Interview

Ambassador Linton Brooks on U.S. Nuclear Policy

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n November 8, 2002, the Nonproliferation Review interviewed Ambassador Linton Brooks, Acting Administrator of the U.S. National Nuclear Security Administration (NNSA). Ambassador Brooks principal responsibilities include maintaining the safety, security, and reliability of the U.S. nuclear deterrent and implementing a wide range of nonproliferation initiatives, in particular cooperative nonproliferation programs with Russia and other states of the former Soviet Union. Leonard S. Spector, Deputy Director of the Center for Nonproliferation Studies (CNS), conducted the interview, with the research and editorial assistance of CNS Research Associate Kristin Thompson.

STATUS OF THE U.S. NUCLEAR STOCKPILE

Nonproliferation Review (NPR): What is the state of the Stockpile Stewardship Program today?

Brooks: The Stockpile Stewardship Program is actually a collection of efforts to gain the tools necessary to make sure that the stockpile remains reliable in the absence of nuclear testing. The most visible of those tools is the National Ignition Facility (NIF) at Lawrence Livermore National Laboratory. That is proceeding extremely well. At this point, we are already seeing light [operating test lasers] through one side of the complex. In the computing area, another important part of the Stockpile Stewardship Program, we've announced a new computer,

called Red Storm, under the Advanced Strategic Computing Initiative (ASCI), which will be located at Sandia [National Laboratory] and built by Cray. We are moving forward on that and will have further supercomputer announcements in the future. Right now we remain confident in the nuclear stockpile and don't see any need to resume testing. However, there is a formal process to assess the safety and reliability of the stockpile.

NPR: Is there any reason to imagine at this time that there will be a problem with the next certification that the stockpile is reliable and safe?

Brooks: While there is no reason to imagine it, you start each of these assessments from a fresh look. The point of the nuclear stockpile stewardship is not to avoid testing, or require testing, but to have a reliable nuclear stockpile. Every year we look at the problem in a very systematic way. Right now, I do not know of any reason to believe there would be problems, but this is too important for us to be complacent.

NPR: The NNSA Inspector General suggested that there was a backlog in surveillance tests and delays in the investigation of certain malfunctions in weapons. How have you tried to address those concerns?

Brooks: We continue to try and chip away at that problem. We do not believe any of them alter the fundamental conclusions that I just gave you.

DEVELOPMENT OF NEW U.S. NUCLEAR WEAPONS

NPR: Let's take a few minutes to look at NNSA activities that are relevant to new weapons. Has the Department of Defense (DoD) identified any requirements for new weapons?

Brooks: There are no identified requirements for new weapons. And I don't expect that anyone is going to identify a requirement in the immediate future. At the same time, we believe that maintaining the capability of the design labs [Los Alamos and Livermore National Laboratories] is important, so we are looking at the ability to examine advanced concepts for two reasons. One is that so that if there is a need to look at modifications of existing weapons or new capabilities, we will be ready. Secondly, we would like to maintain the scientific expertise of the laboratories.

NPR: So this is mainly a training exercise, but the effect is to develop some new capabilities?

Brooks: It is not a training exercise, but a capability and maintenance exercise. I think there are capabilities that need to be investigated. One example, contentious with some, is the President's budget, which calls for us to do an analysis of the so-called nuclear earth penetrator. It does not call for us to develop or test the weapon. It calls for us to analyze the difficulty of developing it [an earth-penetrating weapon] if the President or one of his successors thought the weapon was needed. There have been some concerns with that in the Senate Armed Services Committee, and we await Congressional direction.

Studies that analyze concepts in order to know what would be available to a future President are a wise measure, not only because a future President may need that specific concept—and there have been a number of studies that suggest a bunker buster may have utility—but also because the President may need some other concept we can not now foresee. Maintaining the intellectual capital in the labs is important.

NPR: The B-61 Mod 11 weapon was reconfigured in order to be a bunker buster. Is that considered to be insufficient?

Brooks: We don't know. The DoD would have the answer to that question. Since they have not asked us to come up with a new weapon, I think the answer right now is, "no." But by definition, it [the B-61] has certain limits, most particularly in terms of the depth and hardness of targets it can destroy. The question is not should

you develop a new nuclear weapon, because DoD is the custodian of that, but should you investigate what the implications would be if you were asked for greater capability.

NPR: Is there a team in place to do research now?

Brooks: We're awaiting Congressional direction.

NPR: What about planning for a new facility with an augmented capability for producing "pits" [the plutonium-based nuclear triggers for U.S. thermonuclear weapons]? That seems to imply a return to large-scale production of nuclear weapons.

Brooks: It envisions a return to at least some production. You have to remember the situation in which we find ourselves. Everyday, we have to deal with the reality that we have the oldest plutonium that has ever existed, because plutonium has only been around for sixty years. Plutonium undergoes certain characteristic changes as it ages. We don't know whether it will be necessary in the future to remanufacture pits of existing weapons. It is not necessary to believe that there will ever be a new nuclear weapon to believe that we may someday need to remanufacture the pits of existing weapons. We are working toward an extremely limited pit production capability in Los Alamos, but the ultimate solution is to have a facility that can do limited series production, so that if we discover that some of the weapons that are crucial to our stockpile have problems due to aging, we can do something about it. Right now there is nothing we can do about it.

We have just initiated the process under the National Environmental Policy Act to look at where we might locate it [a new facility]. We're looking at five locations. There is no preferred candidate. We are scheduled to make a decision by early 2004. We are in the phase now of getting initial public comment.

NUCLEAR TESTING

NPR: The earth penetrator will need to slam into the earth and then blow up at the right point to obtain the desired level of impact from the nuclear detonation. It seems implicit that in order to make a suitable device, the U.S. government will have to undertake nuclear testing.

Brooks: Non-nuclear testing would certainly be necessary. One would have to take surrogate metals and slam them into things at high speeds in order to understand

the stresses. We have no proposal to do anything that requires nuclear testing.

We have a proposal to do very sophisticated analyses. We are not likely to conclude that we need testing. If a hypothetical future President were to tell a hypothetical future [NNSA] Administrator to actually develop that weapon, you would have to look and see whether testing would be required. But there is nothing in the proposal that the administration has made that implies any resumption of nuclear testing. The President has made our testing position quite clear: we see no need to test in the immediate future, but we are not prepared to permanently tie our hands through ratifying the Comprehensive Test Ban Treaty (CTBT).

NPR: Right now, you are doing quite a bit of refurbishing of existing weapons with new components. . .

Brooks (interrupting): non-nuclear components. . .

NPR: . . . non-nuclear components. I seem to remember illustrations that show the large number of components included. There has always been concern that as you start to replace older components with newer versions of components you would change the structure of the weapons enough that you would have to consider testing.

Brooks: There are those who argue that that day will come. But I don't think anyone is arguing that it has come yet. The answer thus far has been to depend heavily on non-nuclear testing and very careful configuration control. The answer in the future may well be to depend on the very large-scale computing capabilities that we're building under the ASCI program. I can't point you to a position in time in which the accumulation of individually small non-nuclear changes would lead to testing. I am aware that there are people who argue that position must be out there. But we have not identified where it is, so I don't think that the [nuclear weapon] life-extension program implies anything at all about testing. In fact, it could imply quite the opposite.

NPR: Let's address the administration's policy on testing more broadly. As I understand it, the President supports the current international moratorium on testing and wants to see it continue.

Brooks: That's correct.

NPR: What benefits does the administration see in having a global hold on these tests?

Brooks: The benefits vary. It's obvious that the coun-

tries we speak of as proliferators are not ones we would like to see progress further. Ideally, we would prefer that they not have nuclear programs at all. With regard to acknowledged nuclear powers, we don't see any need for testing at this time.

I would argue that the testing decision, from my perspective, is not about what others do. From my perspective the testing decision is about what we have to do to keep a safe, reliable stockpile. I believe there are both security and nonproliferation benefits from the knowledge that the United States' deterrent is safe, secure, and reliable. If the day comes when the only way you can make sure it is safe, secure, and reliable is to test, then I don't think that whether or not another country is testing should be a major determinant. In the same way, if we don't need testing, then it's not completely clear to me that we would break our moratorium even if another country did, although that decision would not be mine to make.

NPR: One of the criticisms of the test ban had been the anxiety that other states might cheat, that verification measures under the treaty aren't adequate. In the context of the Moscow Treaty, however, the administration has been rather indifferent about what the Russians do with their arsenal. No matter what they do, we have said, we will reduce our nuclear deployments to the levels we want. Even an agreement on reductions, we said, wasn't something we really needed. In this new context, when we are less concerned about Russian capabilities, are we worried that Russia might cheat under the CTBT or that it might be cheating now under the moratorium? Are these issues in the forefront of American concerns?

Brooks: They are not in the forefront of American concerns. One of the great accomplishments of the President has been to transform the U.S.-Russian relationship, or to be fair, to complete the transformation that had begun [under the Clinton administration]. If you want a symbol, it's President Putin being the first to call after September 11. We see Russia now as a colleague and partner. We have issues with Russia, Iran being the most obvious in the nonproliferation area, but the President, Secretary of Defense, and Secretary of State have made it clear that great concern with the details of the Russian arsenal, which was characteristic of much of my professional life, is just not appropriate today. It's not that we're uninterested, we've just dealt with that problem in a different way by the transformation of the political relationship.

NPR: Are there other countries where we would remain concerned about cheating given the international situation?

Brooks: There are clearly countries that the President has identified as areas of concern. We remain concerned about the acquisition of nuclear capabilities in those countries. There are the obvious three: Iraq, where there is now an attempt to take one last chance at trying to reverse the proliferation efforts; North Korea, where the President is working with our allies to reverse the recent outrageous uranium enrichment acknowledgement; and Iran, where Secretary Abraham has taken the lead for the President in working with the Russian Federation to eliminate cooperation that could lead to nuclear weapons. There are obviously countries in the world where we're worried about nuclear weapons. I think that yes, we worry that any of those countries might cheat. The North Koreans just acknowledged that they had been. That seems to indicate that our concerns are real.

NPR: I had thought it was always assumed that the only quite advanced countries might successfully cheat under a CTBT.

Brooks: I don't want to suggest that the fact that a covert uranium enrichment program has been going on in North Korea says anything about its technical capabilities to conduct an evasive test. I'm not commenting on our technical capability to detect tests. I go back to the point I made earlier on testing. The President has made our position clear. If you look at where I have responsibilities, and I don't have responsibilities for the monitoring other countries, I have responsibilities for maintaining the U.S. nuclear weapons stockpile. In that sense, I don't want to forgo the possibility that if I ever need to test to maintain a safe and reliable stockpile that that particular tool wouldn't be available to me. My responsibilities are much more important than theoretical calculations about the degree to which a proliferator can conduct a decoupled test [i.e., a test in a large underground cavern that would mask its seismic signature and potentially avoid its detection].

NPR: Finally, I understand that there has been money requested in the Fiscal Year (FY) 2003 budget for enhanced readiness activities to reduce the lead time at the Nevada Test Site. How far will that take us, if those activities are implemented?

Brooks: Right now it would take us two to three years to prepare for and conduct tests. With the passage of the FY 2003 budget, assuming it is passed as it has come out

of the two Houses of Congress, we will begin the process to reduce that to about 18 months. That number was chosen because if you discover a problem with the stockpile, it will probably take you that long to figure out and prepare a well-diagnosed test. So you want the time to ready the test site not to be the "long pole in the tent," i.e., the factor that ultimately delays your test. You want to reduce [test site preparation time] so that the long pole is the time to figure out the problem, the fix, and the diagnostics. Tests are incredibly complex and advanced, simply because what you're measuring takes place in a very, very short time at temperatures hotter than the surface of the Sun. Getting the data you need out of that is complex, so the design and diagnostics take time. That's how we came up with the 18-month number, and we'll reduce to that number [of months] over a period of about three years.

DISMANTLING U.S. NUCLEAR WEAPONS

NPR: Let's consider the side of your stockpile management activities having to do with nuclear dismantlements. When the Clinton Administration prepared for the 2000 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) Review Conference, it announced to the world that up to a point the United States had dismantled 13,300 weapons. Have dismantlements continued since that time? Can you give us a sense of where we stand at this moment?

Brooks: Yes, dismantlements have continued. [The actual number of dismantled weapons is classified.]

NPR: The Moscow Treaty does not require the elimination of warheads, and the Nuclear Posture Review has called for sustaining a rather sizable active reserve, as well as an inactive reserve. As you cascade the weapons off of the delivery systems and into various reserves, are other weapons being pushed into retirement and dismantlement?

Brooks: I think there will be weapons moved into retirement and dismantlement, but those are decisions that haven't been finalized yet by the DoD. One of the many ways the Nuclear Posture Review breaks ground and separates from the past is that it recognizes that you don't need to have the same time frame for all deterrents. There are some things you can put in a responsive force, because you can see the possibility in the future of needing a slightly larger deterrent, but you don't need it right now. The logic of the Nuclear Posture Review suggests that there will be a significant reserve forever. If you

look at the plans the DoD has announced, however, especially its plans to retire Peacekeeper [the MX missile] and to take some of the Peacekeeper warheads and put them on Minuteman III missiles, then it seems reasonable to assume that the result of the implementation of all those plans will be to declare excess warheads that have not yet been declared excess. So we won't be out of the dismantlement business any time soon.

NPR: Is there competition for use of the facility where dismantlement actually takes place, because that's also the location where refurbishment takes place?

Brooks: That's why it is so important to have a plan, and why we work so closely with the Nuclear Weapons Council and with the DoD. Decisions made about one specific warhead, spill over into other warheads, because typically at the Pantex facility in Amarillo, Texas, where much of this work is done, you have finite numbers of locations and people. There is a need to put all this together in a coherent way. At one level it's a very impressive and frightening because it deals with nuclear weapons. At another level, it's the same work-load planning process that would go on in any large-scale industrial facility where you're doing multiple tasks.

NPR: Everet Beckner testified that there is currently an enhanced capability for dismantlement and refurbishing, but after 2005, he expected the process might be more constricted. . .

Brooks: Yes, I think that's where we are now. Safety is paramount in any nuclear warhead activity. Plans are underway to increase capability without compromising advances in operations safety. The complexity of the warhead itself, the ease with which it can be dismantled, the ability to ship units and components into and out of Pantex, and available resources are some of the factors that affect capacity. NNSA is currently reviewing various scenarios that can increase the number of dismantlements in FY 2004, FY 2005, and beyond.

NPR: Activities at Pantex?

Brooks: Yes, Pantex is the primary site.

THE NPT REVIEW PROCESS

NPR: We have a NPT Review Conference coming up in a couple of years. This administration's record will be a subject at the conference in terms of our support for the Article VI requirement that the nuclear weapon states undertake negotiations in good faith toward ending the arms race. What would the administration be able to

highlight in terms of reductions in the nuclear profile of the United States?

Brooks: I think the administration will highlight the Treaty of Moscow. That treaty will result in deploying levels that would have been thought of as unthinkablely low when I did START I (not that long ago)! The administration will highlight the fact that, under the auspices of the Treaty of Moscow, but essentially unilaterally, it has eliminated the Peacekeeper weapons system. The administration will highlight the Nuclear Posture Review, which increasingly involves defense and non-nuclear strike and therefore shifts us away from a large reliance on nuclear weapons. It will stress that it has a billion dollars a year invested in cooperative denuclearization with the Russian Federation. The administration will highlight that by then, it will be well along with the elimination of 68 tons of weapons grade plutonium. The administration will highlight the new steps we're taking to eliminate nuclear material that will result from the President's agreement at the May Summit to have Secretary Abraham and his Russian counterpart look at new ways we can pursue further elimination in parallel with the existing Highly Enriched Uranium (HEU) Purchase Agreement.

NUCLEAR SECURITY COOPERATION WITH RUSSIA

NPR: I'd like to come back to a few of those issues in just a moment, but for now let's take a look at the programs in Russia. The Materials, Protection, Control and Accounting (MPC&A) Program has been a very important program; every year considerable progress is made, though we have not yet completed the job. Can you give us a sense of the status of the program and the momentum that's being achieved?

Brooks: Sure. The status of the program is good. The cooperation with the Russian Federation is excellent, both at high and low levels. The program works on the approach of first coming in and doing rapid upgrades, relatively simple things such as steel doors, tamper-indicating seals, etc., and then it follows that with comprehensive upgrades, tailored to the specific site and worked out in cooperation with the Russians. I do two parallel programs, one with nuclear materials that are under the control of the Ministry of Atomic Energy (Minatom), and one with warheads under the control of Navy—and we're starting to do a little bit with the Strategic Rocket Forces, previously entirely handled by DoD. For the Navy, we have done rapid upgrades on 100 percent of facilities and comprehensive upgrades on 40 percent. We will complete comprehensive upgrades throughout the Navy complex by 2006.

NPR: 100 percent rapid upgrades on nuclear materials?

Brooks: No, on weapons. For materials, working with Minatom, we have done rapid upgrades on 40 percent and comprehensive upgrades on 17 percent of the total material. It's easier to look at total material than to look at particular facilities. We expect to complete that by 2008. Both of those dates are earlier than we would have told you a year ago. That's the result of a combination of Secretary Abraham's efforts to speed the bureaucratic process in Russia and Congressional willingness to allocate funding. At the moment, we're working hard with the Russian Federation to try to find ways to speed up the process. It's not primarily a question of money, but of ability of the Russian Federation's to do it. We're looking at things like using single large contracts to speed that process, augmenting people who do the Russian side of the analysis to speed up the process. We may do this sooner than the dates I gave you, but even those dates are two or three years earlier than I would have given you a year ago.

NPR: Yes, I recall seeing a chart last year that indicated 2011 as the endpoint. Just to reiterate, the 2008 date would be for comprehensive upgrades?

Brooks: Yes, comprehensive upgrades of materials under Minatom control. There are also eleven Strategic Rocket Forces sites that we will also finish by 2008. The 2006 date is for all of the Navy warhead sites scheduled for comprehensive upgrades.

NPR: That's very impressive. Are we making an effort to consolidate tactical nuclear warheads in fewer locations?

Brooks: That's primarily a question that you should address to my colleagues in the DoD. In the division of labor we have worked out, they focus on the tactical warheads, but in general the answer to that is yes. We would like to see them consolidated, although our ability to influence what a sovereign country does with its own defense posture is somewhat limited. We are also trying to consolidate Minatom material under a program called Material Consolidation and Conversion. This is more often consolidating it within large sites into a single location.

NPR: You mentioned earlier that you have had important discussions with Secretary Abraham regarding pos-

sibly accelerating some of the material elimination programs. Could you update us on that? Would this involve the HEU purchase agreement (under which the United States is buying 500 tons of Russian weapons uranium that has been blended down to make it unusable for weapons but appropriate for nuclear power plant fuel)?

Brooks: At their summit in May, the two presidents agreed to form an expert working group, led by Secretary Abraham and Minister [of Atomic Energy] Rumiantsev—I chaired for the U.S. side—to look at what might be done to increase the rate of disposition of Russian HEU. The working group came up with several possibilities—one is for the U.S. to purchase HEU for DOE research reactors. We have made a formal offer to the Russian Federation to do that. The amounts are modest, frankly, but they would be thought very large in any country other than Russia. We are now in the process of working out the formal arrangements.

A second idea was to purchase additional material, in parallel with the HEU purchase agreement, for a U.S. strategic uranium reserve. The idea here would be to blend down to low-enrichment in Russia, as we are doing now, but that then the U.S. government would purchase it for a strategic reserve. It would be very important to us to do that in a way that doesn't affect the commercial markets, which is part of our guidance from the President.

The third idea was to accelerate Material Consolidation and Conversion Program that I mentioned earlier. That program has been a pilot program and we're working with the Russians now to accelerate that.

The fourth idea was to facilitate the potential for sale to some facilities in Europe. We are in early stages of discussion on that, and I don't want to get into details, but there is some possibility for some European purchase of additional weapons-derived low-enriched uranium (LEU).

A final idea, would be the possible use of LEU fuel from Russia at about 19 percent U-235 for research reactor fuel, once it is converted from HEU fuel to LEU fuel. Since this is a long-term option, I will not say any more about this topic.

NPR: No possibility of Japan building a stockpile of LEU so it wouldn't have to bring its plutonium home?

Brooks: That is not one of the ideas we have looked at.

NPR: Do we have any more plans to assist with the

return to Russia of Soviet-origin weapons-grade spent fuel, so as to build on the U.S. initiative that removed 50 kilograms of such material from the Vinca reactor in Belgrade earlier this year?

Brooks: Well, Vinca returned fresh fuel. We have agreed with the government of Uzbekistan to return spent fuel there from Tashkent to Russia. We hope to have that happen before winter sets in, and we're in discussion now —the Russians had to do some tweaking of their legal system to allow them to accept it. That's been done and contracts are being worked out. I'm hopeful that that will happen.

PLUTONIUM DISPOSITION

NPR: You indicated that you're hoping to be able to speak about progress on plutonium disposition to the NPT Review Conference in 2005. I remember an old schedule that indicated the first disposition wasn't to begin until 2007.

Brooks: I will have broken ground for the MOX facility [to dispose of U.S. excess plutonium in the United States] by the time of the Review Conference, so I'll be able to point to a real building and not a bunch of blueprints.

NPR: Would the U.S. facility be built if there were delay in launching a similar facility in Russia?

Brooks: Well, I hope to have results in both places. Over there is a little fuzzier right now.

NPR: Would the American program go forward if the Russian program didn't?

Brooks: They are closely coupled, but I don't regard that as requiring that they have to do the same thing on the same day. We're in final discussions with the Russians now on their program, and I think we're going to come to an understanding that will mean we're going to be moving forward in parallel. The programs are intended to proceed in parallel.

NPR: What about efforts to shut down Russia's plutonium production reactors?

Brooks: As your readers will know, there are three reactors that produce weapons-grade plutonium that also produce heat and light for the cities in which they are housed. I took that program over from the DoD last December, but the first actual funding has to come from the Department of Energy authorization bill now in Congress. Once the FY 2003 Authorization Act passes, I'll have access to prior appropriations now held by DoD. I expect to shut

down the first two of the reactors within 60 months, which is roughly 2007, and that is limited by technology. We're basically building replacement facilities. The third one, which is in Zheleznogorsk—technology would let me shut it down a year after that, but right now, funding would probably mean I won't shut that down until about 2011. I'm looking at ways I can speed that up.

NPR: Are they shutting down in the summer, so that they are not producing additional plutonium when the cities don't need the heat or electricity?

Brooks: Great question, don't know.

NORTH KOREA

NPR: In North Korea, IAEA inspectors as of today remain present at the Yong Byon site doing their monitoring work to ensure that nuclear materials there are not used for nuclear weapons. Are there DOE technicians or contractors also in the country working at the site?

Brooks: There are small contractor teams there as part of our routine maintenance of the spent fuel canisters. That team is in there for about another month and then it will come out. It is not the permanent presence. My understanding is that the routine there for both the IAEA and the spent fuel canisters maintenance team has been unaffected by the recent developments.

IRAN

NPR: You mentioned earlier that Secretary Abraham had a leading role in terms of pursuing administration policy [toward Iran]. It is not my impression that we've had much success, because the President continues to reiterate this area as one of the challenges we still face. Can you update us on what has been happening and where you are headed?

Brooks: We continue to be in discussion with the Russian government about ending its nuclear cooperation with Iran. We have heard some helpful things from the Russian government. But we are not quite there yet. So, if by successful, you mean, have we resolved all issues, the answer is, "no." If, by successful, you mean are we making progress toward resolving the issues, I think I am optimistic, although on something of this importance you have to be cautious.

NPR: The administration has supported the idea of international spent fuel storage in Russia as an alternative revenue source that would compensate for Russia end-

ing its work on the Bushehr reactor in Iran. What is the status of that initiative?

Brooks: Let's be precise. The administration has said that it would be prepared to consider giving consent for U.S.-origin spent fuel, which at the moment means fuel from Taiwan, South Korea, so that it could be stored in the Russian Federation. But we're not prepared to discuss giving that consent until Bushehr is resolved.

NPR: Bushehr?

Brooks: Until the issue of Iranian nuclear cooperation

is resolved.

NPR: Including Bushehr?

Brooks: Bushehr is obviously part of Iranian nuclear cooperation.

NPR: Are we trying to have a cessation of construction at the site of the first reactor that Russia is building or only attempting to place a freeze on future, expanded activities?

Brooks: It is the view of the United States that Bushehr is a bad idea, and the Russians should withdraw. We are in a discussion with the Russians about where we're trying to go, and if it that sounds imprecise, it is as precise as I intend to be.

NPR: I see our time has run out. Thank you for speaking with the *Nonproliferation Review*.