

Canada

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Peacefully sheltered in Canada's Rocky Mountain foothills, Kananaskis seemed far distant from the menace of terrorism or nuclear calamity. But the G-8 summit of 2002 marked a potentially important advance in cooperative threat reduction (CTR) in Russia—and signaled a dramatic expansion in the scale of Canada's own CTR engagement.¹

In truth, the setting was fitting. Canadian participation in CTR with Russia, Ukraine, and the other former Soviet states has been framed from the start in a succession of G-7/8 pronouncements and arrangements. Multilateralism has remained since 1992 the constant and prevailing characteristic of Canadian contributions to cooperative threat reduction. Taking Canada's turn in the G-8 chair for 2002, Prime Minister Jean Chrétien was practicing customary Canadian brokerage diplomacy as he and his officials struggled to assemble a complex G-8 compromise on counterterrorism, nuclear nonproliferation, and the suppression of chemical weapons.

After months of hard bargaining (and a last-hour meeting between Presidents George W. Bush and Vladimir Putin), the Kananaskis summit finally proclaimed agreement in the "G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction." It was an extraordinary accord, not least in the explicitly detailed conditions it placed on Russia's new and full inclusion in the G-8 itself. And it carried threefold significance for Canadian CTR policy. First, it suggested future Canadian CTR priorities—namely, the four "priority concerns" specified by the G-8 leaders' statement: destruction of chemical weapons; dismantlement of

1. Primary sources for this chapter consist chiefly of Canadian government documents and interviews in August and September 2002 with Canadian government officials. (Published scholarly material on Canadian CTR activity is remarkably sparse and fragmentary.) Officials spoke on the usual condition of anonymity. The most significant of the open Canadian government documentation can be found online. Various G-8 documents are accessible at <<http://www.G8.gc.ca/>>. Material on Canadian arms control, nuclear safety, and MOX policies is available from the Department of Foreign Affairs and International Trade at <<http://www.dfait-maeci.gc.ca/nndi-agency/>>. Some scholarly commentary and documentation on G-7/8 summitry, with helpful links, can be found at <<http://www.G7.utoronto.ca/>>. The Canadian government's response to the 1998 Commons Committee report, "Canada and the Nuclear Challenge," can be found at <<http://www.dfait-maeci.gc.ca/nucchallenge/ANNEXB-e.htm>>.

decommissioned nuclear submarines; disposition of fissile materials; and employment of former weapons scientists. Second, the statement committed Canada implicitly to enlarge its CTR investment substantially. And third, the G-8 accommodation demonstrated some of the limits and opportunities of Canada's middle-power, multilateral CTR approaches.

In describing the Canadian experience in cooperative threat reduction, analyzing its origins and outcomes so far, and outlining priorities and prospects for imminent Canadian government action, two defining features emerge besides the multilateral nature of Canada's involvement. First, the Canadian financial commitment over some 10 years has been remarkably modest: C\$120.3 million (roughly U.S.\$77.6 million) for the Canadian nuclear program in Central and Eastern Europe, committed in the years 1992 to 2002, for disbursements scheduled to be completed in 2007. The second noteworthy feature of the Canadian program is that most of it—C\$97 million—has been allocated not to Russia but to Ukraine. Explanations for the size and direction of Canadian commitments are explored below, in part to emphasize the change in Canadian policy signified by the Kananaskis “partnership.”

Threat Assessments and Responses

By 1992, when G-7 leaders gathered in Munich, the compounding risks growing in post-Soviet civil and military nuclear operations were already desperately evident. At the time, Canadian officials shared the generally accepted G-7 threat assessment, and that assessment has scarcely varied since. The 1986 Chernobyl accident and its aftermath had given appalling proof of the dangers. Soviet-built facilities were decrepit and decaying; management and physical security systems were increasingly and alarmingly undependable; and stocks of fissile material (some from decommissioned nuclear arsenals) represented a mounting risk. Altogether the threats divided into three broad categories: reactor accidents; leakage of fissile (and chemical weapons) materials and equipment, leading to proliferation; and the feared brain drain of nuclear experts, simultaneously raising the risk of proliferation elsewhere while depleting management and security capacities in Russia and the Newly Independent States (NIS).

The G-7 in Munich responded with joint commitments of funds and advice, in which Canada took part from the start. Initial Canadian contributions concentrated on analyses of reactor safety, regulatory reform, and plutonium disposition. The main objectives, shared in other G-7 governments albeit with varying degrees of priority, were to enhance the security of aging reactors until they could be closed; foster the creation of competent, independent regulatory agencies in a culture focused on safety; and help Ukraine close Chernobyl safely and quickly. To those ends (and others) the G-7 in 1992 established its own nuclear safety working group, on which Canadians have taken part ever since.

With a population and economy about one-tenth the size of the United States or Europe, Canada was never likely to rank among the biggest or most influential participants negotiating and executing CTR with Russia and its nearby neighbors.

(Nor does Canada share the geographic proximity and local familiarity that shapes policy in similarly endowed Nordic countries, with which Canada frequently aligns itself.) On the other hand, Canadian attitudes and skills are informed by 50 years of vigorous nonproliferation diplomacy, a long-standing civil nuclear program, pre-1992 contributions to Chernobyl recovery—and an urgent, shared interest both in suppressing weapons of mass destruction and supporting peaceful political and economic transformation in Russia and the NIS.

These factors (and institutional/political habit) go far to explain why nearly all Canadian engagement in CTR has been conceived and conducted multilaterally. These were the approaches and techniques that promised maximum effect from the modest means at Canada's disposal—inducing others to do in combination what Canada could not hope to do alone.

But why mostly in Ukraine, instead of Russia? One reason is that closing and securing Chernobyl would itself consume enormous resources, and even before 1992, Canada had been sharing that effort. Another reason, Canadians acknowledge, was that Russians resisted interventions by nonnuclear-weapons states—no matter how benignly motivated. Redefining their own post-Soviet identity themselves through their national crises of the 1990s, Russian authorities preferred the reputational and other gratifications of dealing with the superpower in Washington, especially on questions defined as strategically sensitive. A third reason for the Ukraine focus was peculiar to Canadian domestic politics: some 1.2 million Canadians claim Ukrainian roots, and long and significant bilateral financial and political relationships have developed as a consequence. (Canada was first in the West to recognize Ukraine's post-Soviet independence.) If Russians were reluctant to accept Canadian aid in many nuclear matters, Ukrainians were more welcoming.

Program Profile and Funding History

A short summary of Canadian funding commitments to nuclear programs in Central and Eastern Europe—almost every one of them coincident with G-7/8 summits—suggests both the objectives and content of Canadian policy.

For Russia:

- 1992 (G-7 Munich summit): C\$16.3 million committed, mainly for nuclear safety and engineering assistance; regulatory cooperation; a plutonium disposition study; and contributions to a first tranche for the Nuclear Safety Account of the European Bank for Reconstruction and Development (EBRD). Implementing agencies included Atomic Energy of Canada Ltd. (AECL), a Crown corporation, and the Canadian Nuclear Safety Commission (CNSC)—formerly the Atomic Energy Control Board—Canada's nuclear regulatory agency. These project commitments are now spent. But cooperation with Russia continues—particularly at the policy level, where encouraging a safety culture in nuclear operations and regulation remains a priority.

For Ukraine:

- 1992 (G-7 Munich): C\$1.3 million, for radiation surveys and regulatory cooperation. Implementers included AECL and CNSC.
- April 1994: C\$25.0 million, of which C\$6.1 million was for Chernobyl remediation and C\$15.4 million for the Science and Technology Center in Ukraine—reemploying nuclear scientists. Implementers included Ontario Hydro, Environment Canada (a Canadian government department), and the University of Manitoba.
- July 1994 (G-7 Naples): C\$19.5 million, of which C\$12 million was for the EBRD Nuclear Safety Account and C\$7.3 million for hydro/thermo power rehabilitation. Implementers: Hydro-Quebec and Saskatchewan Power.
- June 1997 (G-7 Denver) and July 2000 (G-7 Berlin): U.S.\$33 million (about C\$51.2 million) pledged for the Chernobyl Shelter Implementation Plan (SIP) over 10 years through the EBRD. These SIP disbursements are scheduled to be completed in 2007 and are principally for securing the sarcophagus around Chernobyl Unit 4.

Thus, the funding commitment to Russia and Ukraine totals C\$113.3 million. A further C\$7 million has been committed to various smaller Canadian contributions, including reactor analyses and strengthening regulatory agencies in Lithuania, Bulgaria, Hungary, Slovakia, and the Czech Republic.

The grand total for Canadian nuclear safety commitments or pledges is C\$120.3 million, of which about 60 percent has been allocated to the EBRD's Nuclear Safety Account and its Chernobyl Shelter Implementation Plan. By 2002 the SIP allocation was one of two Canadian project commitments not yet completed; it was due to receive C\$6 million yearly until completion in 2007. The other commitment still outstanding, Canada's contribution to the Science and Technology Center in Ukraine, is to be completed in 2004–2005.

In addition, Canada announced in early 2002 a C\$5 million one-time contribution to Russia for infrastructure aspects of chemical weapons destruction. By late 2002 detailed plans for that spending were still under discussion with Russian authorities.

Testing MOX

In 1996, at the G-8 Moscow summit on nuclear safety and security, Prime Minister Chrétien announced Canadian agreement in principle to consider using U.S. and Russian weapons-grade plutonium as fuel in Canadian reactors. Since then, no part of Canada's CTR activity has aroused more intense public controversy. (In fact, Canadian public opinion on these questions has otherwise been rarely heard.) By late 2002, however, it appeared that the issue so earnestly contested in Canada might yet be rendered moot by dwindling interest in Washington and Moscow.

The logic underlying Chrétien's announcement was simple enough. Weapons-grade plutonium, drawn from dismantled U.S. and Russian warheads, would be

converted to plutonium oxide and combined with uranium oxide as fuel in Canadian Candu reactors. MOX (mixed oxide) fuel would serve to generate electricity in Canada—and Canada would thereby make a practical contribution to nuclear arms reduction and nonproliferation.

Nor was the engineering especially novel. In normal operation, some of the ordinary natural uranium fuel in the heavy-water Candu is transformed into Pu-239; about half the energy produced by regular Candu fuel is generated by plutonium. Spent fuel from MOX would resemble normal Candu spent fuel. Even though the proportion of plutonium in it would be somewhat higher than the usual 0.3 percent (but not exceeding 1 percent), the MOX process would still yield a net reduction in plutonium at the end of the fuel cycle. This reduction in volume, along with the dilution of the plutonium in other isotopes and the high radiation levels of discharged fuel bundles, would arguably make weaponizing used MOX fuel more risky, technically harder, and more costly than alternatives. All of which would mean that weapons-grade plutonium run through Canadian Candu reactors would be less attractive to proliferators—and less accessible under the safeguards that apply to all Canadian reactors.

MOX studies were under way even before the prime minister's Moscow intervention. AECL and Ontario Hydro had been working on MOX with U.S. and Russian experts since 1994, concluding by 1996 that further tests were justified. In December 1996, the U.S. Department of Energy, which had sponsored the original feasibility studies at AECL and Ontario Hydro, reaffirmed the MOX-Candu scheme as one of two possible plutonium-processing options. (The other was vitrification or ceramic immobilization.) Meanwhile, a parallel Russian-Canadian study had been launched into the potential for fabricating MOX bundles in Russia for shipment to Candu reactors; that study, conducted by AECL with Russia's MINATOM, was cofinanced by the Canadian government.

Following that Moscow summit, tests financed by the U.S. Energy Department began at AECL's research reactor at Chalk River, Ontario, with fuel bundles manufactured from Russian and U.S. plutonium. Canadian authorities have said these tests will take several years to ascertain the technical feasibility and economic viability of a commercial MOX fuel program. (There is no Canadian government subsidy intended for any long-run use of MOX.) Authorities also insist that any eventual MOX fuel program would first have to meet all federal and provincial health, safety, transport, security, and environmental requirements, including full opportunity for public consultation.

The tests have nonetheless ignited a noisy and recurrent (though it must be said, sporadic) opposition to the whole MOX project. Hostility is grounded mostly on environmental/health hazards and on doubts as to the proposal's utility as a contribution to nonproliferation or arms control. In December 1998, the Foreign Affairs Committee of the House of Commons—controlled by members of the governing Liberal Party—went so far as to recommend that the government “reject the idea of burning MOX fuel in Canada because this option is totally unfeasible . . .” This recommendation, included in a wide-ranging report on disarmament and nonproliferation, amounted to an extraordinarily explicit challenge from the government's own members of Parliament. But the government expressly and formally

refused the committee's recommendation in April 1999, repeating that MOX "is viewed internationally as a feasible option and could make a valuable contribution" to the safe disposal of weapons-grade plutonium.

In any case, the option's future may be overtaken by events. Canadian officials in late 2002 said MOX test results could be expected in 2003. But there was already a sense that interest in the Candu plan was by now declining in Moscow and Washington. The role of Canada as a trusted third party seemed less urgent than previously, insofar as U.S.-Russian relationships were improving particularly after the terrorist attacks of September 11, 2001. In addition, Russia's own capacity for processing plutonium was beginning to look more promising. Regardless of ultimate MOX test results, there was now only a receding probability that Russia would be asking for any long-term MOX commitment from Canada.

Canada's Comparative Advantage: Assets and Limitations

Even if the MOX experiment were not to lead to commercial use of weapons-grade plutonium in Canadian reactors, the episode does illustrate a significant Canadian asset in CTR collaboration: its reputation as a trustworthy and competent interlocutor in negotiation. Chrétien's intercession in 1996, with the offer to test MOX fuel, may have served in a modest way to facilitate Russian-U.S.-European agreement. National reputations are hard to measure, easy to exaggerate, and readily lost. But it is at least plausible that skilled Canadian intervention from time to time has had a productive effect in multilateral settings. (At and after the 1995 G-7 summit in Halifax, for example, Chrétien was instrumental in concluding a three-way memorandum of understanding between the G-7, European Union, and Ukraine on the closure of Chernobyl.)

Reputation in this case consists of more than diplomatic art. Canadian governments can properly claim an authentic interest, history, and competence in the realms of arms control, nuclear nonproliferation, and the technology, management, and safe regulation of civilian nuclear reactors. Canada has been an energetic adherent to the Nuclear Non-Proliferation Treaty and was first to sign the 1991 Convention on Nuclear Safety. There is, moreover, the reputational value of Canada's own domestic political, constitutional, and economic arrangements—stable, democratic, and successful. It is not a bad thing, when advising others how to govern their affairs, to show proof of efficacy.

In comparison to some other countries, Canada has also enjoyed the advantage of considerable institutional coherence and consistency. There have not been the bureaucratic-political strife and reversals common in Washington, or the instabilities of coalition politics familiar in some European capitals. In the smaller, simpler Ottawa environment, decisions are easier to reach and easier to carry out. (This is true for reasons of political culture and institutional structure, and truer still because the Liberal Party by 2002 had commanded uninterrupted parliamentary majorities since 1993.) Coherence also derives from the practiced relationships that

have matured among domestic political, legal/regulatory, and corporate entities—including electric utilities and reactor operators owned by provincial governments.

A single small qualifier here deserves mention. In 1995 the foreign affairs minister of the day (André Ouellet) removed project-execution responsibility for all economic and technical cooperation in Central and Eastern Europe from the Department of Foreign Affairs and International Trade (DFAIT) and placed it in the Canadian International Development Agency (CIDA). Policy formulation and diplomacy remained in DFAIT; project delivery and accountability for the results were left to CIDA. The change had two explanations. First, project delivery was and is CIDA's forte as an aid agency, not DFAIT's. The second (and unadmitted) explanation was that Ouellet was happy to reduce DFAIT's involvement in an area that was already causing dissension within the department. But it is fair to say that CIDA managers have never been wholly or unanimously comfortable with these European obligations, which did not automatically coincide with CIDA's concentration on developing countries.

An unintended effect of this arrangement (aside from periodic disagreements between CIDA and DFAIT) might have been to depress total Canadian spending on CTR in Russia and the NIS. Formally, there has been no competition between CTR commitments and Official Development Assistance allocations; the two are separate for government accounting purposes. Still, successive CIDA ministers and their senior officials would be understandably reluctant to argue for bigger spending in Europe while government spending on their own core interest—development in poor countries—was suffering repeated budget cuts. DFAIT, with other priorities and no direct hand in project operations, had not much incentive to enrich CIDA's CTR budget. In short, CTR had no dependable or powerful advocate in the yearly competition for scarce government resources—except, that is, when the prime minister himself seized the brief.

The disadvantages Canada has brought to CTR are rather obvious and easily summarized: a middle power's relatively small pool of expertise in the making of both foreign and nuclear policy; limited available financing, as a middle power in a decade of antideficit stringency; and a lack of standing, as a nonnuclear-weapons state, in dealing with Russia on subjects touching nuclear arms and remnant super-power sensitivities.

Returning once more to the resource issue, it is worth adding that scant funding is not just an operational constraint (of the kind that every government almost always faces). Canadian officials, in this and other foreign and defense policy fields, are alert to the danger that chronic discrepancies between Canadian attempts at influence and actual Canadian spending on results will expose the government to suspicions of hypocrisy. This danger itself has represented a limit on Canadian participation, since commitments and recommendations have always to be hedged within the confines of predictably deliverable resources.

Judging Outcomes

Even by the ordinarily mobile standards of foreign policy evaluation, it is exceptionally hard to assess reliably and independently the outcomes of Canada's CTR engagement. For one thing, all governments treat nuclear questions secretively—the Russian and Ukrainian governments no less than others. In addition, confusion and misinformation are inherent elements of the threat-reduction problem in Russia and the NIS. There is also the long lag between policy cause and practical effect, complicated by the usual uncertainties of diagnosing causal connections. Finally, in the Canadian case, it is impossible to distinguish national outcomes from the joint (and interacting) outcomes of all the many-sided partnerships in CTR over a decade and more.

In Ukraine—the focus of Canadian activity—Canadian officials themselves credibly describe performance as persistently difficult. Some progress has been recorded. At Chernobyl, for instance, radiation-waste treatment and storage facilities were due for completion at the end of 2003. (The reactor operation itself was closed in December 2000.) The Science and Technology Center in Ukraine has been expanding operations with the active participation of Canadians. Some regulatory reforms have been accomplished.

Overall, however, conditions in Ukraine can be seen from a Canadian perspective as disappointing and frustrating. Nuclear Safety Account projects and the Chernobyl Shelter Implementation Plan have experienced serious and continuing implementation delays on the ground. No less ominously, Ukraine has made only slow progress in developing a nuclear safety culture strong enough to make the adoption and enforcement of safety standards self-sustaining.

Much of this difficulty is ascribed to an absence of political commitment, aggravated by predatory corruption and by a chaotic turnover of ministers and senior government officials. Donor governments have intervened personally with President Leonid Kuchma for action on chronic problems; for SIP and Nuclear Safety Account projects, the EBRD has been drawn into atypical project management and crisis-resolution roles. Outcomes in Ukraine seem frustrated for the most part by Ukraine's own bad governance.

Conditions in Russia were similarly difficult from 1992 to 2000 but were looking more promising in 2002. Canadian officials had detected a sudden and significant change in Russian attitudes to nuclear safety cooperation through 2001, an improvement greatly amplified after September 11. It appeared clear that President Putin had personally resolved to enhance CTR collaboration—and to strengthen relationships with the U.S. government. A virtual impasse in Russian–G-7 nuclear cooperation was consequently overcome, and an unusually constructive dialogue opened up.

Degrees of progress had already been achieved, of course. It was generally accepted that substantive safety improvements had been made to Soviet-designed nuclear plants, and the regulatory environment was better. But serious governance troubles remained, not least in contests between MINATOM and the Russian nuclear regulator. Among the internal disputes most salient to G-7 governments was the issue of closing or extending the life of Russia's older (and least safe) reac-

tors; it was partly on this point that G-7-Russian CTR relations had reached the impasse of 1998–1999, and they were still stalled two years later.

Putin's initiative through 2001 was presumably not motivated solely by the imperatives of nuclear safety. He was plainly eager for the economic and political rewards of closer relations with G-7 leaders, especially in the United States, Europe, and Japan. (On a much smaller scale, a similar incentive had earlier operated in Lithuania and Bulgaria, where governments avid for EU membership sought to enhance their credentials by agreeing to nuclear safety reforms.) At the same time, particularly after September 11, some G-7 governments relaxed their earlier demands for Russian reactor closures. There was a spreading G-7 consensus that Russian authorities were adamant in extending reactor life spans—and that cooperation on safety would serve everyone better than leaving Russia to its own devices.

It was in this fluid diplomatic context that Canada assumed the G-7/8 chair in January 2002. And it was the diplomacy of the Kananaskis summit that decisively reshaped priorities and prospects for future Canadian participation in cooperative threat reduction.

Kananaskis and After: Priorities and Prospects for Canada

Canada's participation in cooperative threat reduction can only be understood in the dynamics of multilateral CTR negotiations and execution. This was acutely so in 2002, when Canada happened to hold the chair of the G-8 just as those eight governments were straining to define a new level of intensity in post-9/11 CTR collaboration. The challenge for Prime Minister Chrétien was to induce an accommodation of the contending interests of his guests while protecting the essentials of his own (separate and different) G-8 objectives.

President Putin arrived in Kananaskis with the evident objective of winning full and unqualified Russian privileges at the G-8 table, finally dissolving the last distinctions between G-8 and G-7. Embedded in this objective was securing a Russian place in the G-7's nuclear safety working group, set up in 1992. Russia's overarching interest was to attract G-7 investment in the political and economic transformation of Russia itself. But to accomplish this, in the aftermath of September 11, Putin had to sign Russia onto the antiterrorism campaign in ways convincing and appealing to the Bush administration. Among Putin's many problems, moreover, was a noticeable lack of enthusiastic support in much of Russia's domestic nuclear establishment.

President Bush was determined at Kananaskis to secure the G-7/8 coalition against terrorism. The United States was specifically aiming to reinforce Russia's nuclear safety (and chemical weapons) regime, particularly to prevent proliferation among terrorist organizations and terrorist-tolerant governments. The U.S. administration was therefore insisting on explicit, enforceable measures to be taken by Russia as the condition of proffered U.S.–G-7 funding for expanded CTR projects in Russia.

For his part, Chrétien's paramount objective had nothing to do with CTR or Russia. He was laboring primarily to get G-8 approval for combined action on African development—an enterprise he had spent months promoting. But under the pressure of circumstances (and of his own officials), the prime minister first needed to facilitate a U.S.-Russian agreement on nuclear and chemical weapons control—both on its own merits and to create the negotiating conditions for agreement on Africa (in which Chrétien showed markedly more interest than others in the G-8). To achieve this, Chrétien had to bring along Japanese and European leaders who had expressed their own diverse degrees of concern for Russian nuclear safety, weapons of mass destruction, and terrorism—and who themselves were coping with varied domestic political constraints.

On this issue at least, the G-8 sherpas had not been able to deliver a pre-agreement to the summit. Reaching compromise took tough bargaining at the top—among all eight leaders on the first morning at Kananaskis and in a bilateral Bush-Putin confrontation. The eight reached consensus in the end, constructed in part on Canadian suggestions. (It was said that Canadian officials helped craft the six “principles” at the heart of the G-8 “Global Partnership”.)

The G-8 agreed to raise “up to” U.S.\$20 billion for projects over 10 years, of which the United States would provide half. In exchange, Putin accepted what were blandly termed “guidelines” for cooperation—in fact, unusually detailed and specific conditions (audits, environmental standards, tax exemptions, procurement rules, and the like), combined with procedures for reviewing compliance.

Putin had also won for Russia a new equality in the G-8: membership on a reconstituted G-8 “nuclear safety and security group” and, as set out in a separate statement, full equality in the G-8 itself, complete with its own turn in the chair for 2006.

No attempt is made here to gauge precisely Canada's influence in this negotiated outcome. But in the course of presiding at the success, the Canadian government had informally and provisionally made a costly offer of its own: \$1 billion in Canadian funding to CTR over 10 years, as a contribution to the G-8 \$20 billion. (By late 2002 the Canadian commitment had still not been publicly affirmed by any minister or in any authoritative statement. It was not even perfectly certain if the “\$1 billion” should be counted in U.S. or Canadian dollars—a difference, at fluctuating 2002 exchange rates, of as much as 35 percent. It was also apparent that the Canadian offer, like the more public U.S. pledge, was contingent on the materialization of commitments from other G-8 governments. Canadian officials expected that negotiating delivery of these mutually conditional promises would take at least several months.)

In either currency, however, \$1 billion would radically enlarge the Canadian CTR involvement from the C\$120.3 million already committed to nuclear safety. In the early months after the Kananaskis summit, no priorities for new Canadian approaches had been announced (although DFAIT quickly began to increase staffing for added CTR activity). But it is likely that future Canadian activity will reflect the four listed priorities in the G-8 leaders' “Global Partnership” statement, partly because these are priorities shared by Canada and partly because in the main they fit Canadian experience and capacity. Two of the four priorities—disposition of fis-

sile materials and employment of nuclear scientists—would be familiar policy objectives for Canada. A third, destruction of chemical weapons, had been addressed in an earlier C\$5 million Canadian commitment to Russia. Only the handling of decommissioned nuclear submarines would introduce a new activity for Canadians.

Even so, the sheer size of the spending increase would alter the Canadian program both in kind and volume. Qualitatively, it would redirect Canadian funding with far more focus on security and weapons of mass destruction; it would also expand Canadian activity in Russia significantly. Quantitatively, it would multiply annual expenditures on CTR potentially by about eightfold. As Canadian ministers and officials contemplated their program options (and other G-8 governments did the same), larger Canadian contributions looked most probable in fields of reactor security; nuclear-waste management; and regulatory/legal reform, including export and border controls.

One last point on Kananaskis, pertinent to Canadian priorities: The agreement with Russia was achieved partly because it answered national objectives that had little directly to do with nuclear safety; for Russia, it bought full membership in the G-8. Ukraine, without such a pressing extrinsic interest in accommodating Western concerns for safety in its civil nuclear program, has so far shown a less urgent impulse to reform. As the largest recipient in Canadian threat reduction engagement so far, Ukraine continues therefore to represent a complicated and unsolved policy puzzle.

Findings and Recommendations

The foregoing analysis, along with the observations of Canadians experienced in the diplomacy and delivery of CTR programs, points to five recommendations for policy and action.

1. CTR participants will need to redouble efforts to improve domestic governance in recipient countries. Experience proves that the worst impediments to nuclear safety and nonproliferation are neither financial nor technical, but lodged in misgovernment. Transparency, accountability, effectiveness, and efficiency—these are the tenets and attributes of successful governance in any context. But these qualities apply specifically to reinforcing nuclear safety, buttressing nonproliferation, and suppressing chemical weapons. Future programs will have to encourage and inform the culture and procedures of responsible government as much as the technologies and logistics of safety and nonproliferation. Promoting practices of democratic governance, including public administration and legal/regulatory approaches, falls squarely within Canadian experience and expertise and reflects priorities in other realms of Canadian foreign policy and development aid.
2. Crucial contributions to better governance, with better results, remain to be made by nongovernmental organizations, scholars, business, and others outside the formal government structures of donor and recipient countries. Targeted,

collaborative interventions by NGOs and others can be uniquely helpful where official, foreign governmental intrusion is less welcome. The collaborative experience itself can serve to build trust while dispelling suspicion. Furthermore, wider and better-informed public participation and academic engagement in these matters will foster the culture of safety—and of probity—that true security requires.

3. It might be that Russia's adhesion to shared values and enforced standards of cooperative threat reduction—as a full and equal partner—will encourage other governments to adopt similar reforms. But in any event, it must be a priority of G-8 governments to engage Ukrainians and others in urgent remedial action, both to secure nuclear facilities and management and to improve governance. The risks and potential costs of failure in these respects are insupportable.
4. G-8 partners will have to compile and systematically maintain real-time accounts of CTR projects and plans, integrating the work of governments, the G-8 apparatus, the EU, EBRD, and others. As it is, implementing the \$20 billion Kananaskis commitment could take a year simply to collate national capacities and spending proposals. The organizing challenge here is huge; nuclear facilities are vast, complicated, and enormously expensive; chemical weapons operations (not to speak of biological weapons) are invariably deeply secret. These facts argue all the more powerfully for informed, cost-saving, results-oriented coordination of CTR activities.
5. The Canadian government and Parliament should consider enacting a Canadian analogue to the U.S. Nunn-Lugar legislation: an authoritative, binding statement of the ends, means, and rationale of CTR and its importance to Canada. Preparation, debate, and passage of such an act could greatly strengthen popular support and understanding of Canada's CTR participation. Such an exercise would also improve domestic continuity and coordination of the accelerating Canadian spending program anticipated over the next 10 years. These impending spending decisions will inevitably activate bureaucratic and political interests and rivalries; a statutory framework would impose a certain discipline on decision processes and endow the decisions themselves with an added measure of legitimacy. More than that, an act of Parliament can confirm cooperative threat reduction as an enduring and important national obligation—an expression of Canadian values and an investment in Canadian security.