallet to remove the inner can. The above radiological event resulted in a Kaiser-Hill "fact-finding," with a determination to revisit or revise "procedures and radiological evaluations."

Rocky Flats will stabilize and package the inventory of oxides with less than 80% plutonium content, material which contains "substantial chloride contaminants." Evidently some oxides which are less than 70% plutonium will also be packaged. Given the corrosive nature of these chlorides and possible salt buildup on processing surfaces, the method in which they are handled at SRS will be important.

Plutonium being stabilized for packaging at Rocky Flats is processed at a temperature of 950 degrees Celsius, with some materials evidently processed at temperatures up to 1025 degrees C. A full inventory of materials packaged at Rocky Flats, with amounts of plutonium in each container, amounts of impurities, temperature at which stabilization took place and other key data will have to accompany every can shipped to SRS.

Lead Test Assembly Program

DOE is currently attempting to enlist support from the Belgian and French governments to participate in the program to fabricate the U.S. MOX "lead test assemblies" (LTAs). Ignoring that the Russian program is not also at the same parallel point in its LTA program, DOE is looking at the "Eurofab" LTA option in order to continue its delinked, fast-track program. If the Eurofab option does not go forward, then DOE will likely have to produce the LTAs in the MFFF once it becomes operational, which will mean a multi-year delay in largescale startup and operation of the facility

Given that DOE has refused to clarify details about the program and that NRC is soliciting comments to be considered in preparation of its EIS, NRC must:

o reveal where quantities of plutonium are stored and how they will be transported to and received at SRS and moved into the MFFF;

o present a clear listing of pure plutonium bound for MOX and impure plutonium in need of more purifying, including the contaminants included in each class of material;

o discuss in details the technical aspects of the so-called aqueous polishing processing and how it can remove impurities from plutonium which DOE maintained until January 2002 could not be processed for MOX use; discuss removal of gallium, americium, chlorides, organic material and other contaminants, along with risks of red oil and how that is generated and how it will be processed as waste (including how it is handled by Cogema in the Melox plant);

o discuss how any plutonium considered for purification in a reprocessing complex will be purified and how such purification meets the acceptance criteria for the MFFF;

o storage of waste streams in tanks inside or adjacent to the MFFF plant must be discussed, with a focus on tank capacity, how materials will be pumped and to where, earthquake resistance of the tanks, volume necessary in the event of breakdown in waste solidification;

o details of the planned waste solidification facility, including solidification process, storage on-site of resulting waste, risk to workers and the public, and plans for "final" transport and disposal of the solidified waste; given that the waste product going into the facility will come from the NRC-validated MFFF purification process, the relationship of DOE and NRC in the receipt and management of waste at this facility must be clarified;

o if there is any dual use for a possible new nuclear bomb "pit" plant with either the purification processes in the MFFF or the waste solidification facility, these must be discussed; likewise, if there is any intention or planned ability to process or purify plutonium not bound for MOX or other materials not associated with the plutonium disposition program this must be discussed;

o if any streams coming from the MFFF are considered to be put into the HLW tanks for processing this must be discussed,

o discuss disposition options for the 2 MT of "very impure" plutonium, especially if DOE might reconsider purifying this material for MOX;

o reveal which additional reactors are now being considered for MOX use, how the utilities involved have a demonstrated capability to provide this service and a include a full discussion of the technical aspects of irradiation, including storage of fresh MOX to meet the "stored weapon standard" and various accident scenarios;

o discuss in detail how the LTAs will be manufactured, including required polishing of plutonium and handling of result waste streams, and how the LTAs will be packaged and transported and stored to meet the "stored weapon standard;"

o discuss what activities will take place at the MFFF in the period of years after fabrication of the LTAs, if the MFFF is chosen as the "preferred" option; that is, during LTA irradiation and testing; include budget estimates for activities during this period of time;

o if the U.S. attempts to go forward with an LTA program without any such activities taking place in Russia, the NRC must fully explain why it has jumped on the delinkage bandwagon and is proceeding away from the agreed parallel nature of the program;

o in the event that LTA fabrication in Europe goes forward, the EIS must discuss NRC import and export licensing of such weapons material and how it will be transported to and from Europe, bearing in mind that the U.S. requires an "armed escort" for shipment of plutonium between Europe and Japan;

o NRC must discuss why DOE constantly says that Russia can dictate to the U.S. that an immobilization-only program, as discussed in earlier EISs, will not be acceptable;

o discuss how an early start of the MFFF, long before any start-up of a Russian MOX plant, meets the goal of having the programs be carried out in parallel; discuss how the

o discuss how an early start of the MFFF, long before any start-up of a Russian MOX plant, meets the goal of having the programs be carried out in parallel; discuss how the U.S.-Russian plutonium agreement will be changed given the changed schedules in both countries and especially if the U.S. continues on a build-it-fast track for the MOX plant;

o discuss the relationship of the U.S. and Russian programs, given the lack of clarity as to which Russian reactors may be used for disposition, especially given desire by some to build the BN-800 breeder, a technology which the U.S. and most other nuclear countries have abandoned;

o NRC must discuss why it has authority to discuss in a NEPA document termination of the immobilization program, which seems to be a DOE decision and which falls beyond the scope of work on the MFFF; NRC must fully discuss what role it had in the decision to terminate immobilization and how this decision squares with the earlier policy of having a backup plan in the event that one of the dual-track methods of plutonium disposition failed;

o given that DOE has decided to directly immobilize at the Defense Waste Processing facility (DWPF) some plutonium contained in solutions, the option of such direct immobilization of other plutonium, especially impure materials, must be discussed in the EIS:

o given that DOE-STD-3013 cans packaged at Rocky Flats will be handled at SRS prior to purification of he plutonium contents, there must be a full discussion of how such cans will be opened, what will be done in case of discovery of faulty welds or containers, and potential worker and public exposure in case of handling of failed cans or in the event of more severe accident in handling;

and, finally,

o NRC must discuss how temperature and conditions of stabilization of plutonium at Rocky Flats and other sites impacts purification in the MFFF and fabrication into MOX pellets with uniform plutonium particle distribution.

I request that all DOE and NRC plutonium disposition documents which are supposed to be part of the public record be included in the EIS and be so cited and be made available on-line and in hard copy. Failure to include all documents on which the plutonium disposition policy was reviewed, revised and is being carried out will compromise the final EIS.

I further request that I be added to any lists to which information is communicated about the MOX plant and preparation of the EIS on it.

Thanks you for the opportunity to submit these comments, for your consideration of them, and your response to them.

Sincerely,

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