

**INSTITUTE FOR RESOURCE AND SECURITY STUDIES**  
27 Ellsworth Avenue, Cambridge, Massachusetts 02139, USA  
Phone: (617) 491-5177 Fax: (617) 491-6904  
Email: [info@irss-usa.org](mailto:info@irss-usa.org)  
Web: [www.irss-usa.org](http://www.irss-usa.org)

**STRENGTHENING THE INTERNATIONAL  
ATOMIC ENERGY AGENCY**

By Gordon Thompson  
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**Abstract**

The International Atomic Energy Agency (IAEA), now thirty-five years old, faces important tasks. It is needed as the implementing body for international controls to reduce the threat of nuclear proliferation, terrorism, accident, or pollution. These threats are significant and growing, in the former Soviet Union and elsewhere. However, the IAEA is not well prepared for its control mission, in large part because it has sought to simultaneously promote and control nuclear technology. Reform and strengthening of the Agency are required.

This paper sets out a case for IAEA reform, sketches some potential elements of a reform program, and discusses means for debating and implementing reforms. It concludes that reform will require shedding of the promotional function, amendments to the IAEA Statute, and action by the IAEA General Conference. Such reforms would lay the basis for an increase in the powers, resources, and responsibilities of the Agency.

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## **IRSS Working Papers**

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### **About the Author**

Gordon Thompson is the executive director of IRSS. He was educated in science and engineering in his native Australia and obtained a doctorate in applied mathematics from Oxford University in 1973. Since then, he has pursued a wide-ranging career, performing technical and policy analysis on energy, environment, sustainable development and international security issues. For the last thirteen years he has been based in the United States.

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## Introduction

*A greater use of nuclear power, alone, cannot provide a solution to restraint in CO<sub>2</sub> emissions, but it is becoming increasingly evident that expanded use of nuclear power must form a significant part of our attempt to meet growing energy needs in a safe and environmentally sustainable way.*

IAEA Director General Hans Blix, 4 June 1992<sup>1</sup>

*The problem we are addressing today is not a new one. Sixteen years ago--in my first year in Congress--I stated on the floor of the Senate that the international safeguards implemented under the Nuclear Non-Proliferation Treaty were 'inadequate to prevent diversion of nuclear materials for weapons purposes and to maintain physical security against terrorism.' . . . Unfortunately, governments are often slow to respond to new threats to their security and many proposed reforms have gone unheeded.*

US Senator John Glenn, 17 October 1991<sup>2</sup>

The International Atomic Energy Agency (IAEA) can serve important functions over the coming decades, but it requires substantial reform and new resources and powers to do so. It is now thirty-five years old, and it embodies the compromises and habits of an earlier era. If substantially reformed, it can meet pressing needs in the spheres of arms control and disarmament and environmental protection.

The most important of the needed reforms is to make the Agency a purely regulatory body, without any promotional function. Such a reform is analogous to one made in the United States in 1974, when the Atomic Energy Commission was divided into the Nuclear Regulatory Commission and the Energy Research and Development Administration (later to become the Department of Energy). Indeed, most member states have created separate organizations for the promotion and regulation of nuclear technology. In following this trend, the IAEA would become an international nuclear control agency, in some respects similar to the US Nuclear Regulatory Commission.<sup>3</sup> To be effective in this role, the Agency would need changes in its Statute, structure, mode of operation and form of financing. Its powers and resources would need to be increased.

Greater powers and resources are needed because the Agency faces major tasks that are not being adequately addressed. Nuclear disarmament by the former superpowers is creating a surplus of fissile material that should be under IAEA safeguards. The collapse

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<sup>1</sup>Speech at the UN Conference on Environment and Development, Rio de Janeiro. Text available in IAEA press release PR 92/27.

<sup>2</sup>Statement introducing a proposed Joint Resolution of Congress on measures to strengthen IAEA safeguards.

<sup>3</sup>Because it must function in the international arena, a reformed IAEA would in some respects differ from a national regulatory body.

of the Soviet Union has created an urgent need for international oversight to ensure that Soviet nuclear capabilities do not contribute to nuclear weapons proliferation. More effective safeguards are needed to restrain nuclear proliferation and terrorism worldwide, particularly in view of the growing commercial use of plutonium. Aging nuclear plants and growing radioactive waste inventories demand stringent international oversight, especially in the former Soviet Union and its satellites.

While partly acknowledging these threats and the logic of using the IAEA to address them, member states have been reluctant to provide the Agency with the necessary means. The IAEA is in a deepening financial crisis and is searching for ways to economize at precisely the time when its budget should be increasing. This is regrettable, but it must be noted that the Agency itself bears much of the responsibility for its difficult situation. Its public credibility is low, to a large extent because it pursues contradictory missions. In pursuit of its promotional mission, the IAEA has consistently downplayed the security and environmental risks associated with nuclear technology. This has inevitably undermined the Agency's effectiveness in pursuing its control mission.

Reform of the IAEA will require new thinking and bold action by the Agency itself, by governments of member states, and by interested organizations and individuals around the world. Repetition of old slogans and clinging to past habits will lead to continued stagnation, and the public interest will suffer accordingly. If consensus can be reached that the Agency's promotional functions should be shed, there is the prospect of a broad-based coalition for the revival and strengthening of the Agency. Citizens, governments, non-government organizations, and businesses around the world have widely varying opinions about the extent to which it is appropriate to use nuclear technology. Most will agree, however, on the need for effective international controls to reduce the threat of nuclear proliferation, terrorism, accident, or pollution. Opposition to such controls might come from industries and government bodies that have benefited from weak regulation in the past and that may have enjoyed undue influence on the functioning of the IAEA. Although these narrow interests are powerful, they could be overcome by a broad coalition devoted to the public interest.

A reform program of the necessary magnitude must be discussed thoroughly to ensure that its elements are both advantageous and widely supported. Thus, it is important that there be a vigorous debate about the future of the IAEA. No such debate exists, despite the Agency's shaky finances, mixed record of performance, and growing work-load. An appropriate forum to begin the debate is the General Conference, hitherto a relatively weak body. The IAEA Statute provides the General Conference with the exclusive power to make fundamental reforms, which must involve Statute amendments. By considering such amendments in a careful, deliberate manner, the General Conference could create the climate for reform discussion in many other forums, involving citizens, non-government organizations, and governments. The debate should begin very soon, so that IAEA reforms are implemented before the 1995 extension conference of the Non-Proliferation Treaty (NPT).

This paper sets out a case for reform, sketches the outline of a reform plan, and proposes means for debating and implementing reforms. It represents the first published product of an ongoing study by the Institute for Resource and Security Studies. Future publications will provide more specific suggestions about reform.

### **Current Objectives and Functions of the IAEA**

Objectives of the IAEA are set out in Article II of its Statute:

The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.<sup>4</sup>

The emphasis this language gives to the promotion of nuclear technology might come as a surprise to those who have been accustomed to thinking of the Agency as a regulatory body. It reflects the concept of "atoms for peace" that US President Eisenhower articulated in a December 1953 speech to the UN General Assembly. The idea was that nuclear technology, turned from destructive to civil purposes, would help to promote international harmony.<sup>5</sup>

When the IAEA was established in 1957, its founders assumed that nuclear expertise would remain in the hands of a few countries and that the Agency would be the main conduit for transfer of nuclear technology and materials to other countries. The Agency's regulatory function was simply to ensure that the technology and materials it provided were not used for nuclear weapons. By the mid-1960s, however, it had become clear that nuclear technology and expertise were spreading through a variety of channels and that new measures were needed to prevent their military use.<sup>6</sup>

The opportunity could then have been taken to revise the organization's mission. This was not done. Instead, a new and more subtle relationship was established between the IAEA's promotion and regulation of nuclear technology. The Agency developed measures -- the safeguards system -- designed to provide a warning if nuclear technology were used for a military purpose. IAEA technical assistance -- in a variety of areas including agriculture, health, basic research and energy supply -- was used as an inducement to persuade countries to accept safeguards. Most non-nuclear-weapon states have now done so, either as an obligation under the NPT or by other arrangement. In propagating safeguards, the Agency has had two objectives. First, in pursuit of its

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<sup>4</sup>International Atomic Energy Agency, *Statute, as amended up to 28 December 1989* (Vienna: IAEA, June 1990), p. 5.

<sup>5</sup>For background information, see Lawrence Scheinman, *The International Atomic Energy Agency and World Nuclear Order* (Washington, DC: Resources for the Future, 1987), chapter 2.

<sup>6</sup>Hans Blix, "Nuclear Non-Proliferation and Safeguards: New Challenges," *Disarmament* (a UN periodical), Volume XV, Number 2, 1992, pp 34-35.

mandate to expand the use of nuclear energy, it has sought to improve conditions for international nuclear commerce by fostering the belief that this commerce would not contribute to the proliferation of nuclear weapons.<sup>7</sup> Second, in pursuit of its regulatory mission, it has sought to improve international security by creating a system that gives warning of proliferation. Clearly, these objectives can be in conflict.

Safety and environmental protection were not high priorities in the Agency's early years but, especially since the 1986 Chernobyl accident, have come to play a larger role in its activities. Here also there are two potentially conflicting objectives, reflecting the IAEA's promotional and regulatory mandates. First, as part of its promotional function, the Agency seeks to foster the belief that safety has been achieved. Second, in pursuit of its regulatory mission, the Agency pursues safety itself.<sup>8</sup>

Overall, for better or worse, the Agency now has the three major functions shown in Table 1. Each function relates to an important international issue.

| <u>Issue</u>                 | <u>Function</u><br>(see Article III of the Statute)                          |
|------------------------------|--|
| Energy and technology        | Promotion of nuclear energy and technical assistance with nuclear technology |
| Arms control and disarmament | Inspections and other safeguards   |
| Environmental Protection     | Nuclear safety   |

To support these functions, the Agency has five major departments.<sup>10</sup> Safeguards are the sole function of the Department of Safeguards but nuclear safety is a subsidiary function of the Department of Nuclear Energy and Safety. Promotion and technical assistance are spread across that and two other departments.

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<sup>7</sup>The present IAEA Director General has described safeguards as the "sine qua non for nuclear trade." *Ibid.*, p. 34.

<sup>8</sup>The Statute includes, but does not strongly emphasize, the safety mission.

<sup>9</sup>This statement of current functions is abstracted from a more elaborate listing in Article III of the Statute. See *Statute*, pp. 5-9.

<sup>10</sup>Titles of the five departments are Technical Cooperation, Nuclear Energy and Safety, Administration, Research and Isotopes, and Safeguards.

Table 2 shows the budget allocations for the five major departments and the remainder of the Agency's activities.

|  | <u>M\$</u><br><u>(US)</u> |
|--|---------------------------|
| Technical Assistance and Co-operation              | 11.5                      |
| Nuclear Energy and Safety                          | 32.7                      |
| Research and Isotopes                              | 29.7                      |
| Safeguards   | 68.5                      |
| Policy-making Organs                               | 7.8                       |
| Executive Management and Administration            | 21.8                      |
| General Services                                   | 22.6                      |
| Unallocated Services (publishing, data processing) | <u>7.4</u>                |
| Sub-Total, Agency Programs                         | 202.0                     |
| Reimbursable Work for Others                       | <u>5.0</u>                |
| TOTAL  | 207.1                     |

Some of the technical assistance programs are conducted in association with other organizations. The International Centre for Theoretical Physics, in Trieste, is jointly operated by the IAEA and UNESCO and is primarily funded by the Italian government. IAEA work on nuclear techniques in food and agriculture is conducted jointly with the UN Food and Agriculture Organization. The International Laboratory of Marine Radioactivity, in Monaco, is run in association with the UN Environment Program.

Beyond the regular budget, member states make voluntary cash or in-kind contributions to technical assistance programs. The Agency also receives funds from the UN Development Programme (UNDP) to implement some UNDP projects. Extra-budgetary technical assistance in 1990 consumed US\$44.6 million, compared to a regular budget of US\$178.7 million in that year.<sup>12</sup>

<sup>11</sup>See General Conference document GC(XXXV)/RES/556, September 1991.

<sup>12</sup>International Atomic Energy Agency, *The Annual Report for 1990*, GC(XXXV)/953 (Austria: IAEA, July 1991).

A deepening financial crisis confronts the IAEA and will be exacerbated when non-Russian republics of the Commonwealth of Independent States (CIS) accede to the NPT. Table 3 shows the sources of the crisis.

Table 3  
Sources of the IAEA's Financial Crisis<sup>13</sup>

- Seven years of 'zero-growth' budgets under a policy imposed on the IAEA by its main contributors
- The normal expansion of safeguards responsibilities and the new responsibilities in South America, South Africa and potentially the CIS
- The indirect burden of special inspections in Iraq, which is likely to continue indefinitely, although on a reduced scale
- The Soviet Union's failure to pay its 1991 contribution (about 13 percent of the total budget)

### **The Need for Reform**

David Fischer, a former official and current friend of the IAEA, has written:

On the face of it a body which seeks both to promote and to regulate a particular technology must suffer from a built-in conflict of interest. Concern about the effects of such a conflict has led many governments to reorganize the national atomic energy authorities they created in the immediate post-war years. . . . Is it not time to do the same with the IAEA? Does not its aim of spreading nuclear technology around the world come into direct conflict with that of trying to stop the spread of nuclear weapons?<sup>14</sup>

Having posed this question, Fischer proceeded to argue that continued pursuit of the Agency's conflicting missions is both inevitable and, on balance, desirable. He did offer

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<sup>13</sup>David Fischer, Ben Sanders, Lawrence Scheinman, George Bunn, *A New Nuclear Triad: The Non-proliferation of Nuclear Weapons, International Verification and the International Atomic Energy Agency*, Programme for Promoting Nuclear Non-Proliferation Study Number Three (Southampton, UK: Mountbatten Centre for International Studies, September 1992), p. 30.

<sup>14</sup>David Fischer and Paul Szasz, *Safeguarding the Atom: A Critical Appraisal*, Jozef Goldblat, ed. (London: Taylor and Francis for Stockholm International Peace Research Institute, 1985), p. 109.

some modest reform proposals, including options for separate and more specialized political control of Agency safeguards.<sup>15</sup>

Over the years, many people have reached a different conclusion, namely that the IAEA's promotional function undermines its effectiveness as a control body and should be shed. There has never been, however, a systematic, sustained effort to act on that conclusion. Without such an effort, change will not occur because of the immense inertia associated with a well-established organization. Yet, the Agency's financial crisis and its lack of readiness to meet current challenges call out for change.

Reflecting the IAEA's history and its current Statute, promotional and technical assistance activities are intertwined and spread across all of the Agency's programs except safeguards. Some of these activities are not particularly controversial in themselves, while others are the subject of intense public debate. For example, most people will agree that technical assistance in areas such as agriculture and health is useful and should continue.<sup>16</sup> This does not mean that the IAEA should provide the assistance. As set out below, there are good reasons why it should not. Agreement cannot be found on the merits of nuclear energy. Some people continue to believe that nuclear energy offers such promise to humanity that it deserves to be singled out for special promotion by an international organization. Others, once a small minority but now a substantial fraction of the affected public, believe that it is a menace that should be eliminated. Many people have views somewhere between these poles.

The range of views about the merits of particular nuclear technologies is important but is also irrelevant to debate about strengthening the IAEA. There is ample evidence that the promotional function is undermining the Agency's effectiveness. Thus, if it is conducted at all, promotion of nuclear technology should be conducted under other auspices.<sup>17</sup> Those who honestly believe that a particular nuclear technology can benefit humanity will welcome rather than oppose the strong controls that a reformed IAEA could exert. Opponents of the technology have a similar interest in such controls. These groups can find a common cause in strengthening the IAEA, while continuing elsewhere their dispute about the technology's application.

The argument will be heard that the IAEA needs to be able to offer technical assistance to induce developing nations to accept safeguards. It is certainly true that technical assistance has been used in this way. However, safeguards are now widely accepted, and there is broad understanding that they enhance the security of all nations. Similarly, there is increasing acceptance of the need for international nuclear safety regulation. There is also growing understanding that the Agency could, with suitable reforms, be an

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<sup>15</sup>*Ibid.*, pp. 111-112.

<sup>16</sup>One area that is controversial is food irradiation.

<sup>17</sup>If advocates of the promotion of nuclear energy were obliged to seek a new international home for this function, they would need to compete for attention with supporters of other energy options, such as renewable energy supply and energy efficiency. That competition, if conducted fairly, would serve the public interest.

instrument that serves the security and environmental protection needs of the entire world community rather than the interests of a few powerful nations and a particular industry. Thus, not only is technical assistance a negative influence on the Agency because of its linkage to the corrupting effects of promotion, but it would not be needed to gain acceptance of the regulatory functions of a reformed IAEA.

Indeed, the connection between technical assistance and safeguards is now an obstacle to strengthening the Agency's regulatory functions. Developing countries have become accustomed to demanding a rough parity between IAEA expenditures on safeguards and technical assistance.<sup>18</sup> The major contributors, already reluctant to increase safeguards funding, fear that approval of a larger safeguards budget would unleash demands for a corresponding increase in technical assistance. Those demands would probably be forthcoming in the absence of an IAEA reform effort, regardless of the merit of increased technical assistance, because many developing countries see the IAEA as just another instrument of a world order dominated by the industrial nations.<sup>19</sup> A reform effort that focuses the Agency entirely on its control functions, in a manner that clearly serves the public interest worldwide, could help break the connection.

The need for greater IAEA effectiveness is clear in both the safeguards and safety areas. It arises both from the Agency's conflicting objectives and from its limited resources and powers. Consider first the IAEA's performance of its safeguards mission.

The Iraqi case illustrates the weaknesses in IAEA safeguards. Prior to the 1991 Gulf War, the Agency repeatedly assured the public that Iraq was in compliance with its obligations under the NPT, despite the wide availability of information about Iraq's nuclear weapons program.<sup>20</sup> It has since emerged that the program was more advanced than was generally suspected, and the Agency has sprung into action in an attempt to restore its credibility. Under a UN Security Council mandate it has investigated the Iraqi program and destroyed key facilities and equipment. The Board of Governors has also reaffirmed the Agency's right to conduct "special inspections" on the territories of NPT parties. Other new measures include the use of intelligence from member states, environmental sampling, export reporting, design reporting, and confidence-building visits.<sup>21</sup> These are welcome moves, but there is in them a strong element of public relations, such as in the Agency's highly publicized demolition activities in Iraq. Much more is needed to support the nuclear arms control requirements of the 1990s.

Current circumstances require an IAEA safeguards capability that is both more credible and supported by greater resources and powers than in the past. Four primary needs exist in the arms control sphere. First, reductions in superpower nuclear arsenals need to

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<sup>18</sup>*A New Nuclear Triad*, p. 31.

<sup>19</sup>Developing countries have a strong case for greater technical assistance in many areas, but not in the area of nuclear technology.

<sup>20</sup>Formal written statements by the IAEA were phrased in language that accounted for the limited nature of the inspections carried out in Iraq, but the Agency encouraged the media to ignore those limitations.

<sup>21</sup>Private communication with Marvin Peterson, US Mission to the IAEA, 17 August 1992.

be supported by arrangements to control surplus fissile material, and a reformed IAEA is the obvious candidate to oversee these arrangements.<sup>22</sup> Second, the collapse of the former USSR creates a need for international oversight to ensure that the Soviet Union's vast nuclear infrastructure does not contribute to nuclear weapons proliferation, and a reformed IAEA is again the obvious overseer.<sup>23</sup> Third, national programs to reprocess spent nuclear fuel have created large amounts of plutonium that are a threat to international security and require secure storage, and a reformed IAEA is the appropriate entity to supervise that storage.<sup>24</sup> Fourth, many nations now have the capability to develop nuclear arsenals, and some of them have the motivation to do so, creating a need for stronger and more comprehensive IAEA safeguards.

If these needs are to be met, IAEA safeguards must be strengthened and supported by a larger budget. Yet, as Table 3 shows, powerful member states have resisted any increase in the Agency's total budget or safeguards budget, and the problem is made even worse by Russia's current inability to pay its dues.<sup>25</sup>

An effective international nuclear control organization would not passively accept a budget that was insufficient to carry out its duties. If the IAEA were such an organization, it would vigorously protest the situation and call for emergency measures. For example, it might formally notify the United Nations that it is unable to fulfill its safeguards responsibilities under the NPT. Similarly, it would request the greater powers that are needed to make safeguards effective. Also, it would not pretend that effective safeguards can be applied to reprocessing when numerous studies show that they cannot.<sup>26</sup> Regrettably, the Agency is not doing such things because it is shackled by its conflicting objectives and its history of compromise.

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<sup>22</sup>In a paper whose preparation was supported by the US Institute for Peace, Jack Barkenbus has argued that the IAEA should oversee a universal ban on the production of fissile material for weapons. He believes that the Agency should be substantially strengthened for this role and, to focus its attention, stripped of its promotional and technical assistance functions. See Jack N. Barkenbus, *Arms Control Verification: A Role for the International Atomic Energy Agency (IAEA)*, (Knoxville: Energy, Environment and Resources Center, University of Tennessee, April 1991).

<sup>23</sup>A recent investigation by the German government concluded that "the level of physical protection in the CIS to prevent a diversion of special nuclear material must be categorized as insufficient," and "an effective safeguards regime to detect diversion of material is practically absent." *Nucleonics Week*, 20 August 1992, p. 1.

<sup>24</sup>The IAEA is apparently beginning to recognize the security implications of reprocessing. At the Japan Atomic Industrial Forum's annual conference in April 1992, IAEA official William Dircks expressed concern about the growing stocks of plutonium. Policy options he identified to address this problem include less reprocessing or the introduction of international plutonium storage. *Nucleonics Week*, 16 April 1992, pp. 14-15. A universal ban on reprocessing, coupled with the secure international storage of existing plutonium, would be the best option in terms of international security. To be a credible overseer of such an arrangement, the IAEA would need to shed all promotional and technical assistance functions.

<sup>25</sup>The IAEA Director General has written, "Regrettably, the financing of safeguards, like the financing of so many other activities of international organizations, is today inadequate and in jeopardy." Hans Blix, p. 45.

<sup>26</sup>For example, see Marvin Miller, "Are IAEA Safeguards on Plutonium Bulk-Handling Facilities Effective?", in *NPT At The Crossroads: Issues Bearing on Extending and Strengthening the Treaty* (Washington, DC: Nuclear Control Institute, 1990).

What the IAEA is now planning is a set of economizing measures that may create the appearance of an adequate safeguards capability but could ultimately undermine international security. For example, it is considering greater use of random rather than routine inspections. The Agency is also considering a discriminatory approach to safeguards, in which nations that are suspect will receive greater attention than those that are not.<sup>27</sup> This move might be cloaked by arguments such as, for example, that small fuel cycles require more thorough safeguarding than do large fuel cycles. Arguments of this kind would not convince the targeted nations, would reverse a long-standing IAEA tradition of non-discrimination, and could eventually undermine the entire non-proliferation regime. Nations outside the favored group could conclude that the regime is, as many now suspect, intended to perpetuate their weaker status. There is, after all, evidence for that conclusion. For example, in 1991 Japan strongly pressured North Korea to forego reprocessing, while steadfastly refusing any constraints on its own reprocessing.<sup>28</sup> Further discrimination could convince some nations that their interests lie in evading the non-proliferation regime, perhaps more subtly and effectively than did Iraq.

The United States and other powerful nations have contemplated an even more discriminatory safeguards scheme. They have considered the transfer of the IAEA's safeguards function to an entity that reports to the UN Security Council.<sup>29</sup> Some non-government analysts, no doubt motivated by an acute awareness of the IAEA's deficiencies but perhaps without fully considering the implications, have argued for such a move.<sup>30</sup> The move would be unwise because the Security Council is dominated by five veto-wielding nations that also happen to be the major nuclear-weapon states, with a privileged status under the NPT. The placing of safeguards under the ultimate authority of these five states would be widely interpreted as an attempt to help assure their dominance of the world. In that political climate, it would become harder to construct the cooperative international structures that are needed to deal with security, environment, and other problems.

It is therefore fortunate that the IAEA Statute allocates significant latent power to the General Conference. This could allow the bulk of the member states to take responsibility for the Agency's future, strengthening its safeguards capability and heading off any move towards a discriminatory safeguards system. In previous decades, IAEA technical assistance was the inducement for developing and smaller nations to tolerate safeguards. Now, the long-term security interests of these nations demand that they reform the IAEA and strengthen safeguards.

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<sup>27</sup>More than half of the IAEA safeguards budget is spent in Germany and Japan, countries that some people consider as not presenting a nuclear proliferation threat. For this and other relevant information, see *Nucleonics Week*, 20 February 1992, pp 12-15.

<sup>28</sup>The two Koreas signed a bilateral agreement on 13 January 1992, prohibiting reprocessing facilities in their countries. South Korea is, however, planning to have its reprocessing done elsewhere.

<sup>29</sup>*Nucleonics Week*, 30 January 1992, pp 14-16.

<sup>30</sup>See, for example, Paul L. Leventhal, "Plugging the Leaks in Nuclear Export Controls: Why Bother?" *Orbis*, Volume 36, Number 2, Spring 1992, pp. 177-178.

On the nuclear safety front, the IAEA has hosted seminars, sponsored studies, distributed information and conducted advisory inspections. Since the Chernobyl accident, the Agency's safety work has become more visible, but it is still ineffective or, in some cases, against the public interest. The conflicting purposes of promotion and regulation have proven even more incompatible here than in the safeguards area.

An illustration of the Agency's poor performance as an objective overseer is its recent study of health effects from the Chernobyl accident.<sup>31</sup> This study did not examine the 400,000 cleanup workers or the 200,000 people evacuated from the vicinity of the reactor, nor could it have detected cancers that may take a decade or longer to appear. Nevertheless, the Agency actively encouraged the press to believe that the study showed an absence of health effects.<sup>32</sup> The study's limitations are clear to an informed reader, but the IAEA chose to gloss over them, apparently motivated by a desire to reassure the public that nuclear hazards have been exaggerated.

Other illustrations of the Agency's poor performance are its involvement in negotiations for the Basel Convention and its lobbying of the International Maritime Organization (IMO). The 1989 Basel Convention controls international movements of hazardous waste, and the IAEA actively and successfully sought to have radioactive waste excluded from its scope. Similarly, the Agency has sought to dissuade the IMO from requiring that spent nuclear fuel be carried only on ships that meet specific design criteria.<sup>33</sup> Where the IAEA has proposed safety standards -- for example, the reactor safety standards developed under the NUSS program -- these are incomplete and do not exceed the level of safety in any of the industrialized member states. In any case, the IAEA standards are purely advisory. Safety inspections of nuclear facilities under the OSART program are also advisory and the results are not published.

It is unfortunate that the IAEA is not adequately performing its safety mission. There is a need for effective international controls on nuclear safety and environmental protection. Nations now differ in their safety standards and their ability to enforce those standards, and an international regulator could set minimum standards and provide assistance with inspection and enforcement. Inventories of radioactive waste are growing and programs to dispose of the waste are stalled. Many reactors are relatively old and some are already being decommissioned, creating an additional need for oversight.<sup>34</sup> A region of particular concern is Eastern Europe and the former USSR, where difficult economic conditions and notably unsafe reactor designs have led to an unusually high risk of a reactor accident. It has also emerged that radioactive waste management practices in the region have been unusually dangerous. This situation has led to strong current interest, heavily promoted

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<sup>31</sup>The findings of this study are summarized in *The International Chernobyl Project: An Overview* (Vienna: IAEA, 1991).

<sup>32</sup>The IAEA press statement of 24 May 1991 that accompanied the study's release began, "There were no health disorders directly attributable to radiation exposure in the populations of the areas of the Soviet Union affected by the Chernobyl accident. . . ."

<sup>33</sup>*The IAEA File: 1991* (London: Greenpeace International, September 1991).

<sup>34</sup>Christopher Flavin et al., *The World Nuclear Industry Status Report: 1992* (London: Greenpeace International/Paris: WISE-Paris/Washington, DC: Worldwatch Institute, 1992).

by the German government, in an international nuclear safety convention.<sup>35</sup> The United States government has resisted the idea of a convention but, under domestic and international pressure, its resistance is declining.<sup>36</sup>

A safety convention would be useless without a strong organization to back it up. The IAEA, suitably reformed and strengthened, could be that organization. However, the reform would have to be far-reaching, because the Agency has little credibility in this area. Indeed, the US General Accounting Office has suggested that a new international nuclear safety organization may be needed because the IAEA cannot provide the necessary independence and objectivity.<sup>37</sup> On the whole, however, it seems better to retain this function within the IAEA, with substantial Agency reform. The safeguards and safety areas are closely related because they involve the same facilities and technologies. If two different organizations were responsible for inspecting these facilities, confusion and inefficiency could occur.

Overall, then, the picture emerges of an organization that faces an important and growing mission but is not prepared to respond properly. The IAEA is a prisoner of its own history, in which compromises were made and boundaries were set that are no longer appropriate. If it were created in 1992, the Agency would almost certainly be stronger and more focussed. Member states would recognize the contemporary needs and would be less bound by precedent. A vigorous reform effort is needed, to shake up the Agency and give it a chance to make a fresh start.

### **Features of a Reform Plan**

A model for some of the needed reforms may soon be provided by the Organization for the Prohibition of Chemical Weapons (OPCW). This organization will be set up if there is final agreement on a Chemical Weapons Convention (CWC). After prolonged negotiations the Conference on Disarmament has forwarded a draft text of the CWC to the UN General Assembly, and there is talk of a signing meeting in Paris in early 1993.<sup>38</sup>

The draft CWC provides that the OPCW will be based in The Hague, Netherlands. It will have three organs: the Conference of the States Parties (analogous to the IAEA General Conference); the Executive Council (analogous to the IAEA Board of Governors); and the Technical Secretariat (analogous to the IAEA Staff). Its role will be:

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<sup>35</sup>It is of interest that CPSU General Secretary Mikhail Gorbachev called for an international nuclear safety regime, with a strong IAEA role, in the weeks following the 1986 Chernobyl accident. See Lawrence Scheinman, page 275.

<sup>36</sup>The US General Accounting Office has recommended "that the Secretary of State reassess the US position against mandatory compliance with safety standards." See US General Accounting Office, *Nuclear Power Safety: Chernobyl Accident Prompted Worldwide Actions but Further Efforts Needed* (Washington, DC: US General Accounting Office, November 1991).

<sup>37</sup>See US General Accounting Office, page 38.

<sup>38</sup>The draft text is contained in Conference on Disarmament document CD/CW/WP.400/Rev. 2, 10 August 1992.

. . . to achieve the object and purpose of this Convention, to ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and cooperation among States Parties.<sup>39</sup>

Article XI of the draft CWC sets out provisions whereby parties are promised access to scientific and technical information and chemicals and equipment, consistent with other provisions of the Convention. This promise is analogous to Article IV of the NPT, which theoretically allows parties access to information, materials and technology for the peaceful use of nuclear energy.<sup>40</sup> However, by contrast with the IAEA, the OPCW is not given the function of promoting and aiding the use of chemical technology. The draft CWC's language and intergovernmental discussions about the Convention's implementation make it clear that the OPCW is to be purely a control body.

Experience will show whether the OPCW lives up to its promise. It does, however, have a more focussed and clearer control mandate than does the IAEA. In part this is because the CWC is intended to eliminate chemical weapons everywhere. By contrast, the IAEA is part of a nuclear non-proliferation regime that is fundamentally discriminatory, and the Agency is thus trapped in a system rife with contradictions and inconsistencies. Also, the OPCW is a product of the 1990s, and is not shackled by the outdated thinking of the 1950s.

One way to think about IAEA reform is in terms of incremental measures that would correct particular deficiencies. Many helpful suggestions of this kind have been made.<sup>41</sup> A potentially more productive way is to develop a broad conceptual structure within which particular reform measures can fit. That structure must account for some major ongoing trends and likely developments.

One trend is toward more multilateral agreements on a variety of international security, environment, and other matters. For example, agreement has been reached on a UN Convention on Climate Change. Although this is a framework treaty that now involves no significant binding commitments, it will become a powerful international instrument if a consensus emerges that action is required to prevent climate change. In the sphere of arms control and disarmament, the anticipated CWC is just one of many treaties that will be required to address pressing problems. Indeed, this author has proposed the introduction of a "modular" arms control framework composed of many separate treaties that, taken together, would provide for comprehensive disarmament.<sup>42</sup>

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<sup>39</sup>See Article VIII(1) of the draft CWC.

<sup>40</sup>In practice, NPT parties may be denied use of major items, as illustrated by North Korea's experience with reprocessing.

<sup>41</sup>One example is the set of IAEA reform options contained in a proposed Joint Resolution of the US Congress introduced by Senator John Glenn and Representative Pete Stark on 17 October 1991. Another example is a set of new safeguards options identified in *A New Nuclear Triad*, pp. 32-40.

<sup>42</sup>Gordon Thompson, *Peace by Piece: New Options for International Arms Control and Disarmament*, Working Paper No. 1 (Cambridge: Institute for Resource and Security Studies, January 1991).

An associated trend is toward the lessening of discrimination in international affairs. Nations with special powers and privileges will, of course, seek to retain them, but the creation of a workable world order will require that those privileges are gradually surrendered. The testing of nuclear weapons is one example. Many observers have pointed out that continued testing will threaten the future of the non-proliferation regime, and Russia and France have temporarily suspended testing. The United States will probably bow to the same logic over the next few years, and China will probably follow suit.

In light of these and other developments, the appropriate broad concept for a reformed IAEA is that of a "contractor" organization that verifies and otherwise supports particular multilateral agreements. Relevant agreements would be those in the arms control and disarmament and environmental protection spheres that involve the nuclear fuel cycle.<sup>43</sup> The Agency would not advocate any particular agreement and would play only a consultative role in the negotiation process. It would, however, be responsible for setting the standards that would govern implementation of each agreement. Having set those standards, it would determine the resources and powers it needed to fulfil its role, and would insist on receiving those resources and powers before undertaking the responsibility to oversee the agreement. If, later, member states refused to supply the necessary resources, the Agency would notify the United Nations that it could no longer exercise its responsibility. Similarly, if it concluded that a country was not complying with an important provision of an agreement, the Agency would notify the United Nations.<sup>44</sup>

To perform this role effectively, the IAEA would need to acquire a level of credibility well beyond what it now possesses and would need to shed all promotional and technical assistance functions. As the implementing organization for a growing array of multilateral agreements, the Agency would need to be insulated from debate about the general merit of particular nuclear technologies.

It would be consistent with this new role if the IAEA were to call upon the services of "subcontractor" organizations, which would operate at the regional (not national) level. The Agency would ensure that its subcontractors upheld IAEA standards, but it would not duplicate their activities. EURATOM might be adapted as a subcontractor, allowing a substantial saving in safeguards expenditures. Over the coming decades, other regional organizations might be developed to the necessary standards.

A significant part of the reformed Agency's work would be the acquisition and analysis of intelligence. This has not traditionally been part of the IAEA safeguards function, which

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<sup>43</sup>Agreements that limit nuclear terrorism could be regarded as falling either into the arms control and disarmament or the environmental protection sphere. Some multilateral nuclear arms control agreements, such as a comprehensive nuclear test ban, would probably require an entity other than the IAEA as their supporting "contractor."

<sup>44</sup>Under the present UN structure, the Security Council would act as the enforcer of the agreement. As part of the process of enforcement, the Security Council might request the Agency to perform special services, as has been done for Iraq.

was pursued through a ritualistic application of inspections to declared facilities. Common sense and the Iraqi experience show the limitations of the traditional approach, and the Agency has now begun to receive intelligence from member states. It is important, however, that the Agency not depend too heavily on intelligence from a few powerful states. A better approach would involve maximizing the use of openly available information, encouraging openness by inspected states, soliciting intelligence from many member states, and developing a strong in-house capability for analysis of intelligence.<sup>45</sup> Agency staff would need to remain familiar with nuclear science and technology developments throughout the world.<sup>46</sup>

Table 4 shows some potential elements of a comprehensive reform plan. As our study proceeds, these elements may be deleted, supplemented, or modified. The plan that is ultimately offered will be supported by detailed arguments. Suggestions regarding the study are most welcome.

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<sup>45</sup>David Fischer has outlined a 'glasnost' approach to safeguards, whereby states would be more lightly inspected if they were especially open and cooperative with the IAEA. See *A New Nuclear Triad*, pp. 32-33.

<sup>46</sup>It has been argued that IAEA staff could not remain familiar with developments in their field if the Agency's promotion and technical assistance functions were shed. Experience with national regulatory bodies shows this argument to be weak.

Table 4  
Potential Elements of an IAEA Reform Plan

- Eliminate the promotional function
- Transfer the technical assistance functions to other international agencies
- Set higher safeguards standards and insist upon powers and resources adequate to allow those standards to be upheld
- Establish procedures to determine whether particular activities (e.g., reprocessing) are consistent with safeguards objectives
- Set nuclear safety and environmental standards that are consistent with the dictates of sustainable development and insist upon powers and resources adequate to allow these standards to be upheld
- Apply safeguards and safety standards to all parties to each agreement without discrimination
- Revise the process for selecting the Board of Governors
- Establish financing mechanisms that yield income from states at a level commensurate with the burden their nuclear activities place on the Agency and with their ability to pay
- Increase transparency of operations and make the Agency more accountable to member states and more accessible to citizens

## **Debating and Implementing Reforms**

Fundamental reforms must involve Statute amendments, for both symbolic and practical reasons. Symbolically, amendments will make it clear to the Agency itself and the world at large that the reforms are substantial and permanent. Practically speaking, the mounting of a Statute amendment initiative would probably be the most effective way, perhaps the only way, to assemble a coalition strong enough to overcome the inevitable opposition to reforms.

Reform must also involve action by the General Conference. This is traditionally a weak body, and effective power has resided with the Board of Governors, which has thirty-five members and meets four times a year. About half of these members, e.g., the United States, are virtually permanent members because of their advanced nuclear capabilities.

Action by the General Conference is required for two reasons. First, significant reform will involve Statute changes, and the General Conference is the body that must make those changes. Second, the member states represented on the Board of Governors may be less inclined to support reform than the membership at large.

Although an effective reform plan will by no means be limited to Statute changes, debate about such changes will create a climate that allows a more wide-ranging debate. Also, Statute issues provide a vehicle for General Conference action that cannot be easily thwarted by powerful states. Thus, a reform effort should begin with a move to review the Statute and amend it as necessary. Article XVIII of the Statute provides the necessary mechanisms.<sup>47</sup> It contains provisions both for review and amendment, neither of which have ever been exercised for the purpose proposed here. Only minor amendments have been made, affecting the size and composition of the Board of Governors.

A general review of the Statute could have been held at the fifth annual session of the General Conference, but was not. However, a member state can now submit a motion to any session of the General Conference, requiring that a general review of the Statute be placed on the agenda of the next session.<sup>48</sup> This motion will take effect if approved by a majority of members present and voting. Some member states recently contemplated placing such a motion before the September 1992 session. They did not do so, partly

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<sup>47</sup>See *Statute*, pp 34-36.

<sup>48</sup>Article XVIII is not explicit about how a motion for a general review of the Statute would be put before a General Conference session. It does state that an amendment can be proposed by any member. However, the rules of procedure for General Conference sessions state that any member can add an item to the provisional agenda. It thus seems clear that any member can introduce a motion for a general review of the Statute. Indeed, recourse need not be sought to Article XVIII for this purpose. Under the rules of procedure, there does seem to be a possibility that the General Committee formed at the beginning of a session could remove the motion from the agenda, but that would undoubtedly be a controversial act. For details, see *Rules of Procedure of the General Conference, as amended up to 14 October 1983* (Vienna: IAEA, September 1987).

because there was limited time to gain support for the motion and partly because some other member states expressed concern about the potential disruptive effect of a wide-ranging Statute review. The concern seems misplaced because there is broad understanding of the need for effective international nuclear controls. The great majority of member states can be trusted to act in accordance with that need. The idea of a general review deserves careful consideration before the September 1993 session, although the urgency of the needed reforms suggests that consideration of specific Statute amendments should not be delayed until a general review is completed.

Statute amendments can be proposed by any member state and must be circulated by the Director General at least ninety days in advance of a session of the General Conference. They enter into force if accepted by two-thirds of the members, after consideration of observations submitted by the Board of Governors. No state is able to veto an amendment. The September 1993 session would be an appropriate occasion to begin consideration of specific amendments. The highest priority amendments would be those that alter Article II (Objectives) and Article III (Functions). To prepare for consideration of amendments in September 1993, reform-minded member states would need to soon begin the process of formulating amendments and building support for them.

If specific amendments were proposed in early 1993, a climate could be created for a broad debate on IAEA reforms, including those that do not require Statute amendment. The debate could yield specific proposals that could be acted on by the Agency Staff, by the Board of Governors, or by the General Conference. With sufficient commitment by reform-minded member states, the reform process could be under way before the end of 1993.

The reform process will necessarily take some years to implement. For example, if a decision were taken to transfer the Agency's technical assistance functions to other international agencies, the implementation of that decision would require several years. A gradual transfer would not hinder the IAEA reform process once the fundamental decision has been taken to focus the Agency entirely on its control mission. However, the Agency's direct promotional activities would need to cease more quickly after that decision is taken. They undermine the control mission both symbolically and in practical ways.

## **Conclusions**

The IAEA faces important tasks in the former Soviet Union and elsewhere. It is not well prepared to undertake those tasks, in part because of budget constraints placed upon it by its member states. Its credibility as an international control body is low, and current initiatives to restore that credibility, although welcome, are insufficient. The Agency itself bears much of the responsibility for its present difficulties, because its promotion of nuclear technology has undermined its control mission.

If reformed, the IAEA could implement international controls that reduce the threat of nuclear proliferation, terrorism, accident, or pollution. Reforms must involve the shedding of the Agency's promotional functions and the acquisition of greater powers and resources. Statute change is a necessary part of the reform process, as is action by the General Conference.

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