KEYNOTE SPEAKER

Peter Lyons, on Behalf of Senator Pete V. Domenici,
Ranking Member, Energy and Water Appropriations Subcommittee and Budget Committee

David Albright: I would like to introduce our lunchtime speaker. As you are aware, we invited Senator Pete Domenici to join us for lunch today and to share his views on some of the issues that we have been discussing. In particular, we asked the Senator to discuss his perspectives on the direction of the U.S. and Russian plutonium disposition programs in light of the Bush administration's directive to make these programs more economic and cost effective.

Unfortunately, the Senator was unable to join us due to conflicting legislative business. Given that Congress has been in session far longer than many would have expected, it is disappointing but not terribly surprising that Senator Domenici has asked to be excused.

However, we are fortunate to have with us Mr. Peter Lyons, the Senator's science advisor. Mr. Lyons has been asked to deliver a speech on behalf of Senator Domenici.

Peter Lyons: Thank you David, and thank you ISIS for affording me the opportunity to address this conference. I will present some remarks on behalf of Senator Domenici. Unfortunately, because I am here and he is not, I will have to read his remarks verbatim, and try not to stray too far. The Senator himself, I believe, would have made a much more interesting speaker.

With that introduction, let me begin:

"Since my speech at Harvard in October of 1997, I've been calling for discussion and actions toward a rebirth of enthusiasm for nuclear energy. As I've surveyed the options available to us to supply our immense and growing energy needs with clean, reliable, and economic electrical power, I've reached the inescapable conclusion that nuclear energy must remain a strong and viable option far into the future.

"Starting with that speech, and proceeding through many legislative initiatives, I've consistently noted the complex interplay between the military and civilian aspects of nuclear technologies. On the one hand, nuclear technologies offer immense benefits to modern society. But on the other hand, if we fail to control the potential military aspects of nuclear technologies, we may never be able to fully benefit from their contributions to mankind.

"These considerations immediately force careful consideration of nuclear nonproliferation policy, the topic of your sessions today. These are most important subjects, and perhaps until recently, topics that have not been adequately supported by the past or current administration. September 11 should change that.

"That attack in some sense sets a new standard against which terrorist activities will be judged. Unfortunately, we can be sure that terrorists in the future will set their sights on achieving greater disruption, loss of life, and human tragedy than we are now experiencing. That goal may unfortunately draw them towards use of weapons of mass destruction.

"Interest of the al Qaeda network in nuclear weapons has been widely publicized. The immense threat posed by such weapons is hardly news to those of us who have invested great energy into avoiding these threats in the past. The events of September 11 provide increased motivation to all of us involved in this area to redouble our efforts to achieve effective nonproliferation programs that provide international control of the materials, technologies, and know-how for these weapons that may be sought by future terrorists.

"There's been a widely publicized review by staff of the National Security Council (NSC) of the nation's nonproliferation programs. Certainly a review by the new administration is completely appropriate—I support the principle of the review.[1]

"But I've noted in previous remarks that it was extremely unfortunate to have the President's budget request propose significant cuts in those programs without any discussion in Congress, and long before any policy review was completed. Major public policy issues simply should not be decided by a footnote in the annual budget process.

"I was asked in my remarks today to focus on disposition of excess fissile material, but before turning to that emphasis, I want to note that essentially all of the critical Department of Energy (DOE) nonproliferation programs were affected by these proposed cuts. That included extremely important programs like the Materials Protection, Control, and Accounting (MPC&A) program for fissile materials and the programs to prevent brain drain—the Initiatives for Proliferation Prevention (IPP) and the Nuclear Cities Initiative (NCI).

"MPC&A has made real progress, with improvements impacting roughly almost half of the Russian fissile materials outside of weapons. Of course, that leaves a lot of material that awaits security and control upgrades, which is not consistent with proposed reductions in the efforts.

"Suggestions in the review to combine the two brain drain programs struck me as particularly unfortunate. Both IPP and NCI have critically important, and distinctly different, missions. IPP advances technologies developed by former Soviet Union scientists toward commercial reality. It's certainly critical to encourage more support of these efforts from the commercial sector and these efforts help bring these scientists into the modern business world.

"NCI is the only program focused on assisting the Russian Federation with downsizing its massive weapons production complex. The Russians recognize the need for this downsizing, and it is of vital interest to us. As long as the Russian Federation has the potential to quickly fabricate very large numbers of weapons, agreements to downsize arsenals have only limited impact.

"Some of the NCI goals can be accomplished with immediate commercialization, and those efforts do profit from close coordination with the IPP program. But some aspects of NCI require a long-term view that may proceed through several steps prior to a commercially sustainable venture; those efforts do not fall within the expertise or charter of IPP. For that reason, I regard combining the two programs as a serious mistake. The Energy and Water Appropriations bill designated a single program manager for both NCI and IPP to exploit synergies without formally merging them.

[1] The review was completed and a summary released by the White House at the end of December 2001. See White House, Office of the Press Secretary, "Fact Sheet: Administration Review Of Nonproliferation and Threat Reduction Assistance to the Russian Federation," December 27, 2001. <http://www.whitehouse.gov/news/releases/2001/12/20011227.html>

"I'm pleased that the final Energy and Water bill restored most of the cuts to nonproliferation programs proposed by the administration, but we could not find enough funds to fully restore them. More importantly, we could not accelerate them. We are very hopeful that other funding vehicles in this Congressional session may provide opportunities to enhance these programs."

— Let me just depart from the speech to note, for those of you who may not have followed it, the Defense Appropriations bill was passed late on December 7. A series of compromises was reached between measures proposed by Senator Stevens and the administration for the $20 billion supplemental that had been part of the original $40 billion that was adopted post-September 11. Then there was a separate $15 billion proposed by Senator Byrd, which included a number of nonproliferation activities. By the time that this bill finally passed, a $20 billion supplemental had been crafted that included many of the nonproliferation programs. Thus, the concern expressed by the Senator in this speech—and he has expressed it many times—that the nonproliferation programs were seriously underfunded, has now been rectified with about $226 million added to DOE late Friday night. That has now passed the Senate. However, this still has to go through a House/Senate conference, and how much of this will be preserved in conference remains to be seen. But Senator Domenici viewed the Senate's action last week as very good news.

Let me go back now to the Senator's speech:

"Let me now return to the fissile material disposition programs, and I'll focus on plutonium disposition. By way of introducing the subject, let me first note that any study of this issue requires parallel progress in both the United States and Russia. Neither country could tolerate a situation in which it is the only one disposing of plutonium. Thus, it's pointless to talk about one or the other program in isolation.

"The timing and publicity surrounding the NSC review were especially unfortunate in their impact on plutonium disposition. This created an environment of immense confusion about the administration's plans—certainly in Congress and also with many other parties. To some extent, the publicity while the review was underway may have created a series of self-fulfilling prophecies as it injected uncertainties into national and international programs.

"There are certainly many important nonproliferation programs that are ongoing between the United States and the Russian Federation. But it would be hard to pick one that is more important to global security than plutonium disposition—or one that is more important to keep on track, given the difficulty of ever getting it started. The risks to world stability from leakage or diversion of plutonium to terrorist states are incalculable. The events of September 11 only reinforce that conclusion.

"Even though plutonium disposition is a long process—and incidentally one that I've frequently argued should be accelerated dramatically—we need to get started. With the agreement between the two presidents in September 2000, the wheels of progress were turning. I was pleased to help develop aspects of that agreement during several interactions with the Russian leadership of Minatom, both here and in Russia, and I was in Moscow with our President in 1998 when the first agreement was initialed.

"That review started from some reasonable assumptions, which I'd paraphrase as:

- "U.S. plutonium is not a security issue, so why spend money on it?
- "Russian interest in the MOX approach with LWRs is very limited, so why require that route for disposition of their material?

"It's been widely reported that the NSC review questioned whether simply storing our plutonium might be preferable and less costly, and whether the Russian Federation might be interested in development of advanced reactors that would be of greater interest to them, while also providing better future disposition opportunities for weapons-grade plutonium.

"I've already noted that I have no problem with a careful review by the new administration. But I am concerned with many elements of their process. Specifically:

- "First, the current program for plutonium disposition was derived from the comprehensive study of the National Academy of Sciences, it should not be quickly dismissed;
- "Second, while it is true that we have no problems with the security of our plutonium, the whole idea of a joint program between the U.S. and Russia was to accomplish progress in parallel;
- "Third, the current program was seeking international partnerships to offset costs of the Russian program. It had already been agreed that a focus of the Genoa G-8 meeting was to explore and finalize an international funding package. Many nations had already made significant financial commitments. By introducing uncertainty just before the Genoa meeting, and terminating our own efforts to secure international monetary pledges, we guaranteed that the G-8 could produce no additional pledges nor finalize a funding program;
- "This latter point ties in with my concern that, as far as I've been able to determine, neither the Russian Federation nor our international partners in the current program were included in the evaluations undertaken by the NSC. The idea of revising an international program without involving our international partners is one that I find very hard to comprehend;
- "The current program has been carefully developed to satisfy multiple objectives in the United States, specifically our urgent need to complete the cleanup of some nuclear weapons legacy sites like Rocky Flats. In fact, elements of our disposition program were directly tied to milestones for that cleanup. As far as I've been able to determine, there was no coordination between the needs of the cleanup program, and most importantly the needs of the states with major stakes in this process, and suggestions to drastically modify our disposition program. The concerns in this regard from the Governor of South Carolina are very real and very well justified;
- "Another point: advanced reactors may play a significant role in the disposition process, but do we really want to harness a program of such global significance to development schedules for reactors that don't exist yet?
- "Finally, by conducting their highly public review, the NSC injected tremendous uncertainty into every element of the plutonium disposition program. That uncertainty carries over to the private companies who have contracted with our government to utilize MOX fuels. Those companies are involved in running reactors, and uncertainty in fuel supplies is not something they can lightly tolerate. Similarly, one effect of the NSC's process may be to lose the opportunity to use the Hanau MOX plant within Russia.

"I should note that our current path for disposition is not one that I've simply accepted. For example, I have never been enthusiastic about the immobilization component of the program, but I have accepted it as part of an integrated approach.

"I have also been extensively involved in study of other approaches. In fact, I proposed alternatives to the current program long before we ever set out on the current path. For example, I've repeatedly noted that the single most important step in lessening the proliferation threat from dismantled weapons is to promptly transform the material out of classified shapes and get it into internationally-monitored storage—and that primary objective remains relevant today.

"As another example, I championed two of my own ideas, which were labeled as 'Eurofab' and 'Euroburn,' for weapons-grade plutonium. I discussed these ideas extensively on a visit to France, Germany, and Russia in 1998. I suggested that the European capabilities for MOX fabrication might be tapped in the Eurofab approach and that the extensive European experience with the use of MOX fuels might enable them to use some of the MOX prepared from weapons-grade plutonium in the Euroburn idea.

"At least at that time, these ideas were not accepted by the French. They were very concerned with upsetting their plans to balance their extraction of plutonium at La Hague with their use of that plutonium as MOX in European reactors. There was also great concern about the logistics of introducing weapons-grade materials into their fuel cycle. I still wonder if some of these ideas might enable a greater rate of disposition in the future at lower costs, if the European concerns could be somehow addressed.

"As another approach, I've championed study of new reactors for disposition of plutonium, with the hope that they could accelerate the rate of disposition of Russian materials. The high temperature gas-cooled reactor has been jointly funded under this program between the United States and Russia for several years, plus I've advocated careful study of thorium fuel assemblies as another option. I've been interested to note and encourage strong international interest in joint sponsorship of such new reactor approaches.

"By this discussion, I hope to emphasize that I recognize that there *are* alternative approaches to plutonium disposition, and I don't want to rule out the possibility that better programs may be developed to replace our current path. But I take a very dim view of our recent approach, which has seriously undercut the existing MOX program in both the U.S. and Russia long before there was careful evaluation of any new comprehensive program.

"The final Energy and Water Appropriations report addressed concerns with plutonium disposition. Passage of that bill and the President's signature endorsed the conferees' view that plutonium disposition is 'one of the most important nonproliferation initiatives undertaken between the United States and Russia.' The report also discussed the necessity for coordination with environmental management programs. The bill protected funds previously set aside for plutonium disposition to ensure they are used consistent with the current disposition program. The bill also provided funding to keep the pit and MOX facilities on track at Savannah River.

"In addition, a number of Senators joined me in a bipartisan amendment to the Defense Authorization bill expressing their concern and support for the plutonium disposition program. While that amendment wasn't included in the final Senate-passed bill—due to some unfortunate technical problems at the last minute—I understand that a version of it is being debated by the conferees on Defense Authorization. I'm very optimistic that we will see some strong language in the final version of that legislation.

"And as another important action, a bipartisan group of 20 Senators signed a November 13 letter to the President emphasizing the importance of the plutonium disposition program.

"I am now very optimistic that the combination of the President's interactions with President Putin in the recent summit discussion, coupled with these strong expressions of Congressional support for the

plutonium disposition program, will lead to far stronger commitment and interest from the administration and to improved budget requests. In addition, I hope stronger budget requests will be seen throughout the full suite of nonproliferation programs.

"Cooperative programs with Russia are our best hope of minimizing any risk of proliferation of the weapons of mass destruction from the former Soviet Union. As Senator Howard Baker and Lloyd Cutler emphasized in their superb report, we have an historic window of opportunity for progress in these areas.

"I compliment the Institute for Science and International Security for your sponsorship of this conference today. Discussions like this are vital to ensure that we maximize progress on these issues that can contribute so very much to global stability.

"I'm a strong champion of a vision wherein nuclear materials play a vital role in ensuring reliable energy supplies for the world. In my vision, nuclear energy can be one of the tools by which we help the world obtain clean sources of reliable energy—energy that can be used to dramatically advance standards of living around the world. But I'm also abundantly aware of the potential for disaster if nuclear materials are improperly used by those bent on international terror. The plutonium disposition program is an important investment in a safer world and future utilization of nuclear energy."

Thank you. I will be glad to take questions if that is appropriate.

David Albright: Thank you for your comments. I am sure that there are questions.

Question: Thank you. I have two questions on two separate parts of the Senator's presentation. First, when you said that the administration's extended review in the NSC created a self-fulfilling prophecy in other countries, given that it has now been a year or so in the making, is there any way to un-fulfill that prophecy? Can the administration redress any of the setbacks in the international program?

Second: The President's energy plan includes the exploration of the closed fuel cycle in the United States. In the context of September 11, what kind of fine-tuning is necessary, in your view, regarding security at facilities or during transportation?

Peter Lyons: On your first question, we hope that the administration will move ahead very promptly to finalize the NSC review, make it official, involve the Russians and the other international partners, and move ahead at a very brisk pace. There have been suggestions within the last week or so that the review is close to being concluded, and that there will be continuing discussions in the interagency process. Senator Domenici will be extremely interested in seeing those discussions make progress as rapidly as possible.

On the closed fuel cycle: This subject is of immense interest to Senator Domenici. He has spoken—on many occasions—about his concerns that the United States may be not serving future generations very well with our single-minded focus on a once-through cycle. He is not convinced that spent fuel should be considered as waste. He believes that it may be appropriate to allow future generations to decide whether the energy content of spent fuel is an important resource. He is very interested in approaches—that could include retrievable storage at Yucca Mountain—that would allow future generations to take advantage of future knowledge, and decide exactly what their view is on the utilization of spent fuel. The Senator is also very pessimistic about the overall concerns about the acceptability of repositories.

As far as fine-tuning from the standpoint of post-September 11, the Senator has certainly emphasized that there are many critical nodes of our infrastructure—power plants, tank farms, refineries, chemical plants, and nuclear power plants—that need to be looked at very carefully. At the same time, he is quick to point out that nuclear power plants are very well-hardened structures. They represent about as hardened a commercial structure that you are going to find.

That is not to say that you are not going to evaluate and be very careful of all terrorist activities. But in general, he has treated this issue from the perspective that the President's policy is to root out terrorism at its source. To pretend that we are going to be able to protect every critical node of infrastructure is a bit ludicrous. We have to defeat terrorism at its source, as well as be alert and harden structures wherever possible.

You mentioned transportation. There are certainly some who view transportation as an immense risk. Certainly transportation has high risks associated with it. However, it also is an area where both the United States and European countries have demonstrated the ability to understand and manage those risks with great success. I think that there have been on the order of 3,000 shipments of spent fuel in this country over a distance of about 1.6 million miles. We have never had a breach of a spent fuel canister. The record in Europe is also spectacular.

I agree that the transportation of spent fuel needs to be done very carefully. But it is something that we understand how to do very carefully. Perhaps it can be improved; I'm not the expert. But we have an excellent record.

Question: This is an opinion disguised as a question. If you assume that the NSC review is being completed on plutonium disposition, and that it will reaffirm the program and its importance, then I believe that it will be very important for the administration make these conclusions very clear at high levels. We have gone through this long pause that you characterized very well—and even before that period, we were in something of a study mode. I think that if the review reaffirms and re-endorses the importance of plutonium disposition, then the administration has to be encouraged to communicate that signal over at high levels, and not express it in a way that suggests that we are going into still another study phase.

Peter Lyons: I could not agree with you more. There are already examples—the comments that the Senator has made, the letter from 20 Senators that I spoke of, the language in the Energy and Water Appropriations bill, which I am almost positive will be included in the Defense Authorization bill—that have already sent a pretty strong message.

David Albright: Next question please.

Question: Bob Card, the Undersecretary of Energy, in a letter to Jim Hodges, the Governor of South Carolina, said that: "the Department, as directed by the NSC, is nearing completion of the United States-Russia surplus plutonium disposition programs." So I am a little bit confused about what review we are talking about. Is the NSC conducting a review, or is the DOE conducting a review?

Peter Lyons: It is my understanding that the DOE was directed to complete an internal review—again—of options for plutonium disposition. This DOE review is being conducted in support of the NSC review.

Question: To follow up: There is also the requirement from the Appropriations Committees that a report be done by DOE by February 1. I don't know how that report relates to this DOE review that Bob

Card pointed out in his letter to the Governor of South Carolina. But Senator Domenici said in the talk you gave that the Governor's concerns are well justified. Part of his concerns are that the dual-track program—with the immobilization part, in particular—has been terminated. In a letter to Secretary Abraham on December 3, Governor Hodges called upon DOE to honor its commitment to undertake the dual-track strategy, and further said: "I remain opposed to any shipments to our state given the current state of affairs," by which he essentially meant the termination of immobilization.

Senator Domenici has said that he accepts immobilization as part of the integrated approach, but I am not aware that the Energy and Water Development Subcommittee really supported the immobilization program. Rather, the administration's position to basically throw some funds at Clemson University was accepted. The whole immobilization team has been disbanded. So, I would just like to know whether Senator Domenici really supports immobilization, because the money is just not there.

Peter Lyons: Senator Domenici has consistently said that he regards immobiliztion as a very poor component of the U.S. strategy. He regards is as creating a future weapons-grade plutonium mine. He has been willing to support it if it is part of an integrated plan. If an integrated plan can be developed that does not involve immobilization, and the administration proposed no funding for immobilization, he would be very happy to see such a program come about.

As far as Governor Hodges is concerned, it is my understanding that his concern is that there needs to be an exit strategy for plutonium entering South Carolina. That could be the same dual-track proposal. If DOE comes in with a strategy that can show the governor the exit route, then I hope that there can be good discussions along that line.

I hope that comes close to answering your question. To reiterate, there is no enthusiasm for immobilization on the part of Senator Domenici or his staff. If it is a critical part of the final program, then he will support it. And he has supported it as necessary.

Question: Just to clarify: It is my understanding that Governor Hodges wanted to see the dual-track strategy followed as a way to get to this exit strategy. In my communication with him, he still supports that. So it is hard for me to see why Congress did not support immobilization as being a continuing part of the program, not only to satisfy the Governor, but also to avoid derailing the cleanup or Rocky Flats. And the cleanup of Rocky Flats has been derailed because the commitment to this program has been withdrawn. There is a real possibility that the 2006 timeline for Rocky Flats will slip because of this. I don't see that the Governor has budged, myself. But maybe he will accept some other options.

David Albright: Next question.

Question: On the issue of Russian plutonium, there are two threats that I would like to distinguish. The first is the threat of diversion and theft for use by states or non-states. The other is the breakout issue by Russia itself.

It seems to me that the previous administration's plutonium disposition program does not really solve the diversion threat. At best, plutonium disposition would take decades to implement, and in the interim it would increase the risk of diversion by creating MOX plants, through transportation, and so forth.

In my opinion, the most useful thing that one could do is to have a data exchange between the United States and Russia, and expand it globally. Such an effort was stalled by the Russians in the mid-

1990s. After the events of September 11, it is shocking to me that the United States and other countries are not demanding an immediate inventory and accounting of the global stocks of plutonium.

On the breakout issue: I agree with the Senator that the most useful interim priority step would be to get pits into unclassified shapes in Russia and the United States. If you want to increase the time that it takes to get warheads back into use-ready status, converting pits is far more useful than plutonium disposition. I would think that you would have to do this bilaterally.

Peter Lyons: I think that the data exchange is a very good idea. You said that we should "demand it," and I don't know that one can actually do that. It ought to be done cooperatively.

Regarding your emphasis on the need for converting pits into unclassified shapes to prevent breakout: That is certainly a consistent position that the Senator has taken for years. I noticed in this morning's *Washington Post* some interesting comments from Secretary Powell,[2] where he seemed to be very optimistic regarding the status of discussions between Russia and the United States on transparency measures that will be associated with reducing nuclear arsenals. I do not know anything about what is going to be in that proposal, but I would agree with you, and would certainly hope that the first step is as exactly what you said—and what the Senator has said—to move as quickly as possible from classified to unclassified shapes. This needs to be done for two reasons: First, it adds time to the reconstitution of nuclear arsenals. Second, once the materials are in unclassified shapes, they can be under international safeguards. At least in Senator Domenici's mind, the minute you move to an unclassified shape, he would also like to see us moving—both here and in Russia—to international safeguards.

Question: My question may seem a little bit tangential to what we are talking about, but it is related to the atmosphere in Washington. How we are going to deal with the development of treaties? It seems to me that this administration has taken a different view of treaties than did past administrations. In particular, I applaud President's Putin and Bush on their recent announcement that they want to reduce the number of nuclear weapons, but President Bush said that we don't need a treaty to do that.

Could you explain to me the attitude about treaties in the United States today? How are we going to proceed with these international agreements without treaties? You have to consider the Senate, because the Senate has to ratify treaties. Are we going to be able to make progress on any of these issues?

Peter Lyons: I have already noted my interest in Colin Powell's comments in this morning's paper. There was a reference in that article to the development of transparency measures. My guess is—and it is only a relatively educated guess—that the strength of the transparency measures will go a long way to addressing concerns which might or might not be raised in the Senate on the need for a treaty.

A treaty, as you are well aware, can take a very long time to negotiate. I think that has been one of the administration's concerns. The ratification process can also take a very, very long time. It may be possible to make substantial progress without going that route. In my own mind, progress will depend on the strength of transparency measures and other verification measures. But I would bet that every person in this room has a different view on that, and it will be just as valid as my view.

[2] Alan Sipress, "Powell Says Nuclear Deal Is Close: Verification Measures to Be Discussed at Meeting With Putin," *Washington Post,* December 10, 2001; Page A19.

Question: I'd like to ask you a few questions related to security issues and transportation. To what extent has the Senator been briefed on the vulnerabilities that would apply to the very lengthy transportation routes that would be involved in the implementation of the MOX program in Russia? Under this program, the Russians will be transporting plutonium oxide over a distance of more than 1,000 miles to the fabrication plant, and once the fresh fuel is fabricated, it will be transported over distances of hundreds if not thousands of miles to nuclear power plants, where it will be stored until it is used. Is the Senator satisfied that it is possible to get one's arms around that problem such that additional security vulnerabilities are not introduced by implementing the MOX program?

The second part of my question deals with the United States. You are probably familiar with the Sandia Red Team report that was done in connection with an analysis of the can-in-canister immobilization program. That report found that there was a scenario that needed further exploration—and I think that it is still being explored—involving a two-stage attack on the transport casks. In the first stage, a penetrating charge is used to blow a small hole in the transport cask. In the second stage, low explosives are injected into the cask to lift the lid, so the glass logs could be removed and eventually the plutonium snatched from them in the desert somewhere. The Nuclear Control Institute wrote a letter to the Secretary of Energy at that time—and a copy of it was sent to Senator Domenici—asking whether Sandia could be tasked to explore the possibility that, in the second stage of that hypothetical attack, high explosive would be injected into the cask. What would be the potential consequences from that kind of sabotage by terrorists, whose motives would not be theft of cans of plutonium, but the sabotage of a cask containing either vitrified waste or spent fuel?

We never did get satisfaction on that letter, but I am sure that the Senator's office is familiar with our request. We think that this study really needs to be done in order to fully vet the transport of spent fuel within the United States. I was wondering if the Senator would be willing to weigh in with Sandia to complete the second leg of that study.

Peter Lyons: Concerning the vulnerability of transportation in Russia, I would anticipate that the Senator would rely on Minatom to speak to that subject. Neither the Senator nor anyone on his staff has in-depth knowledge of transport vulnerabilities in Russia. But certainly Minatom does, and I would expect the administration to work with Minatom and reach whatever satisfaction is required.

As far as the Sandia Red Team: No, I have not seen your letter. It may or may not surprise you, but there are a lot of letters that come into the office. As far as developing specific scenarios for terrorist activities: That is not something that a Senator's office would do and, in fact, I am mildly surprised that we are discussing in an open forum the details of a terrorist attack scenario. That's up to you—you are the one who did it.

Question: I was referencing an unclassified report that was issued by Sandia Laboratory. Our letter did not contain any classified information, but it does look at a scenario that ought to be addressed. Sandia is in the Senator's state, so he is in a strong position to request such an analysis.

Peter Lyons: Well, the development of design-basis threats is not something that the Senator's office is going to get into. That needs to be done by the country's best experts. If they perceive your scenario as a credible threat—in light of all of the other response mechanisms that this country has—then there are plenty of opportunities to insert it as a design-basis threat for analysis. But I am quite confident that it is not up to the Senate to define the design-basis threat for such an incident.

David Albright: This will be the last question.

Question: This is not a question, it is a comment. Russia was mentioned in connection with the transportation of spent nuclear fuel. May I briefly give some figures that characterize the safety and security of those transports?

The transport of spent nuclear fuel by rail from VVER-440 reactors to the RT-1 facility at Chelyabinsk has been carried out without any accidents since 1979. There have been more than 900 containers transported during that time, including trips from abroad—Finland, Hungary, Bulgaria, and Slovakia. Since 1985, more than 3,000 VVER-1000 spent fuel assemblies—about 700 container trips—from the Russian and Ukrainian nuclear power plants have been transferred to the storage facility at Zheleznogorsk without any accidents causing radioactive contamination. These figures are consistent with those given by Mr. Lyons.

David Albright: So, thank you very much. We will convene our first panel after a short break.

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