

ATOMS FOR PEACE + 50

Nuclear Energy & Science for the 21st Century

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Panel Chairman:

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Atoms for Peace and Its Impact on Non Proliferation Efforts

Brooks: Lawrence Scheinman is Distinguished Professor of International Policy at the Monterey Institute and an Adjunct Professor at Georgetown University. He is a former Assistant Director, what everybody else would call Assistant Secretary, of the Arms Control and Disarmament Agency where he had the proliferation and the regional arms control portfolio. He held that position from '94 to '97. He was a Professor of Government at Cornell. He was Director of the Program of Science, Technology and Security.

He has served in a number of government positions and he was in my department before it was called my department, when it was still called the Energy, Research, and Development Administration. He's served in the State Department. He's a member on the Council on Foreign Relations. Were I to read the articles he chooses to include in his biography, we would use all of his 15 minutes. He is the author of seven books and monographs and dozens of articles on subjects relating to this conference

SCHEINMAN: Thank you very much. I will move rapidly because we don't need simultaneous translation. It's obvious that "Atoms for Peace" opened an era of accelerated spread of nuclear knowledge, know how and activity to a larger number of states than otherwise would have been the case. At the same time, it seems to me, that it's clear that maintaining a policy of secrecy and denial would not have held back the inevitable growth in the number of countries that would acquire nuclear knowledge and gain access to nuclear technology and plant and that over time the dissemination of nuclear knowledge and activity would become as widespread as it is today.

The difference is that “Atoms for Peace” while quickening the pace of nuclear dissemination, also spearheaded the establishment of a normative framework that, in its absence, is not like to have emerged. The International Atomic Energy Agency, with its mandate not only to facilitate access to the peaceful benefits of atomic energy but also to develop and implement an international safeguard system to monitor and verify compliance by states with their legally binding undertakings, very likely would not have been in the absence of the “Atoms for Peace.”

Nor would there have been the setting down of the normative framework within which to grow a civil nuclear economy. Instead, states in a position to do so and motivated for one reason or another to do so, would have transferred nuclear technology, possibly under restrictive terms and conditions but possibly not. Indeed we have a record to look to.

As staunch a proponent of nonproliferation as Canada, transferred and unsafeguarded research reactor capable of producing plutonium, the Ceres Reactor to India, only to find nearly two decades later that the Reactor produced the plutonium used by India in its 1974 so-called peaceful nuclear explosion, leading to a breach in Indo-Canadian relations. Great Britain, for its part, provided India with reprocessing technology.

France, in 1956, agreed to sell Israel a comparable research reactor without safeguards, the Mona Reactor but unlike Canada in the case of India, apparently without any illusions regarding what its end use would be. France also built Spain’s first nuclear power plant, Vandellos, in the late 1960s at the time of the NPT as a matter of fact, also without any provision for safeguard.

The point is having not had Atoms for Peace would not have meant no sharing, no dissemination of nuclear knowledge and technology, materials or equipment. Rather it would have meant continued nuclear dissemination, perhaps slower, perhaps less widespread, but under structurally anarchic conditions in the absence of a framework of agreed rules, principles, and norms, with all the negative consequences for stability and security that such a situation would have implied. The Indian test gave substantive concerns about the relationship of civil nuclear activity to nuclear weapons proliferation.

The words of three nuclear physicists confirmed this relationship. David Bergman, former Chair of the Israeli Atomic Energy Commission commented and I quote, “It’s very important to understand that by developing atomic energy for peaceful uses, you reach the nuclear weapons option. There are not two atomic energies.” More succinctly ...(inaudible) Alvain(?) of Sweden remarked, “The peaceful atom and the military atom are Siamese twins.”

And back here at home, Edward Teller, speaking about concerns as nuclear reactors spread among nations, their production would enable most every country to acquire nuclear weapons said, and I quote, “This statement, most unfortunately is true. Eventually nuclear proliferation is unavoidable unless we find better solutions to international problems than are now on the horizon.” This remark speaks to a dimension of proliferation that is often noted but as not as often, the focus of nonproliferation policy, namely the motivation and incentives of states to strive for nuclear capability for weapons.

It is a dimension not to be discounted for it underscores another truth. Capability alone is an insufficient explanation for proliferation. Motivation also matters. To acknowledge this is not, however, a reason to relax vigilance regarding capabilities, especially those associated with the presence in a country of plutonium and highly enriched uranium or the means by which to produce them. That is the danger that Atoms for Peace in its early phase left fairly open.

And that remains open under an imperfect and uncritical reading today of Article Four of the Nuclear Nonproliferation Treaty, where it speaks, and I quote again, “To the inalienable right of all parties to the treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination” to which are added the sometimes overlooked words, I don’t overlook them, “And in conformity with Articles One and Two of this treaty,” that is to say the nonproliferation articles.

The NPT is the foundation upon which the regime, stimulated by Atoms for Peace rests. It is unlikely that there would be an NPT or at least an NPT with a near universal adherence that the treaty enjoys were it not for Atoms for Peace, as I said before. The initial draft of the treaty, you may recall, tabled by the United States and the Soviet Union, did not contain three articles that a broad cross-section of a nuclear weapons states insisted upon as a quid pro quo for their support for the treaty, even while holding the view that their security would be better served with the treaty than without it. Those are the articles on peaceful use, Article Four, the benefits of peaceful nuclear explosion, now defunct, I think, Article Five, and nuclear disarmament, Article Six.

Article Four essentially codifies the promise of “Atoms for Peace,” which is why I say, without it, the necessary support for the NPT in the broad community simply might not have been there. Global society was sold on the proposition, some would say the myth, that nuclear energy was the key to economic development and a golden future. This was not a promise and expectation to be let go of and it became, and remains today, a quid pro quo in the nuclear nonproliferation bargain, despite the economic, safety and waste management problems that troubled the nuclear industry.

The same is true, and even more so, of course, for Article Six. And it was Article Six that calls for the pursuit of nuclear disarmament and that draws the political attention and concern of the non-nuclear world and on which failure to make continued progress poses the greatest threat to undermining the treaty. As a general proposition, in the arena of international initiatives and agreements, the heavy lifting always comes with the implementation process.

In the case for Atoms for Peace, the IAEA was the institution created to foster a policy of internationalizing the peaceful benefits of atomic energy and to channel nuclear technology development toward constructive and non-military ends. Its charter was to “Accelerate and enlarge the contribution of atomic energy to peace, health and prosperity,” and, again to quote, “to ensure as far as it is able, that assistance provided by it or at its request or under its supervision or control, is not used to further any military purpose.”

To a substantial degree, that role was pre-empted by the leading nuclear states of the day, the United Kingdom, the United States, France and Canada who entered into bilateral cooperation

agreements with states interested in nuclear energy bypassing the IAEA. In two years following amendment of its atomic energy laws to permit international cooperation, the United States entered into more than 20 such agreements. This development took the IAEA out of a central role, particularly in nuclear assistance and removed the urgency in developing and deploying a safeguard system.

For almost three years, several key states, primarily India, supported by the Soviet Union, not because of a lack of interest in nonproliferation but in the context of the Cold War competition with the U.S., argued against the need to develop the safeguard system since national exporters were, where they chose to do so, applying bilateral safeguards to their transactions.

Another key provision in the statute that has to this day not been implemented relates to the prospect of managing plutonium, particularly important. Article 12-A-5 of the IAEA statute, gives the agency the right to approve the means to be used for the chemical processing of radiated material--

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SCHEINMAN: --Deposit with the agency of any excess of any fissionable materials recovered or produced over what is needed for use for research or in reactors. This provision was included in anticipation of a substantial agency supplier role that never materialized. But it was central to a controversy in the aftermath in the international nuclear fuel cycle evaluation in the Carter administration about the feasibility of international plutonium storage arrangements in conjunctions with the development of spent nuclear fuel reprocessing.

An ambiguity in the provision is whether this refers to what can be legally authorized in the event of a voluntary agreement by states to participate in such an arrangement or whether it refers to a discretionary authority of the Agency to impose those requirements on states. India and some other states fought vigorously against the latter interpretation. We did not. At the time the statute was negotiated and, again, in the context of contemplating plutonium storage arrangements, Atoms for Peace did not give as much attention to the longer run problem of reprocessing and plutonium recovery and use as it should have and in this respect, might be criticized for faulty vision.

That flaw, of course, has turned out to be one of the 800-pound gorillas on the nonproliferation playing field today. Another, and lastly I will focus on, evaluating the relationship of Atoms for Peace to nuclear proliferation is to consider what opening the doors to training in the scientific field, relevant to nuclear development has wrought. Thousands of scientists and engineers from many different countries, have been educated and trained in the United States and other advanced industrial state universities in nuclear research, technology, reactor construction, management, and the like.

This as reflected in the statements by Bergman and Alvain that I mentioned before, gets to the argument that, by virtue of the linkage between civil and military nuclear program, Atoms for Peace has contributed to proliferation, which is the argument that the United States has making for years now with regard to the Iranian nuclear program. The training provided by an advanced

nuclear state and which is part and parcel of the Atoms for Peace Initiative as well as the major activity of the IAEA, either by direct training courses or by arranging for scientists and engineers from developing countries, to go to an advanced nuclear state for his or her education in nuclear engineering, physics, metallurgy, chemistry and so on, has relevance to the concern with proliferation.

A blunt example of this is that Indian technologists were trained in French laboratories on designing and producing neutron initiators, which while relevant to peaceful nuclear activities, are critical to triggering a chain reaction in an implosion weapon. The same applies to training in the operation of hot cell manipulators that are used for radioisotopes like cobalt 60 but also for plutonium. And the list can go on.

The options for dealing with this range from refusal to accept certain nationalities for education and training, which for some countries runs counter to their political credo, to reaching secure agreements with the countries in question about foregoing, on a credibly verifiable basis, the development of sensitive technological activities not critical to a civil nuclear program.

But to return to the basic question of the relationship between Atoms for Peace and proliferation, one cannot avoid concluding that education and training for ostensibly peaceful nuclear activity, can end up being used in support of a weapons development program and that civil nuclear programs can be effective covers under which military nuclear activities can proceed. It is fair to say that as of this time, this has fortunately been true in only a few countries, India, Pakistan, Iraq, and apparently, Iran as well.

Let me conclude with the following remark, at one level as reflected in the assertions by Alvain and Bergman, that there is only one atomic energy and the peaceful and the military atom are Siamese twins, it cannot be denied that Atoms for Peace at least opens the possibility for proliferation of the military use of the atom. The caveat is that proliferation is fundamentally a political act and argument about technological determinism notwithstanding, the motivation and incentive, which can range from security to status and prestige to hegemonial aspiration is the intervening variable between technological capability and a proliferation outcome.

In the law of negligence we have adoption of attractive nuisances to which we might place nuclear technology. But a political incentive still remains the predominant requirement. "Atoms for Peace" was conceptually strong and visionary. The problem it ran up against is that implementing practices and policies by states, capable of making a difference, does not always keep up. Assuring that the dissemination of nuclear technology and material would be used for civil purposes required that institutions with the requisite authority, resources and political support were in place and employed in tandem with the diffusion of nuclear technology.

As we noted, suppliers in a sense, raced into the field to place their flag and, in so doing, sometimes left behind the terms and conditions upon which their assistance was being made available, Canada and France being cases in point. Had the IAEA been used as a vehicle for transactions, its statutory provision and safeguards on Agency insisted even on state supplied projects, would have had to have been invoked. And if that has happened at the outset, it would have been an action- forcing event in the establishing of an operational safeguard system.

That did not happen until three years after the agency was up and running, diminishing the role that the IAEA could have played in shaping the world of international nuclear transactions.

Lastly, thinking more outside the sovereign state box also might have staunched proliferation opportunity. In particular at the time of the NPT and after putting political support behind concepts such as regional nuclear fuel cycle sensors, where sensitive technological activities could have been conducted, thereby reducing the presence of the processing and enrichment facilities on national territory under national jurisdiction and control as well as the need for some of the training and design and management that might have been provided under the rubric of civil nuclear development.

There remains today a need to revisit the institutional alternative to purely national owned and operated nuclear fuel sites and to find a way to fulfill the promise and commitment of Article Four of the NPT, which as mentioned, codifies the perceived benefits for “Atoms for Peace.” Thank you.

[applause]

Question and Answers:

BROOKS: We now turn to the part of the program where you get to ask the questions. I’m going to stand for this because I can’t see that half of the room from where I’m sitting. I would ask that you identify yourself and, no matter how piercing you think your voice is, wait until the microphone gets to you. And I think we start with a question in the back.

NEFF: I’m Tom Neff from MIT. I have a question for Larry Scheinman. First I want to correct one of the things that Phil Sewell said. ...(Inaudible) receives about \$425 million dollars from USEC for the enrichment services and I think the company profits by about \$100 million dollars a year. Phil was right. This is money that should go into pockets of the sensitive nuclear workers that protect this material.

My question for Larry was Iran. We have gone from a period of a week ago, in which we were being very tough on Iran and we’ve gone now to where three countries are now promising cooperation in helping Iran with its civil nuclear program. Larry, could you comment a little bit about this switching of gears and where you think this comes out in the perspective of history?

SCHEINMAN: Well, I think it is enormously comforting to see that Iran has, in fact stepped away from what looked like a very conflictual and contentious approach. But I would worry about what kind of an outcome we get in the following sense.

If it were true that Iran would be prepared to completely dismantle its enrichment activities in exchange for some kind of a guarantee for long-term fuel supply from outside, presumably the European Union from what I understand to be the case, and that this could be done in the context of an additional protocol with all of the bells and whistles of transparency that that could bring-- We may need even more. Then I see this going in a very, very constructive direction because I

think this would be a bell weather for how other countries would have to try to treat this approach to their fuel cycle desires in the future.

Iran is a real test case in this regard. If on the other hand, what looks to is to take a leaf from Ron's book, some kind of a multi-nationalization of an Iranian enrichment program sitting on Iranian territory, that becomes more problematic and I would be concerned about that, although I must say that, if I think about some of the questions that Ron just raised in his run down of the issues of what do we mean by this, that, and the other, there's no need for us to be uniform in how we approach this. I think we can take this region by region or country set by country set as long as we stay within the parameters of the arrangement that brings about the outcome that we desire, which is avoidance of further proliferation.

BROOKS: I had a question over here and then we'll go over there.

HORNER: Dan Horner from McGraw Hill Nuclear Publications. I think that you just made a-- I'll pose this question as a devil's advocate question and then ask the panelists to respond. In Paul Longworth's presentation he mentioned, as part of the U.S. nonproliferation efforts, the effort with regard to the U.S. supplied research reactor overseas and converting those reactors and bringing back the HEU fuel. But wasn't the supplying of those reactors a direct outgrowth of the Atoms for Peace Program and, in that respect, isn't that a proliferation downside of the Atoms for Peace Proposal and wouldn't your job have been easier if that aspect hadn't taken place?

If Paul could respond to that initially and maybe some of the other panelists then could jump in. Thanks.

LONGSWORTH: You know, it's not, and I'm going to give you a strange answer here. It's not, because the original deal was that the spent fuel from those reactors would come back to the U.S. and I think, even in 1953 when they kicked that program off as the-- We realized that obviously we needed to repatriate the nuclear material. It is a strange answer because we are going to complete about half of the fuel that we've identified in an environmental impact statement by-- In the next few years we will have only addressed about half of the fuel that, again, we designated to come back to the United States.

So we are about halfway there in fulfilling our commitment from 1953. But I think we are going to continue to work on that and get that stuff back. But, no. I think it was part of the original bargain that that stuff would come back to the U.S.

INDUCI(?): Joseph Induci at the Brookhaven Laboratory. There used to be something called the Fissile Material Cutoff Treaty, which I thought had potential to bring in a few countries that aren't currently covered and now I hear nothing. Would one of the panel members be willing to enlighten the group on just what happened there?

BROOKS: Ron?

LEHMAN: The Fissile Material Cutoff Treaty was initially envisioned as sort of either of two things, one was a universal treaty open to all parties, the other was something that one would do, maybe on an interim basis or a regional basis, but primarily focused on South Asia and perhaps the Middle East, i.e., the non-parties as well as the weapon states. Interestingly enough, there was a UN resolution in the General Assembly co-sponsored by both the United States and India, supporting a fissile material cutoff. And all the P-5 have said that they can live with it.

Having said that, it is in the conference on disarmament. It's caught up on linkages, by and large issues such as Pakistan's concern about making sure that it deals with residual stocks. It is not enough to cut off the production for weapons purposes; they want to deal with the existing stocks. There's linkages to India by the issue of a time bound framework for disarmament. In short, there's been maybe some flexibility on each of those, at least expressed by the parties. But the process seems bogged down in the CD.

ElBaradei in his Economist article raises the question that others have raised before of whether or not this could be the basis either for a new restraint regime or an additional restraint regime. But thus far people have not been able to break it away from these linkages.

BROOKS: I would like to just add that as the community thinks about the future, the Fissile Material Cutoff Treaty is a good example of the limitations of formal multi-lateral arms control. It's it's one of the reasons why we probably need to spend more time thinking about, as Ron said in his presentation, whether "international" means the same sort of thing that it has always meant or whether there are commercial international agreements a la the USEC Agreement that are, at least part of the solution.

We had a question down here.

___: Question for Mr. Sewell, I was intrigued by his suggestion with regard to the government sponsoring a reactor, the intent of which is to get rid of the, let me call it, surplus nuclear materials in Russia and, perhaps, even our own defense programs. We are not only having the problem with uranium 235, we also have a problem with regard to plutonium 239. And if the real objective is to get rid of those materials-- There have been people said, "Well, you just bury them."

But if you really want to get rid of them and get a new reactor into being, you would design the reactor core, which initially would burn straight 235 or straight 239. And if you do that, in the case of the 235 rather than using low enriched uranium, you don't make any more plutonium, which you would in your scenario, and the people would jump on that, the anti's, saying we're really not doing what we want to do.

So initially these reactors, which you are suggesting, could be designed to burn straight 235 or straight 239 and really get rid of all this surplus E-2(?). Economically, and for the long run, it doesn't make any sense, but at least politically, if that's the objective, it would succeed. Thank you.

BROOKS: Bill, do you want to respond?

BILL: I can't correct you at all, I don't think. That is a very good suggestion. The only thing I could say is that most reactors today are designed to use low enriched uranium and that's the concept that we were trying to do so that we wouldn't have to be any major investments in a nuclear infrastructure for commercial basis. But conceptually, the concept, the idea that you propose is valid.

And the idea that we put forward, in terms of government support in burning basically, nuclear materials, is just that. It's an idea of the government and industry to grasp and design in a way that's optimum, optimum in terms of meeting policy objectives by the government and the world community and also in a way that will help provide incentives to build a new nuclear reactor that will get things started, with respect to the increased use of nuclear power that has so many benefits.

That incentive, again, would be one in which the government doesn't have to pay anything in the end. It's merely a backup incentive that would be paid back and looking in a way that several different objectives can be accomplished at once and that's the main idea in concept. And your concept and idea is just as valid and I just applaud them all. It's good for mankind, good for the world. That's what we're proposing today.

BROOKS: Let me just point out a third concept that's actually what we're doing. Some of the defense HEU is, in fact, being burned in U.S. reactors -- TVA reactors. In addition, at a galactically slow pace, we are working with the Russian Federation to the elimination of 34 tons of weapons plutonium in each country through conversion into MOX fuel. It doesn't make any economic sense either but it does allow us to take advantage of existing reactors.

We had a question over there.

KEEN: My name is Linda Keen and I'm President of the Canadian Nuclear Safety Commission. My question is for either Ambassador Lehman or for Mr. Longworth. Can you see in the future a safeguard regime for countries who are committed to peaceful use, who have put in extensive safeguards but is more risk based than the blanket program that we see now?

LEHMAN: I'll go first and buy you some time. The classic issue is the cookie cutter problem. One size does not fit all. And there are tremendous inefficiencies and actually drawbacks in trying to make one size fit all. The result is that we spend a tremendous amount of money verifying things that are low risk and many of our arms control efforts but then can't apply what is needed to deal with areas that are of higher risk.

In 1991, our approach to dealing with North Korea, for example, was not only to have them be parties to the NPT and have an IAEA safeguards agreement, but there was the North-South Denuclearization Agreement, which would have provided for no processing, no enrichment, North or South, and for separate bi-lateral inspection regime, the idea being that North Korea was a greater risk. This was a way to enhance things.

The problem is that in many of the international fora, the question of a common standard and universality of membership drives much of the debate, much of the question when you deal with

India, for example, it has to do with their desire to have a common standard for everybody which would be fine if you could create those conditions but, in fact, things aren't the same everywhere.

However, what I have experienced is, when you get more into the, I'll use the generic phrase, cooperative threat reduction and constructive engagement, you start to deal with practical problems that inevitably have to deal with the specific differences. And in many cases, I think the great debate about the future of arms control, international constraint and cooperative threat reduction is really the great debate between how much emphasis you put on standardization of norms and how much emphasis do you put on engagement, constructive engagement.

LONGSWORTH: You know there are so many nuances with how safeguards work actually gets done at facilities and I'd just like to parrot what Ambassador Lehman said. Inspections are the tool to the end not the objective. And I think everyone would agree that the IAEA probably spends a lot of money inspecting facilities that are not really a proliferation risk. For example, in the U.S., I don't think anybody has accused the U.S. of selling plutonium or weapons on the open market. But because inspections are a tool and because of the universality principle, I think we allow inspectors to come in and we fully support that but it is a problem because it does take limited IAEA resources and the UN is inspecting facilities that don't pose a great proliferation risk. But it is the way you get other countries to open up their facilities. So it is a tool to the end.

BROOKS: Back here.

LYMAN: Hi. I'm Ed Lyman with the Union of Concerned Scientists. I wanted to ask a follow-up question to Dan Horner's question on research reactors. With all due respect, I don't think you really gave a complete answer to the question of whether exporting HEU research reactors all over the world was the best idea or not and, in fact, the other part of the answer you left out, is that not only are we taking the spent fuel back but we are persuading reactors that we had shipped that only used highly enriched uranium to convert so they no longer need to use highly enriched uranium but can use low enriched.

And that was a flaw in the original regime that we're trying to play catch up on. In that respect, I'd just like to ask you, it would be a terrible legacy, 50 years after Atoms for Peace, if our own export control law was to be significantly weakened, yet that's exactly what's going on in Congress right now, where's there's an attempt to modify the U.S. HEU export control laws to make it easier for certain countries to receive highly enriched uranium without any obligation to work with the US to convert.

And I am just wondering why the administration is not, to my knowledge, going on record and said anything about this particular question, which I think is quite important and something that my organization is fighting very hard for. So, thank you.

LONGSWORTH: Let me start at the beginning of your question and work through it. It wasn't possible to build reactors at the time with low enriched fuel to achieve what you needed to do for science, medicine, agriculture and other purposes. I wouldn't describe it as a flaw in the original approach because I think the United States took the best course available to it at the time was,

we'll send the fuel out and we'll take it back. And it's taken 50 years to start doing that but we're making progress on that.

I do want to point out, on behalf of Ambassador Brooks, it is not his program or mine that is responsible for taking those back. It is another part of DOE, but (laughter) so, for the record-- But now low enriched fuels are becoming available and it is possible to have the same nucleonics in a reactor and get the same performance with difference kinds of fuels, low enriched fuels, and we're beginning to do that.

One of the programs that we carry out is to convert these reactors as I mentioned in my remarks. With regard to the Burr, Schummer, depending on which one is being debated in the energy bill, you know, interestingly enough, we were unaware that that provision was in there. I believe we are opposed to it. Frankly, I may get in a lot of trouble here, but I think we were opposed to the Schummer amendment because we have all of those authorities that Schummer, which was the underlying provision that was amended, that it required us to take a lot of steps that aren't necessarily appropriate to have in the statute.

And so I don't know if we agree with either provision, the underlying Schummer amendment or the Burr amendment, which you refer to would weaken the Schummer provision. So I think we are opposed to the Burr, but we are also opposed to the underlying Schummer amendment, which was being modified.

BROOKS: There was a question over here but I lost where it was. Yes, sir.

POMPER: Miles Pomper from Arms Control Today. A question for either Ambassador Brooks or his Deputy-- You mentioned the additional protocol and that it might come up before the Senate in the next few weeks, what's been holding it up? It's been held up for close to a year now and my understanding is that it is infighting in the administration between the State and Defense Departments.

LONGSWORTH: President Bush has sent it to the Senate so it is pending action by the Senate Foreign Relations Committee. While they are doing that, we are having discussion within the administration on exactly how we would implement it. But it think the next step is for the Senate to hold hearings and provide its advice and consent or not provide its advice and consent.

BROOKS: The President has made it very clear on wanting to see the additional Protocol brought into effect. As to what's holding up hearings, you're talking to the wrong branch of the government when you are talking to Paul and I.

More questions. Yes, sir. Down here--

___: I was glad to hear of Mr. Sewell's proposals for cost-benefit to the public of expanding nuclear power to burn up some of these materials. It doesn't stretch my imagination very much to think that the public would also accept a certain amount of public funds going to try to purchase this material and keep it out of the hands of terrorists, if it is only a few billion dollars a

year, when the public supports hundreds of billions for defense, if the public was just explained the affect of not doing this compared to the effect of the 9/11 incident on our country.

Could somebody answer why we don't have the government proposing to spend some taxpayers' money on this in advance to get this material and then put it in reactors as we build them?

BROOKS: Well, I'll answer it. Secretary Abraham proposed and his Russian counterpart agreed well over a year ago to a parallel program that would create a strategic uranium reserve. We would purchase basically whatever the Russians would chose to sell us and the quantity is still being debated. Right now it is only a few tons a year. Blend it down and make it sort of the uranium equivalent of the strategic petroleum reserve. It would just sit there minding it's own business, but it would be in a form that would be suitable for energy us and unsuitable for weapons use.

There is dispute on the hill as to whether that is good use of public funds and I'll let you know when I see the appropriations act. But the idea is one that the President thought of a year ago and it's basically a good idea. We're also purchasing, and this is small amounts, I mean small amounts in the Russian context but large amounts in anybody else's, HEU from Russia for the handful of U.S. research reactors that have not yet been converted to low enrichment fuel. They'll be burning Russian HEU here very shortly, once again, the will of the funders permitting, and I'm pretty sure it will.

Did you have a question down here? [pause] Can we get a microphone down front?

___: Firstly, I would like to make one historical remark. Indeed, historically, all technologies have become, as they were introduced ...(inaudible) technologies, and all have proliferated in the past. So, what we're trying to do here is historically, totally, unprecedented and, therefore, one should not be surprised that it is extremely difficult. I mean that is one remark. In that sense, Administrator Longworth gave a list of the program achievement and his note was certainly quite optimistic. And there are, indeed, many achievements to be proud of.

But I think it is a matter of the glass either being half full or half empty, namely, there have been developing many impediments and the time scale in which some of these programs have been proceeding have slipped really extremely badly. I mean the plutonium disposition has slipped very badly that one is now talking about 17 years, or whatever the number is. There have been glitches in the HEU Purchase Agreement. There are major problems in the MPC&A [Material Protection, Control and Accounting] improvement in Russia due to, on the Russian side, them not giving access sufficiently, on the American side, due to the insistence on liability protection for the American participants.

These are problems that we don't let the Americans to attend various conferences and so on and so forth. And I was wondering, whether one of the panelists can give some comments, whether there are really some major efforts being made to try to re-accelerate some of the lost time on some of these programs.

BROOKS: Let me, because I think that is really a question that is addressed to those of us who are in government. I can tell you that Secretary of Energy has been more active, as far as I'm concerned, than any Secretary in history in trying to accelerate programs and remove roadblocks I can tell you that the President has been active in pushing these. I can tell you that it was discussed with President Putin at Camp David. And so we are trying to accelerate but I think the honest answer is, it is a very slow process and a very difficult process.

I think that is going to have to be the last question. As I listen to your comments and the comments of the panel, I came to sort of three broad conclusions that I will leave with you. One is that the international regime that grew out of President Eisenhower's vision, hasn't done everything, but it's done a lot. The second is that there are lots of good ideas for the future and we ought to explore those, but all those good ideas are going to take time. And, therefore, I guess, the third is that redoubling our efforts at material protection is probably pretty important in the near term.

With that, I think what is next on your schedule is a break until four, but before you do, I wonder if you would join me in thanking our panel.

[applause]

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