UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

***

BRIEFING BY DOE ON

PLUTONIUM DISPOSITION STRATEGY AND PROGRAM

***

PUBLIC MEETING

***

Nuclear Regulatory Commission

Commission Hearing Room

11555 Rockville Pike

Rockville, Maryland

Wednesday, September 17, 1997

The Commission met in open session, pursuant to notice, at 9:18 a.m., the Honorable SHIRLEY A. JACKSON, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission

GRETA J. DICUS, Member of the Commission

EDWARD McGAFFIGAN, JR., Member of the Commission

NILS J. DIAZ, Member of the Commission

STAFF AND PRESENTERS SEATED AT COMMISSION TABLE:

JOHN C. HOYLE, Secretary

KAREN D. CYR, General Counsel

HOWARD CANTER, Acting Director, Office of Fissile Materials Disposition, DOE

DAVE NULTON, Director, Reactor Group, Office of Fissile Materials Disposition

ANDRE CYGELMAN, Director, Materials & Immobilization Group, Office of Fissile Materials Disposition

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P R O C E E D I N G S

[9:18 a.m.]

CHAIRMAN JACKSON: Good morning, ladies and gentlemen. The Commission would like to welcome Mr. Howard Canter, Director of DOE's Office of Fissile Materials Disposition, and his colleagues. For the record, DOE is the Department of Energy.

This morning the Commission will be briefed on two things.

First, DOE's plans to implement a program to provide for the safe and secure storage of weapons-usable fissile materials, that is, plutonium and highly enriched uranium.

Second, DOE's strategy for the disposition of surplus weapons-usable plutonium.

In December 1996 DOE issued its final programmatic environmental impact statement on the storage and disposition of weapons-usable fissile materials. The Secretary of Energy announced the record of decision on this matter on January 14th of this year. Shortly after the Secretary's announcement the DOE briefed, on January 17, 1997, the Commission on its plans.

More recently, in July of this year DOE issued a program acquisition strategy for selecting private sector organizations to assist in implementing the MOX fuel

alternative for disposing of surplus weapons grade plutonium.

The Commission is extremely interested in the plans and strategies being considered by the Department of Energy on this topic because the program could affect facilities that the NRC has licensing authority over such as commercial power reactors, the geologic high level radioactive waste repository, and possibly others.

Unless my fellow members of the Commission have any comments they would like to make, Mr. Canter, please proceed.

MR. CANTER: Thank you very much, Madam Chairman and other members of the Commission.

With me today is Mr. Dave Nulton, on my right, who is responsible for the reactor option and our work under the National Environmental Policy Act in doing a supplemental EIS for the siting of the facilities that will be required for plutonium disposition. Dave also has the highly enriched uranium program, which I'm not going to discuss in any detail here today, but if you have questions, we can cover them.

On my left is Mr. Andre Cygelman, who has the immobilization, the pit conversion, and some of the material issues that our office is involved with.

I want to concentrate today on the plutonium

disposition, to go into this procurement strategy for the private sector involvement, talk a little bit about some

legislative authority that may be required, and then talk about what is going on with the Russian side of this, because what we finally do in the long run is going to depend on where we end up with an agreement with Russia.

Go ahead with the fist viewgraph.

This chart just gives some of the background, I think most of which your members know already.

The commitment to eliminate the surplus fissile materials.

The second item is the Defense Authorization Act for fiscal year 1995 which established a permanent office in the Department of Energy reporting to the under secretary. We have an under secretary nominee now and hopefully he will be confirmed. Then we will have our management structure lined up again.

There is a joint U.S./Russian effort that came from several summit agreements. The earliest one was a President Clinton/President Yeltsin statement in January 1994 which kicked off a joint effort on this by their "experts."

In March 1995 the President declared in excess of 200 metric tons of materials surplus to defense needs and stated it would never again be used in nuclear weapons.

Next viewgraph.

I'm going to concentrate on the disposition work with the Russians. Right now the storage is a minor part of the effort. If you do have questions about it, we can answer them.

Next viewgraph.

The decision that was announced in January is to pursue what we call a hybrid strategy. It has two parts to it. There are basic reasons for pursing this. As indicated, insurance against delay on any one.

There was no consensus on either approach.

The third bullet is a significant Russian concern that if we immobilize all the plutonium that that immobilized form is nothing but a storage form, and although that is a satisfactory method to prevent third parties or sub-national terrorists from obtaining it, it's not an acceptable method to prevent irreversibility of the disarmament process, in the Russian view.

CHAIRMAN JACKSON: Commissioner.

COMMISSIONER McGAFFIGAN: I find that argument from the Russians, which I know is at the core of our policy or our reaction to their policy, sort of the pot calling the kettle black in the sense that every time I hear the Russians talk about their nuclear future, they talk about having breeders, having large numbers of reprocessing

facilities, having vast quantities of plutonium floating around. So if there is any military concern about breakout potential, it would strike me that the Russian breakout

potential would be far larger than any potential of us going into Yucca Mountain and hauling out waste to be re-separated and remade into weapons.

When you talk with the Russians about this stuff, do we challenge that notion that our breakout potential would somehow be larger than theirs?

MR. CANTER: Yes, we do, Commissioner. Some of the things we can't quite say in public yet because they are still classified. The facts are that their position -- we don't necessarily agree with it; it's a negotiable issue -- is that if we were going to break out, we would break out with the designed weapons that we presently have and that are proven by tests. So we would want to go back for the same kind of plutonium that we used in manufacturing them originally, and that would be the weapons grade plutonium. That reactor grade or fuel grade or some other isotopic mixture would require redesigning some of the weapons, particularly the long range devices where weight is very significant, and since we can't test, we might be wanting to do that.

Of course each nation will probably keep a strategic reserve of material anyway.

This is a disarmament agreement, and we will have to eventually stop talking about how much we are going to get rid of and talk about how much are we keeping, because that's the ultimate bottom line.

We are getting a lot of pressure from the Russians on this issue. So it was one of the thoughts that we used. We thought this would help us leverage the Russians towards an agreement if we did at least some of the better quality material with reactor fuel and at least degraded the isotopic and destroyed some of the plutonium in the process.

CHAIRMAN JACKSON: That's really an important point, namely that this point three is referenced to material of a certain grade that obviously is linked to strategic weapons of a certain design, and that's why the focus is here.

MR. CANTER: Yes.

Next viewgraph.

This is just a pictorial of the two approaches. As you can see, the first activities on both of them.

Early activities are site selection on the reactor option. There is also the competitive procurement that we are going to talk about, and there is mixed oxide fuel development that has already been started and will continue through the next fiscal year.

On immobilization, in addition to site selection

there is a lot of R&D on glass versus ceramic that has been underway, and then there is research and development on the process technology and the final form of the immobilization which will be ongoing next year.

CHAIRMAN JACKSON: Let me ask you a couple of

questions on this particular slide. First, I guess I am interested in having you expand a bit on the near term 1998 schedule vis-a-vis competitive procurement. Somewhat linked to that, have you obtained congressional feedback that indicates a willingness to commit the necessary resources to this initiative, to the long term?

MR. CANTER: The procurement schedule will be covered by Dave Nulton later.

With regard to the Congress, number one, the best feedback is approval of a budget. Right now they are about to go into conference committee, but the House has approved our requested budget. The Senate reduced it by $8 million out of about $103 million. They asked for more information. We have provided it. We are hoping to get that restored.

In addition, in the Senate Armed Services Committee report there is some language -- unfortunately I didn't bring it with me today -- where they endorse this dual track strategy and requested that the Department proceed with it. So there seems to be fairly good support on the Hill at the present time.

CHAIRMAN JACKSON: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: I don't think you are going to come back to immobilization very much, as you said earlier. On immobilization, we are going to have a separate briefing later this week on external regulation of DOE, and one of the areas where we have already been working some is the tank waste remediation effort up at Hanford. Is the notion that the facility that you will use for immobilization may also be NRC licensed?

MR. CANTER: Yes. If it's the new facilities, our assumption is we will design them to NRC regulations. Right now the planning is based on the fact that what will be NRC licensed would be the MOX plant, and the other facilities, like the immobilization and the pit conversion, are still DOE regulated and Defense Board reviewed. If the external regulation comes about, we'll shift over to it.

My position has been that if we are going to do that, rather than back into something later, the time to do that is in the design phase as early as possible.

COMMISSIONER McGAFFIGAN: My recollection, and we have come a long ways from it, of the Grumbly-Berube Task Force of last December was that while there was this ten-year time horizon for the defense facilities, there was the notion that new facilities -- I know there is some chance for immobilization you may use an older facilities --

but new facilities would probably come under NRC regulation earlier if Congress creates a whole host of ifs.

MR. CANTER: Yes.

COMMISSIONER McGAFFIGAN: Thank you.

MR. CANTER: The third piece that we are trying to site is the pit conversion, and that is the next chart. We

are into site selection on that. We are installing a prototype system at Los Alamos as we speak, and we expect to start that up next year and to start testing that. There are many different types of pits, so there will have to be modifications to handle different kinds.

CHAIRMAN JACKSON: Los Alamos is the site for the prototype but not necessarily the whole site?

MR. CANTER: That's correct, but it's full size equipment. What would occur in the production facility would be multiple lines of equipment.

COMMISSIONER McGAFFIGAN: Last time you were here the gallium issue had just been in the New York Times and we talked some about it. This is the point at which the gallium, as I understand it, would be removed before it went to the MOX facility. At least that's my recollection of last time. Is that built in now to the planning for this facility?

MR. CANTER: It's not necessarily the point for removal of the gallium. The hydride/dehydride process,

which is a dry thermal process, does not purify the plutonium. So whatever is alloyed with the plutonium will come with it.

We have a choice if we have to remove the gallium of whether it's removed by adding a module to the back end of this conversion facility or in the front end of the MOX plant if it's going into MOX.

We have a program to solve the gallium issue, and we have both out-of-pile and in-pile tests. The out-of-pile tests are already underway; the in-pile testing will be done with fuel fabricated at Los Alamos and inserted into the advanced test reactor in Idaho late this fall or probably early winter.

So far the evidence from the out-of-pile tests, which are done in a very conservative manner by using pure gallium in tubes of clad material, show no general corrosion of the cladding material but some evidence of the possibility of some liquid metal embrittlement of the material. But this is pure gallium. When you go through the thermal treatment that has been developed, and then by the time you mix it with uranium oxide in the mixed oxide fuel, you are down to like 10 ppm gallium. That's why the in-pile testing will be very important to determine what happens.

If we can't demonstrate that the gallium will not

be a problem, it will have to be removed, because we don't want to go with a licensing risk on this.

CHAIRMAN JACKSON: International inspection and safeguards would come in at the point of oxide formation?

MR. CANTER: Yes. Once the military characteristics are destroyed so we are not giving away any nuclear weapons design information, from that point forward there will be IAEA safeguards applied.

COMMISSIONER McGAFFIGAN: Again a question that may be appropriate at this point. Los Alamos had to shut down its CMR building for the next six months for safety reasons. How is that impacting your program?

MR. CANTER: Right now it doesn't impact because we are still installing the equipment for this. Once we go to start this system up we will need the support of the chemistry laboratory, and we are trying to work out a mechanism to minimize any impact from that, if there is any at all. But right now it's construction work. All the equipment is cold and being installed.

Next viewgraph, please.

This chart is a tabulation of some of the mixed oxide fuel research and development. We are somewhat hampered by the fact that we don't know which kind of reactors are going to be used, and until we do this competitive procurement and the specific utilities and their

reactors are selected, we don't know whether it's a Westinghouse, a General Electric, B&W, or what that we are involved with. So we have to do most of what we are doing in a generic sense or essentially do all different kinds, which is very expensive and makes it very elaborate. We have got some work underway.

We have done work on fabricability of the fuel pellets with weapons-grade plutonium, and we have tested the ability to make satisfactory fuel and sinter it properly and grind it using the oxide produced by the dry process. It's satisfactory. There are some people who say it must be aqueous-derived oxide. We don't believe that's true at all.

The impact of gallium I've mentioned.

The CANDU MOX fuel testing. We fabricated some CANDU fuel at Los Alamos. We are still struggling to try to get a contract in place for the Russians to fabricate some. That will cover a small-scale test that will be done at the NRU reactor at Chalk River on use of the CANDU reactor. It's called the parallax test.

We are doing an environmental assessment on shipping this CANDU MOX fuel -- the original shipment is like 5 kilograms of fuel -- up to Canada. That's in the review cycle right now. Once that is completed, if there is a finding of no significant impact, Los Alamos will apply for the export permit for that, which was something that was

applied for and then pulled back last year.

We are doing work on spent MOX fuel characterization. In fact all the forms that we end up with are being analyzed -- we have been doing this for about two years now -- by the people responsible for the repository. Rather than have somebody else do it and have them struggle with do they agree with the results, we are having them do it.

That has provided some positive feedback. For

example, on our early immobilization forms we had as much as ten percent plutonium in an immobilized form. They found out it was going to create a criticality problem and we had to reduce the quantity of plutonium in the immobilized form.

The reactor analyses and some work that has been done on that, and safety analysis, to try to determine to what extent we can go to higher levels of MOX fuel than the traditional European approach, which is about 30 percent MOX fuel assemblies.

We have under design a fresh fuel shipping container. I think there are two containers in the United States for MOX fuel, but they are extremely large, cumbersome things. Since we decided we will ship the fresh MOX fuel in our SSTs, they don't take advantage of the protection provided by the SST. So we are designing and plan to get certified a new type of container which will be

smaller and lighter and cheaper, obviously.

We are doing a lot of work on the economics and cost analysis of all of this.

CHAIRMAN JACKSON: Before you go, looking back at reactor core assessment, as I recall, in conventional light water reactors using uranium oxide fuel that at the end of cycle something like 70 percent of the fissions actually come from plutonium-239 produced in the cycle. Do you have some idea of what the percentages would be at a comparable point for the MOX? Presumably it's higher.

There is a related question. I am coming to something here in a second. The plutonium-239 provides a more negative moderator temperature and coefficient and a void coefficient to reactivity, which turns out to be advantageous for PWRs at the beginning of cycle, less so at the end of cycle, but I'm told that for BWRs the thermal hydraulics and potential issues of stability, et cetera, are more complex. Does this bias things in any way in terms of reactor selection and the like, or is it too soon to say?

Whatever you are able and willing to say in this room, I would appreciate it.

MR. CANTER: I don't personally have all the information on that. We could get back to you with the answer on that.

The interesting thing is that if you are starting

out with, say, four percent plutonium, which is predominately 239 for the weapons grade -- it's 93 percent more 239 -- and you've got depleted uranium, which may be 2/10 of one percent U-235, just about all your energy is going to be produced by fissioning plutonium, either the initial plutonium or the bred plutonium that you are going to get from the 238.

CHAIRMAN JACKSON: I guess the ultimate place I'm going is not necessarily to have a technical discussion but in terms of what light water reactor mix or what's biased.

MR. CANTER: We haven't biased anything against

the boiling water reactors at all. In fact there are some attractions to the boiling water.

COMMISSIONER DIAZ: From my old physics, if I can remember it, the plutonium-240 will be larger and it will actually make up for whatever difference it is. There is going to be a small difference in the delay mutual fraction, but that actually will not change as a function of core life. It will be different at the beginning. The 240, which will make more 240 than normal, would actually make up for the differences in the coefficient.

CHAIRMAN JACKSON: So it doesn't bias things one way or the other for one type of reactor.

COMMISSIONER DIAZ: No.

CHAIRMAN JACKSON: Commissioner.

COMMISSIONER McGAFFIGAN: This may be actually related. The last tick here is the economics and cost. As I understand it, MOX fuel you can't have as long a cycle as with uranium oxide fuels. That has been the practice in Europe. Your burnups can't be as high. Presumably the people who bid on the contract, if you are forcing them to be down more often, will expect you all to make up for that in some way. In your economic analyses have you factored in that, and do you have any better cost estimates now as to what the MOX option is going to cost?

MR. CANTER: We are going to need some information from the procurement process to really refine these cost estimates. We don't necessarily agree that you can't have as long a cycle.

As a matter of fact, the French are now seriously making preparations to go to an 18-month refueling cycle similar to what is used for LWRs in the United States, and they are talking about much higher burnups. It's an experience factor.

So the burnups initially were in the 30,000, 33,000 megawatt days per ton range and going up into the 40s. It's going to be a question of what's doable within the realm of the envelope of experience at the time.

CHAIRMAN JACKSON: So you're talking about going into the 40s in terms of gigawatt days per ton for MOX as

opposed to uranium-based?

MR. CANTER: Yes.

COMMISSIONER McGAFFIGAN: I suspect the procurement process will give you data. If I were bidding, I probably would bid within the current envelope of experience rather than presuming things.

MR. CANTER: For immobilization we have an extensive research and development program. One is the impact of impurities. All of the work prior to our record of decision was done with pure plutonium oxide. The assumption is that immobilization can accept what I'll call the junk and stuff without extensive purification, but we

have to prove this out. So we are doing a lot of samples and we have three or four of the labs working on this plus Savannah River.

We are doing layouts of the process and to develop the key process parameters and sizing of equipment.

We have decided to go with the can and canister concept where the plutonium would be immobilized without a radiation barrier in cans that are about the size of a two liter bottle of Coke. Those cans will be suspended in a framework in the large canisters that are used for high level waste glass similar to those that are at Savannah River now. Then high level waste glass will be poured around those cans and fill the canister to create the

radiation barrier.

COMMISSIONER DIAZ: Where is the high level waste going to come from?

MR. CANTER: It's either going to be at Savannah River or Hanford. I think they've got a lot.

COMMISSIONER DIAZ: In liquid form.

MR. CANTER: Yes. At one point people felt that we didn't have enough high level waste despite this, and I said, my God, I hope we don't have to go out and create more high level waste for this purpose. But it's adequate.

Our preferred sited, by the way, for immobilization is Savannah River. We have already formally announced that in the notice of intent on the EIS, because they have a high level waste vitrification plant in operation.

We do not want to alter that plant. It was never designed for criticality control. So you'd have to go with a much smaller melter, much smaller systems, and so forth, which would change the throughput and significantly increase the cost of the high level waste program.

CHAIRMAN JACKSON: And that's why you picked the can and canister?

MR. CANTER: That's why we picked the can and canister. We can take advantage of that facility without affecting its operation, essentially.

Andre mentions that we don't have any technical experience in adding plutonium to the high level waste glass. So that would be a tremendous technical risk.

We have gone through and we are completing this month a formal evaluation of the relative merits of glass and ceramic in the smaller cans. We haven't finally approved the results of that, but we will be doing that probably in the next two weeks.

CHAIRMAN JACKSON: The Savannah River facility can handle the throughput that you expect?

MR. CANTER: Yes.

CHAIRMAN JACKSON: So in fact then you don't expect to have a new immobilization facility?

MR. CANTER: There will be new facilities for

immobilizing the plutonium, making the cans, and any preprocessing of the plutonium materials.

To give you an idea, the Savannah River facility, the estimate is that they will produce about 6,000 canisters of high level waste glass based on the high level waste at Savannah River. Adding the plutonium to some of those would probably impact maybe 500 to 1,000 of those canisters.

CHAIRMAN JACKSON: Commissioner.

COMMISSIONER DIAZ: Something occurred to me. Looking at the options of immobilization versus the MOX fuel, obviously we are still standing by our 20-year-old

policy of no reprocessing of fuel. I think in the MOX case we can say that we are processing the plutonium into a new fuel form actually without reprocessing the fuel. However, in the immobilization we are taking high level waste and mixing it in a form that will actually provide the radiation barrier to make it less attractive.

Is anybody giving you any problem whether immobilization is closer to reprocessing than the actual fabrication of the MOX?

MR. CANTER: The only issues that have been raised about that, Commissioner are, if we were to use the actual canyon facilities at Savannah River, are we promoting use of a reprocessing facility to do this, to mix materials, or so forth? We are not planning to do that. It's not a good argument anyway even with that.

I was so disturbed about what is the policy and what has it been that I went back and found the original October 28, 1976, policy statement signed by President Ford, and it was the chemical separation from spent fuel. That was the issue. There has been a lot of confusion on that.

CHAIRMAN JACKSON: You mention on this slide that you completed a formal evaluation of the relative merits of glass and ceramic forms. How has that come out?

MR. CYGELMAN: Actually we had tasked Lawrence Livermore, who is our lead lab in this area, to give us a

recommendation with regard to continuing with one form. They set up a process whereby they had two evaluation panels evaluate the technical information that was presented. DOE provided criteria which the panel and the lab could use to evaluate the merits of each of the forms, and Lawrence Livermore gave us a recommendation, indicating that ceramic had certain advantages relative to glass, and their recommendation was to select ceramic.

As Mr. Canter has indicated, we still are assessing that recommendation and we haven't made that decision yet.

CHAIRMAN JACKSON: If you are talking vitrification, that means glass.

MR. CYGELMAN: Yes, it would mean glass.

MR. CANTER: If we were to use glass in these

cans, it would not be the same glass that is used with the high level waste; it's a higher temperature glass. So it doesn't remelt and the plutonium separate out when you are pouring the large quantity high level waste glass around those cans. There has been a lot of testing of a much higher temperature glass for that.

CHAIRMAN JACKSON: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: The defense waste processing facility at Savannah River had some startup problems. My recollection from reading the energy dailies

and other reliable sources lately is that those are behind it and that it's meeting its goals for producing logs at this point.

MR. CANTER: To my understanding, yes, sir.

COMMISSIONER DIAZ: Just to finish with the issue of the high level waste, we assume that when you take the high level waste stream from Savannah River or Hanford there are no contaminants or chemicals that will need to be separated. I'm sure you will make sure that this is going to happen.

MR. CANTER: That is one of the reasons for this can and canister concept. There is a barrier between the immobilized plutonium, a metal can, and the high level waste glass. So whatever process they are doing on preparation of the feed stream for the high level waste glass will be unchanged.

COMMISSIONER DIAZ: I was concerned about chemical contaminants that might actually attack the integrity of the canister from the high level waste.

MR. CANTER: If they have that problem, they have that problem today with the canisters, and we wouldn't be changing that.

The pit disassembly and conversion is the next chart. I mentioned the prototype that we expect to start demonstrating in March of next year at Los Alamos.

The initial run is about 40 weapons components. There are seven pit types that will be run through there. Then we will have to start adding some different equipment to do other types. We will probably add some automation and some additional remote handling because some have radiation levels that would give us a problem if we didn't. We expect to test over a two-year period about 200 more.

CHAIRMAN JACKSON: Do you see any external regulatory role in the pit disassembly and conversion program? We have already talked about immobilization.

MR. CANTER: It depends on what the decisions are and how the Congress reacts to this external regulation. I don't know.

The siting of the disposition facilities is the next chart. As you can see, for immobilization there are just two sites that are candidates. Savannah River is the preferred alternative site, but we are evaluating Hanford.

Although they don't have a high level waste immobilization facility, they have plans for one. Even though some people refer to their first phase as a pilot scale, that pilot scale is so big that it's large enough to do this job if it were to be completed.

For the other two modules, the pit conversion and the mixed oxide fuel fabrication, there are four candidate sites. None of those have been designated as a preferred

alternative at this time.

Next viewgraph.

We are doing an environmental impact statement, and that is tiered off from our programmatic. The notice of intent is already out. We have gone through scoping meetings.

We expect the draft environmental impact statement to be issued early next year, probably January or February time frame. It will contain the preferred alternatives. As I said, we already indicated the preferred alternative for immobilization. So we'll have to pick the site for the MOX plant and the pit conversion.

As part of our record of decision the MOX plant will be on a DOE site; it will not be out in the commercial sector. It will be owned by DOE although it will be operated by the private sector.

The final environmental impact statement and the record of decision, about the end of fiscal '98, early fiscal '99.

CHAIRMAN JACKSON: Would you expect NRC to be a commenting or a cooperative agency?

MR. CANTER: We have sent you correspondence, and my understanding is that you would be a commenting agency rather than a cooperating agency.

CHAIRMAN JACKSON: It's a recommendation the

Commission has to act on.

MR. CANTER: Yes.

The schedule, which is the next chart, is of interest. I will come back to this later, but it shows tests and qualifications, form selections, the procurement, and then the design. We just show design and licensing for the MOX facility because we don't know whether the others will be licensed. And the construction periods.

We are requesting construction money to start the design on the pit disassembly and conversion and the MOX facility starting in fiscal '99.

We will not be ready to start on the design of the additional facilities needed for the immobilization because we are still developing the processes. That will start in the year 2000, but the actual construction will be much shorter because they are not very extensive facilities. So it should be ready at least a couple years before the MOX plant would be ready.

I'd like to let Dave Nulton describe our procurement strategy and the feedback that we have gotten from industry, because I think this will be of interest.

MR. NULTON: Because of the unique nature of our procurement, the Department decided that we would issue a procurement strategy rather than go out directly with a draft RFP or a final RFP, the idea being that we would

indicate what our strategy is, get response from industry. If there were major differences with our proposed approach, then we could make changes and hopefully save some time.

The strategy indicated a preference for a consortium as a minimum to be made up of a fuel fabricator and an irradiation service provider, presumably a utility or an IPP. The reason for that was we wanted the fabrication of fuel and the fuel supplied to a utility or IPP to be as close as possible to the normal business arrangements that are in place between those entities right now. We didn't want to put ourselves in the middle of that fuel supply process, having to guarantee schedules and warranties on fuel and so forth.

The consortium preference also indicated that we wanted a sole contracting authority, a lead company. Initially an NSSS company or a fuel fabricator. We did get some comments back from that proposed approach from the industry, which I will talk to in a minute.

The key assumptions were that the mission timetable for this procurement and for implementing the program would be dictated by international agreements, primarily with Russia. The United States isn't going to begin to eliminate or disposition their plutonium until we see some commitment and progress on the Russian side as well. Howard will say more a little bit later, at the end

of the presentation on progress that we are making with Russia in that regard.

The MOX fuel fabrication facility site would be determined through NEPA. As Howard mentioned, there are four sites being considered. They are all DOE sites.

The assumption also stipulated that the MOX fuel fabrication facility would be licensed by NRC as opposed to being operated under DOE orders.

IAEA safeguards requirements would apply through the disposition process once the materials are converted to a declassified state. We would not have IAEA involvement in the pit disassembly and conversion process because the materials would be classified at that point.

We also indicated that NRC jurisdiction for security and safeguards would apply at reactor sites. Actually the original strategy indicated that the more stringent safeguards and security requirements would apply at the MOX site. We got some comments back from industry questioning whether or not that would lead to some conflicts, and as a result we are changing our approach

there, or at least proposing that it be changed to having NRC jurisdiction at reactor sites and DOE jurisdiction at the MOX fuel fabrication facility.

CHAIRMAN JACKSON: Let me ask you a question about that. Since you are talking of NRC licensing of the MOX

fabrication facility as well as having the IAEA safeguards apply, and we implement those at the civilian facilities here, what is the gain or the rationale for having DOE safeguards and security orders apply at the MOX fuel?

MR. CANTER: The MOX fuel fabrication plant would be an enclave inside a larger DOE site. Effectively the security force from the larger site would be the backup for whoever is providing the security in the smaller internal site. It just seemed to us that you don't want two sets of rules.

One of the fundamental issues, and I'll come to this later when I talk about legislation, is the question of the use of deadly force. Under an NRC license, I don't think that they get the authority through you to use deadly force to protect the material. They can use deadly force to protect themselves.

CHAIRMAN JACKSON: I know he is going to make the comment I was going to make.

COMMISSIONER McGAFFIGAN: Part of our legislative proposal is to deal with that.

CHAIRMAN JACKSON: It's in fact to change that.

MR. CANTER: I know that. Let's say something were located at Savannah River. They've got a 300 square mile site. They've got certain security requirements. If you need help in this smaller enclave, you don't want to

tell people, well, when you go inside that fence you do it this way, but outside of it you do it a different way. You want a common set. We have to resolve this.

I don't think it's a big problem. It's just something that has to be done.

CHAIRMAN JACKSON: Go ahead.

COMMISSIONER McGAFFIGAN: Just to clarify. It was put out differently in the original acquisition strategy, that it would be under NRC. Having your viewgraph is a reaction to the comments you got at the meeting in Chicago.

MR. CANTER: Yes.

CHAIRMAN JACKSON: Do you envision the lead contractor as the licensee?

MR. CANTER: Probably that would be the way it's done, and it depends on their contractual relationship among the members of this consortium. It was interesting. An attorney in procurement started reading off different definitions of the word "consortium," and when he got all done describing Webster's, Black's Law Dictionary and everything else, we knew less than when we started.

CHAIRMAN JACKSON: That's what dictionaries will

do for you.
MR. CANTER: It's whatever arrangement a group of companies can have. What we do insist is that somebody be in the lead and be responsible.

CHAIRMAN JACKSON: What about foreign ownership control and influence?
MR. NULTON: The rules for foreign ownership would apply. There will be foreign entities involved in this, we believe. The Western European fuel fabricators obviously have this background and expertise, and we would expect to see them in some of these consortia. The Buy American Act would also apply.
CHAIRMAN JACKSON: But you'd expect the lead to be a U.S. company.
MR. NULTON: A U.S. company or one that could qualify as a U.S. company, yes.
CHAIRMAN JACKSON: Okay.
MR. NULTON: Next viewgraph.
The responsibilities of the consortium would be to design, construct, license and operate the fuel fabrication facility.
Then to irradiate the MOX fuel in existing commercial reactors.
And to decontaminate and decommission the MOX fuel facility at the end of the campaign.
CHAIRMAN JACKSON: Yes.
COMMISSIONER McGAFFIGAN: Did industry have any comments at this meeting about decontaminating and decommissioning?

You earlier talked about this enclave in a DOE site, and all the DOE candidate sites are not exactly pristine. If I were the entity, I would want to make sure that I had a survey of the site so I did not get blamed for past DOE sins. How is that decommissioning and decontamination baseline going to be set?
Presumably if it's our license, it would be to our license termination standard.
Was there any comment on that in your Chicago meeting?
MR. NULTON: Not a lot of comment on that. The facilities will either be new facilities in greenfields, or they will be used in conjunction with new or existing facilities. At Hanford the FMEF has never been used. So it's a clean facility. At Savannah River we have the APSF. That would sort of be the anchor and these other facilities would be built contiguous to the APSF.
I don't think we have any preexisting contamination at those sites, but we did not get a great deal of comment on this.
COMMISSIONER McGAFFIGAN: Would they be allowed to survey the site to provide a baseline?
MR. NULTON: Absolutely.

CHAIRMAN JACKSON: Okay.
MR. NULTON: The Department of Energy's

responsibilities would be to provide the site through our NEPA process, to provide funding for the design and construction of the facility, but we would retain ownership, as Howard had mentioned earlier.
We would provide materials to meet the operator's schedule, and we would also provide those to meet a spec for powder going into the MOX fuel process.
We would transport the materials to the fabrication facility from the disassembly and conversion facility. They could be collocated, but they may not necessarily be collocated. That's something to be determined through our NEPA process.
Then we would also provide for IAEA inspections.
MR. CANTER: Let me interrupt a minute. This shows the transportation to the MOX facility. I also said we would transport the fresh fuel to the reactors.
MR. NULTON: Next viewgraph.
CHAIRMAN JACKSON: I think the Commissioner has a question.
COMMISSIONER DIAZ: I just was wondering whether you have a similar well defined chart of the NRC responsibilities that you see as a companion to this chart.
MR. NULTON: We do not. I think that will be the subject of further discussion.
COMMISSIONER DIAZ: Not even a tentative?

MR. NULTON: Not even a tentative at this point.
CHAIRMAN JACKSON: They knew we would give them a hard time.
MR. NULTON: The procurement schedule actually began back in March with a Commerce Business Daily announcement that indicated that the Department was about to undertake this procurement, that we would initiate the procurement by issuing a procurement strategy. That strategy was issued on July 17, 1997.
We provided time for review and asked that comments be provided to the Department. Actually this procurement is being conducted out of the Chicago operations office. So we are working jointly with the Chicago office on this.
There was a workshop held with industry and other members of the public on August 28 to receive further comments and have discussion on the strategy, which I will say more about in a moment.
The draft request for proposals will be issued in November, probably late November at this point. Our target is to have that out before Thanksgiving. This will be the last opportunity for industry and others to comment on our procurement process.
And then we would have final request for proposals

out in February with receipt of proposals sometime around

the May time frame.

Contract award we show here as September of 1998, but another comment that we received from industry, and I'll say more in a moment about this as well, was that they were concerned about the commitment of the Department to the procurement; they were concerned about how much material would go to immobilization versus mixed oxide fuel; and some concern about why so much time was allowed between the receipt of proposals and the award of a contract.

So we are looking at trying to accelerate this schedule. We might be able to contract as early as July, but that is something that we are still working internal to DOE.

Next viewgraph, please.

As I mentioned, the workshop was held in Chicago, at the Chicago operations office site on August 28. It was well attended. We had over 100 attendees. I think we had 87 or so that formally registered and there were others who came in at the last moment who did not register. So we think roughly 100 people.

We had comments that had been provided prior to the meeting. We took these and issued at that meeting a draft set of answers to those comments, and then we also had further discussion and tried to address other issues that were raised at the meeting as we received them.

What we tried to do here is identify some of the major concerns. As I mentioned earlier, concern over DOE's commitment to the MOX/reactor procurement. This, I think, stems from a number of factors.

First, the wording in the record of decision from the programmatic environmental impact statement was in some cases vague, maybe even confusing in terms of how much material would be committed to the immobilization approach versus the mixed oxide approach.

Also DOE's track record in the past of completing facilities on time and getting them up and running.

So there is some concern in industry. We hope that accelerating the procurement, if we can do that, will help to alleviate some of those concerns.

There was also a comment made by a number of industry groups on the leadership requirements. Initially we had said that we would like to have a fuel fabricator, an NSSS vendor provide the leadership of that consortium. We are now changing that approach to say that any members of the consortium can be the lead as long as they meet the U.S. ownership requirements, and also they must have the financial and technical resources to be the lead, and then we would contract with that lead.

In fact, we even allow, and I think we had this in the original strategy document, for some of these

arrangements to be done through subcontracts. Not every participant in this endeavor needs to be a member of the consortium; they could subcontract to some of those contractors.

There was a comment about the cost of preparing the proposal and whether there would be cost reimbursement. At this point we are making no change in our position there. We would expect the consortia to fund the preparation of their proposals.

There was a concern for duplicative DOE and NRC regulation. This was primarily focused on the safeguards and security requirements that we talked about earlier. Again we had said that we would apply the most stringent requirements. Now we are proposing that DOE requirements, for the reasons that Howard described, would apply at the MOX site and NRC requirements at the reactor site. This is something that may require some legislation to get nailed down.

CHAIRMAN JACKSON: Were there any other public comments that addressed NRC or its role in this project?

MR. CANTER: We were asked whether we had legislation giving NRC the authority. We said that's yet to come. Some questions about that. Most people felt in view of the fact that part of this process, the reactors, are already NRC licensed that this was the right thing to do. I

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didn't hear any real objections to it.

MR. NULTON: Next viewgraph, please.

One of the requirements that we identified in our strategy was to provide excess capacity in the event that more material is declared surplus or we want to increase the throughput.

Also there is an option that we are evaluating in our NEPA process to disposition some of this material in Canadian CANDU reactors. As a result, we wanted to be sure that we had adequate space in the facility to fabricate any type of fuel that would be required or to increase our throughput.

There was some objection to this. At this point we have not changed that requirement. Again the Department is going to pay the cost of designing and constructing this facility, and our view is the additional cost will be funded by the U.S. Government. So we're not sure why that is a major concern, but we are looking at that further.

There was some uncertainty about how the MOX fuel fabrication facility would relate to other activities at the DOE site where the facility might be constructed. This was focused primarily on services, water, electricity, and so forth, whether they would be purchased or provided by DOE. Also the potential for conflicting missions at that site. We don't think this is a major problem, but we will address

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it further in our draft RFP.

Finally, there was not so much comment but more inquiry or question on details of criteria that would be used in our evaluation, what would the weighting of that criteria be.

Also a question on the safety records of some reactors. If a reactor is in the watch list, will it be considered? Our view there is a reactor that is on the watch list today may not be in ten years when this activity gets up and running and vice versa.

CHAIRMAN JACKSON: Also, presumably if in fact it's in our regulatory regime, that would be part of what we would make a decision on at any rate.

MR. NULTON: Absolutely. In fact we have received correspondence on this in the past prior to the strategy going. That's typically the answer that we give, that this is an NRC regulatory issue.

Next viewgraph, please.

As Howard mentioned, we believe some legislation will be needed to implement the program. In fact there have been some preliminary discussions between our general counsel's office and your attorneys on how we go about doing this. First, of course, would be the authority for NRC to license a DOE-owned facility.

Price Anderson indemnification. There was some

question on this at our meeting in Chicago and also some of the comments that came in as part of the meeting. We need to be clear on who is going to indemnify the operators of this facility. I believe the proposal now would be that the MOX facility would be covered through DOE; the reactors, of course, through NRC. The question came up again because of NRC licensing a facility on a DOE site.

The use of deadly force, which we discussed earlier, may require legislation, although your proposed legislation may deal with that and no further changes will be required.

Then changes in security approach, having to deal with the safeguards and security at the MOX facility and how we handle that.

CHAIRMAN JACKSON: Yes.

COMMISSIONER McGAFFIGAN: Do you have a backup plan in case Congress doesn't decide to do this? In the case of tritium it has been controversial this year whether Congress would grant the DOE legislative request, and I guess we are waiting for the conference result on that.

If Congress says no, we want the MOX facility self-regulated by DOE, you then have the interface at the reactors, which are obviously going to continue to be regulated by us. Have you thought through how that regulatory regime would work and how your self-regulation at

the MOX facility producing fuel that you irradiated and our regulated reactors, how that would all work out?

MR. CANTER: I think that is pretty straightforward, Commissioner. The DOE regulation would be the safety aspects of the MOX fuel fabrication facility. The quality requirements for the product produced in there would come from its contract with the utility and would have to meet NRC requirements, but DOE wouldn't be responsible to try to control the quality. That would be a contractual arrangement with the purchaser or whatever arrangement there is for that fuel, and the customer is the utility who has requirements under its license with you. But the safety, I think it's very easy, and the handoff would be on delivery at the reactor site.

The Price Anderson is rather interesting. My understanding is that if they get Price Anderson via a license they have to pay an insurance premium for it, if I'm correct. I don't know that I'm correct. This wouldn't make sense if they had to pay that and then turn around and bill us for the cost. Through the contract we can furnish the Price Anderson, and we don't charge for it. We furnish it to all our contractors. This would be just circulating money for no purpose.

I want to cover a little bit on the Russian activities because all of this is hinging on it and some

things have happened recently which are rather exciting.

The next viewgraph.

We completed a U.S.-Russian study last fall on the technical options. This did not make recommendations on what to do in Russia. It just presented an evaluation which tried to be fair, an evaluation to some mutually agreed upon criteria of the different options.

There were some important considerations that came out of that. One was that the Russians in the study agreed and after we printed it tried to back away from it for a little while, but they agreed that whatever is done in Russia and the United States we would reduce to equal levels. That's a subtle difference between that and equal rate. So if they are starting with more than we are starting with, they may have to run faster.

The second point that is very interesting is that they agreed that there would be no recycle of whatever form there was, at least until the stockpile of surplus plutonium is eliminated. So that day may be 30 years from now. They wanted the option to go recycle their fuel. We said not while you're getting it down. What happens 30 years from now we'll figure out in the interim.

CHAIRMAN JACKSON: Commissioner.

COMMISSIONER McGAFFIGAN: One of the tricky points is this reduction to equal levels, including presumably

whatever strategic reserves the two countries decide to retain. It's fairly straightforward to calculate how much plutonium they produced within, say, ten tons. I think I saw a recent press report where Velikhov was quoted as saying they might declare 50 tons excess. How will we react if the number is that low given that we know it has to be much higher or else their strategic reserve is going to be much, much, much higher than ours?

You are into arms control, and I don't want to get into classified, but there is a paradox here that is going to be difficult to get passed unless they declare something much larger.

MR. CANTER: You are really asking me what is the negotiating strategy for working out a bilateral agreement which I can't lay out and I don't think in a public forum would be a good idea anyway.

In prior arms control agreements they did refer -- for example, conventional forces in Europe. They didn't deal with how many tanks are you going to destroy but how many tanks are you going to keep. That's ultimately what we have to get to here. It's going to be tough for the U.S. to accept that, because it will require the U.S. to reveal what it's going to keep, and they don't want to do that; there are people who don't want to do that.

We have started conducting some small-scale tests

and demonstrations. We have several activities at the Bochvar Institute on immobilizing plutonium. We have some work at Bochvar and some fuel fabrication, and we have work at IPP, Obninsk and at the Kuchatov Institute on analyzing some of their reactors. Kuchatov was brought in because the most promising option appears to be to start to use mixed oxide fuel in some of the operating VVER-1000 light water reactors.

The Russians have seven. They have indicated that four of them are newer and could contribute to this. If you stick with 30 percent MOX fuel, they could each consume about a quarter of a ton of plutonium a year. So that's not very much. But there are happen to be 12 operating VVER-1000s in the Ukraine, and the Russians have agreed and they have already started a dialogue with the Ukraine on possibly using those. So then you are getting a population of reactors that starts to get reasonable for accomplishing the job.

One of the problems is that we don't know what the end of life is on these reactors and will they last long enough to really do this. Again you get back to the question of how much do they have to do.

All of this is going to have to be worked out. It's going to be somewhat difficult.

We have reached agreement with the Russians to

start developing a pilot-scale pit conversion facility for

Russia. In the experts meeting in Paris last October the French and Germans proposed building a pilot-scale MOX plant in Russia. That would consume 1.3 metric tons of plutonium a year, produce about 30 tons of heavy metal mixed oxide fuel.

They proposed it but then went around and passed the hat and wanted to know who would like to contribute. We took the position that we didn't want to contribute to that but what we would prefer to do is break off the front end of that, and we will handle that in total. That's the conversion of the metal from the weapons components into oxide and the placing of the resultant oxide under IAEA safeguards. If that oxide goes into MOX fuel it has got to be acceptable oxide for that, and we will size this pilot-scale plant accordingly so it's handling 1.3 tons of plutonium a year.

We will handle that, and we have already started working on it and we have dedicated some money to it, and we will be requesting money in the coming years for that effort. What is started on that is a feasibility study, an engineering study, and some experimental work at the Russian laboratories on which process to use for converting metal to oxide. At the present time they don't know what they want to use, and it doesn't have to necessarily be the same

process we're using.

CHAIRMAN JACKSON: Commissioner.

COMMISSIONER McGAFFIGAN: I think I heard the Russian deputy minister at the Leesburg conference talk about their preference to get to the spent fuel standard by putting the fuel in breeders. Does that continue to be their preference? I know our preference is the VVER-1000s, and you've got Kuchatov involved, but is there a disconnect in the Russian bureaucracy on that?

MR. CANTER: No. Number one, they still love breeders and we can't break up that love affair. But number two, they have also agreed in the one fast breeder they've got, the BN-600, to convert it to a burner, and there are some early steps that can be taken. For example, the removal of the radial blanket which generates weapons grade plutonium and installing steel reflectors and some other things. That can be done in a relatively short period of time, a few years. So we can take some steps there to eliminate that threat so they are not making more plutonium.

Of course, as you know, the Department working with the Department of Defense has a core conversion program for the production reactors also which we don't have aegis over but another part of the Department does.

And we are providing technical support for the Interagency Working Group.

The next chart I'm not going to go through each of the items. This is nicknamed the Holdren-Velikhov Report.

About a year and a half ago or two years ago President Clinton and President Yeltsin sort of commissioned an independent scientific commission consisting of five members from the National Academy of Science and five members from the Russian Academy of Science, and the two sides are chaired by John Holdren from Harvard and Evgeny Velikhov, who is the president of the Kuchatov Institute and also a member of their National Defense Council. Their report came out a few months ago, and it has some key recommendations.

First of all, it endorsed the dual track for both nations, and they supported getting these pilot plants built and getting MPC&A, material protection control and accountancy, at the sites, and we have an extensive program for that. The budget for that has steadily gone up through the years, and I think we asked for something in the neighborhood of $130 million for fiscal year 1998. We will see how that comes out. But there are some 40-odd sites where that work is being done.

Some of the things are rather interesting for you.

Agree to establish appropriate managerial structures. Within that recommendation were several sub-recommendations. The Russians have never assigned

anybody responsibility for this. So when you deal with them, this task is dealt with by this office and somebody else. They recommend, I guess, that they have a mirror image of what we got, which I guess is another office like ours or something, or a program office. And they are starting toward that direction. They just recently assigned a coordinator at our request and are trying to get him up to speed.

The other was that they recommended -- we have to think long and hard about this -- that both nations establish offices in their regulatory agencies dedicated to the disposition of excess plutonium. So that would be the NRC and GAN. Obviously we are not responding to that. The White House has this report and they'll probably be in touch with you. I know they're going to request through the Interagency Working Group comments on it at some point.

The next chart, please.

This is the thing I was mentioning that is rather dramatic as a result of some meetings that we had in May where we met with the Defense Council. In the Russian Government there are two councils. There is a National Security Council and a National Defense Council.

The National Security Council is really for internal security but they do handle such minor issues as Chechnya and a few other things.

The National Defense Council, akin to our NSC, is chaired by the President himself, and the members consist of some cabinet level ministers and the prime minister. In fact I have a backup viewgraph on that. If you could find

that on the National Defense Council.

This describes the National Defense Council. Of interest is that the Minister of Atomic Energy is not a member of the National Defense Council - Mikhailov. There is a secretary and chiefs of staff and all that, and the secretary is the analogue to Sandy Berger of the NSC on this side.

We met with some members of the National Defense Council staff and explained to them in May that the United States has an interagency process. So we get the policy people involved early and we don't go running off and doing things on our own in the Department of Energy, and we have the State Department and we have the NSC and we have OSTP and others involved, so that at some point you have to translate technical work into policy, and that is being lined up as we go.

But we don't see anything similar in Russia. In other words, it's all buried in MINATOM. They went off and prepared a recommendation to the President, and on the 23rd of July President Yeltsin signed a decree that set up this standing committee under the National Defense Council.

This is very important, because they assigned as the chairman Velikhov, who is the only non-minister level person in the National Defense Council, and the National Defense Council in the Russian regime has suddenly started flexing its muscles, and in fact the very day we met with them they had a meeting that afternoon in the Kremlin at which Yeltsin fired the Minister of Defense and the Chief of Staff of the Armed Forces because they weren't going along with the recommendations of the National Defense Council for streamlining the military. So it's an interesting dynamic that is happening there.

You can see that the members of this standing committee are either ministerial level or deputy level. I believe Vishnevsky is the head of GAN, and the Minister of Finance happens to be the Minister of Finance. I don't know who the representative from the Ministry of Defense is because it was Kokoshin, but he moved up to become Secretary. So this is a fairly high level committee. It's a standing committee, and they are all supposed to oversee this.

On the next sheet is a brief description of some of their initial tasking, what they're going to do, and they have to submit some recommendations by the 15th of October on what path the Russians would take.

The second little tick under this initial tasking

is really for them to develop a framework for an international agreement with the United States for getting rid of plutonium. That's the kind of architecture in this agreement you need.

And they are supposed to make an initial

declaration of what will be excess. It may be that they'll say you did 50 tons, we'll do 50 tons. I don't know. But we know that they are working on that.

And they are supposed to oversee on an interagency basis the management of this problem.

So we are really excited over this move, because it means that at the highest levels in the Russian Government they are taking some action. President Yeltsin has responded also to the Holdren-Velikhov Report. One of the things that they have been asked to do is reconvene that committee in about four or five months and provide to the two presidents a progress report on how both sides are moving, and that will help keep this thing moving along. It's somewhat like a giant flywheel with bad bearings, and if you don't keep it rolling it will just grind to a halt. So this is encouraging.

There is one other thing. The schedule that I showed you which showed when we would do construction and so forth, in meetings the Russian Defense Council people picked up and they asked, would you spend money on construction if

you don't have a bilateral agreement with us? My answer was it will be very difficult to get money from the Congress if we're not getting some reciprocity. They looked at all that and decided that they had two and half years to get the agreement or they're going to slow down the United States. I think that was a very important conclusion and it provides them an incentive to move on with this dialogue. So we are hopeful.

That was all we had prepared.

CHAIRMAN JACKSON: Thank you.

Commissioner Dicus.

COMMISSIONER DICUS: No. I don't have any questions.

CHAIRMAN JACKSON: Commissioner Diaz.

COMMISSIONER DIAZ: I don't have any questions.

CHAIRMAN JACKSON: Commission McGaffigan.

COMMISSIONER McGAFFIGAN: Just following up on the breeder issue. Is that going to be part of the negotiation as well, the production of further weapons grade plutonium? Those reactors were designed to produce PU-239 with high concentration. That starts to run into their vision of their energy future. How is that going to be dealt with? Not the specifics of negotiating strategy, but is that on the table, production of further weapons grade?

MR. CANTER: This whole thing is very complex,

almost a web of intrigue. There is also an effort underway to develop a fissile material cutoff treaty in which the parties will agree to cut off the production of fissile material. For example, although we are buying surplus HEU from the Russians, 500 tons over so many years, they are still making HEU. So when do you stop? We're not, but they are. That will encompass the production of plutonium.

Also, as part of this disposition program, as I explained, the one breeder that they have we've got an agreement to work on the development of converting it to a burner, a net burner. There is no intent on our part, and I think most of the Western nations, to subsidize in any way, shape or form construction of more fast breeder reactors or probably any new reactors as long as we can get the job done with the existing reactors.

With regard to immobilization, the Russians have agreed that there are some forms of plutonium that they want to dispose of as waste in an immobilized form. One of the things we discovered just recently is that they had a policy that if some waste had more than 200 ppm plutonium in it that they had to process that waste to recover the plutonium. I think now that they have to pay for things they are going to find out it's an enormous burden.

We have got an agreement from them that we are going to take on a study to examine that limit, and it will

be much higher, which will mean that more material would logically be wasted and go into immobilized form. I don't know how much yet, but just to get them to agree to do that was a significant discussion.

COMMISSIONER McGAFFIGAN: Just to nail this down. You said with regard to the existing BN-600 the goal is to convert it into a burner, but I believe Yegorov is quite bullish on -- I don't know where they'll get the resources, their internal resources -- building future BN-800s in quantity. Your answer was that we will not ourselves or European countries likely subsidize Russian breeders, but if using their own resources they go to breeders, will the blankets on those breeders and their ability to breed weapons grade plutonium be a subject of the negotiation?

MR. CANTER: I'm sure it will be. The work we are doing on the BN-600 could be directly applicable to the BN-800s that they want to construct, but we just don't know where they'd ever get those resources.

CHAIRMAN JACKSON: Thank you very much, Mr. Canter and colleagues. This has been a very informative briefing on a subject that has both national and international security and, I would say, economic significance.

The Commission recognizes the Administration's view of the importance of this program to this country as well as to other nations around the world and the need to

successfully address the broad goals and objectives of the program. The issues involved, as we can see from our discussion, are complex, but the NRC is ready to carry out those responsibilities within our regulatory purview, both existing and expanding. In fact we tend to be out ahead of the game.

Briefings like this are important so that we can make sure that we are not overly planning or under planning.

to that end, the Commission would request that you continue to keep a very open line of communication with the NRC staff on these activities to assure that the program as it evolves is carried out effectively and efficiently and that any policy issues that need to be surfaced are surfaced in a timely way.

The Interagency Working Group on Plutonium Disposition should be helpful in this regard, but again I stress I think it is very important that the DOE and the NRC specifically have very open lines of communication.

Again, I thank you and your colleagues for coming to brief the Commission today. Unless there are further comments, we are adjourned.

MR. CANTER: I did want to pass something on to you which isn't in the presentation. I have asked our general counsel's office to work with your counsel, because what we would like to do is develop whatever legislative

package we need for this so it can go in with the budget submission in February. So we need to do that over the next few months.

The other thing is, with regard to budget, we have requested in the budget money that will be needed by our contractor as an applicant to pay for the full cost recovery and everything, because we don't request the FTEs or whatever is needed to provide sufficient resources in the Commission staff. So we're faced with the fiscal '99 budget being developed and going through OMB very shortly, and I do not have any feel right now for whether or not the Commission staff has anticipated a workload, because if we proceed on this schedule, there will be work for the Commission staff starting in fiscal '99.

CHAIRMAN JACKSON: I can't tell you what the exact plug in the budget is for this, but I do think there is a need to support us with the OMB in terms of relief from FTE ceilings. That then would also be part of an appropriations process and an appropriation to ensure that we have the necessary resources to do this job.

MR. CANTER: Thank you very much.

CHAIRMAN JACKSON: Thank you.

[Whereupon, at 10:47 a.m., the public meeting was concluded.]

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