

Disarmament Times

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A view of the **Hope Creek nuclear power plant**, a 1059 megawatt nuclear power plant located in Lower Alloways Creek, New Jersey. Photo courtesy of the US Nuclear Regulatory Commission. (NRC File Photo)

News & Analysis | [Michael Spies](#)

Controlling the Nuclear Fuel Cycle

Nuclear power, which has experienced little growth since the 1980s, is likely to expand in coming decades, including in many countries with little or no nuclear power today. This expansion will have global ramifications as more and more countries seek the technology and materials necessary to develop their nuclear industries.

Today, a select few countries — France, Germany, the Netherlands, Russia, the United Kingdom and the United States — provide the services necessary to keep nuclear power plants running, including the preparation of uranium for use in reactors and the handling or reprocessing of spent fuel and waste recovered from reactors. While these states have the capacity to meet the demand for any foreseeable expansion in nuclear energy, for many reasons, other states will likely seek to develop the know-how to produce nuclear fuel. Motivations may run the gamut, from interest in developing a nuclear weapon, to the desire to assure needed supplies. For some countries it is a matter of national prestige; for others it is the desire to profit from selling such services and materials in the global marketplace.

The nuclear fuel cycle — which begins with the mining and processing of uranium ore; proceeds with conversion, enrichment, and fabrication of uranium into fuel for use in a reactor; and ends with reprocessing of spent fuel or disposal of waste (see accompanying chart, page 6) — has been described as the Achilles heel of the nuclear non-proliferation regime. The greatest danger from the spread of nuclear energy, highlighted by the cases of Iran and North Korea, is the proliferation of

Continued on page 6.

Opinion | [Sergio Duarte](#)

Disarmament A Look Back, A Look Ahead

It is surely about time for a renaissance of disarmament. Consider this history:

24 October 1945: The UN Charter entered into force; it contained two references to disarmament (Articles 11 and 47) and urged the “least diversion for armaments” of the world’s human and economic resources (Article 26).

24 January 1946: The General Assembly adopted its first resolution, which created a UN Atomic Energy Commission and set forth the goal of eliminating all weapons “adaptable to mass destruction” (Resolution 1 (I)).

14 December 1946: The General Assembly adopted another resolution urging the Security Council to formulate practical measures “for the general regulation and reduction of armaments and armed forces” (Resolution 41 (I)).

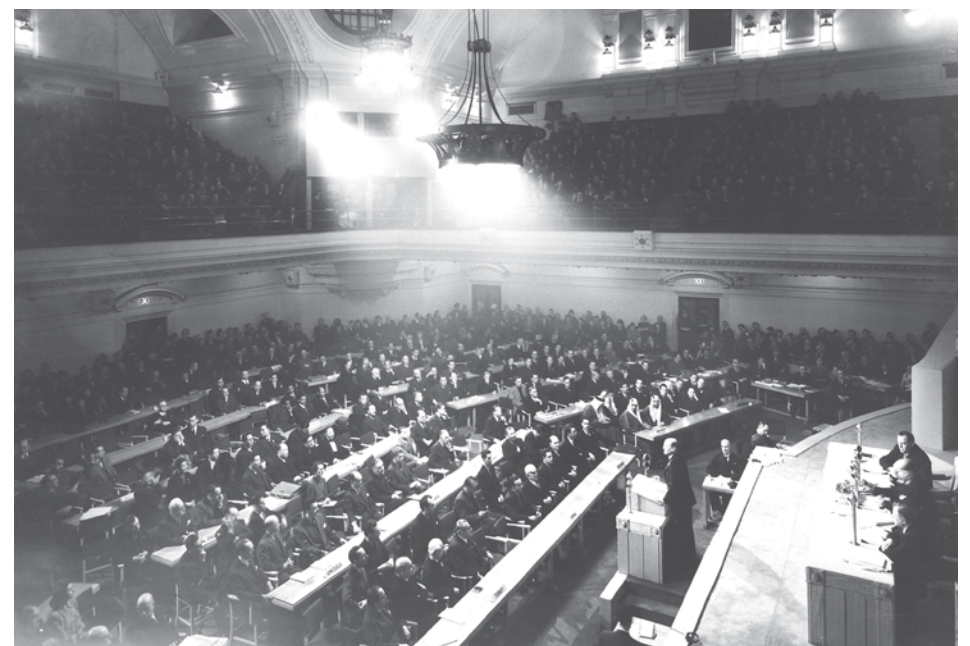
13 February 1947: The Security Council established a Commission for Conventional Armaments (Resolution 18 (1947)).

11 January 1952: The General Assembly dissolved the UN Atomic Energy Commission, recommended that the Security Council dissolve the Commission for Conventional Armaments, and adopted a resolution establishing the Disarmament Commission to draft treaties for (a) the “regulation, limitation, and balanced reduction of all armed forces and all armaments,” (b) the elimination of all weapons adaptable to mass destruction, and (c) the peaceful uses of nuclear energy (Resolution 502 (VI)).

20 November 1959: the General Assembly first identified the goal of “general and complete disarmament under effective international control” or GCD (Resolution 1378 (XIV)).

In short, the United Nations, since its creation, has sought two parallel and mutually reinforcing goals in this field: the elimination of weapons of mass destruction (biological, chemical and nuclear) and the limitation or regulation of conventional arms. The world community affirmed general and complete disarmament (GCD) as its “ultimate objective” at the General Assembly’s First Special Session on Disarmament (1978). The states parties to the nuclear Non-Proliferation Treaty (NPT) agreed at

Continued on page 5.



UN Photo/Marcel Bolomey

First Session of the United Nations General Assembly

The first session of the United Nations General Assembly opened on 10 January 1946 at Central Hall in London, United Kingdom. Clement Attlee, Prime Minister of the United Kingdom, addressing the General Assembly. (London, United Kingdom, 10 January 1946)

Inside This Issue

- 2 Implementing Security Council Resolution 1325 by *Joanne Sandler*
- 3 Resolution 1325 in its own words
- 4 Transforming Words into Action by *Rachel Mayanja*
- 5 A Look Ahead by *Sergio Duarte*
- 6 The Nuclear Fuel Cycle by *Michael Spies*
- 8 News in Brief

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Women, Peace and Security

Security Council Resolution 1325, which passed unanimously on 31 October 2000, marked the first time the United Nations Security Council specifically addressed the unique impact of war on women and the importance of women's contributions to conflict resolution, peace processes and post-conflict nation building.

The passage of the Resolution signaled a new level of awareness in the Security Council concerning gender issues, but now in its eighth year, many of the promises of the Resolution remain just that, promises. Despite the Resolution's recognition that women and children "account for the vast majority of those adversely affected by armed conflict," sexual violence continues to be used as a weapon of war against women and girls in numerous conflicts globally. Despite its recognition of "the important role of women in the prevention and resolution of conflicts and in peace-building," women are still underrepresented at peace tables and in legislating bodies. Despite its call to expand the role and contribution of women in UN peacekeeping operations, women make up only a tiny fraction of peacekeepers deployed worldwide.

Gender remains a thorny and problematic subject in our public and private

lives. Women have not achieved equality with men in any country or any arena. In their private lives, women continue to bear the majority of the burden of caring for families, much of their work unpaid and unrecognized. Women face violence in their homes in many forms, including honor killings, bride burnings and genital mutilation. Millions of women still die in childbirth each year. In their public lives, women's wages lag. Almost nowhere do women form a critical mass in government or business.

The words have been said over and over: *Women's rights are human rights! Equality now! Women hold up half the sky.* Slogans may be a beginning, but they are never an end. And for women living in the midst of conflict, words are mostly useless unless they are backed by action.

Women's potential to bring about change, to bring peace to places of war,



UN Photo/Martine Perret

Educating Women before the Election in the DRC

Women of Mongwalu listen to a United Nations pre-election presentation by a Political Affairs Officer with the United Nations Organization Mission in the Democratic Republic of the Congo (MONUC) on good governance ahead of the second round of presidential and provincial elections in Bunia, Ituri, Democratic Republic of the Congo (DRC) (27 October 2006).

to bring stability to places of upheaval, is tremendous, but largely untapped, as **Joanne Sandler**, the ad interim executive director of UNIFEM, and **Rachel Mayanja**, the Secretary-General's Special Advisor on Gender Issues, point out in the accompanying articles on Security Council Resolution 1325. Ms. Mayanja notes: Resolution 1325 has "a unique importance and authority; it has entered into public consciousness as only a few resolutions ever have." It is becoming, Ms. Mayanja asserts, "the centerpiece of a global movement reflecting a growing awareness of the importance of enhancing women's role in conflict prevention and resolution."

But the challenges that remain at every level are tremendous. And perhaps none is more intractable or more dam-

aging than sexual violence perpetrated against women by armed forces, and increasingly, as Ms. Sandler notes, by ordinary citizens. Yet such violence is still not recognized and treated as a threat to peace and security. As a result, writes Ms. Sandler, "measures related to security that might prevent such violence are not taken."

It is imperative that we all, women and men, in our public and private lives, understand the consequences of action and inaction regarding women, peace and security. It is imperative that we press our governments to act in ways that empower women, and it is imperative that we not wait for governments but where possible begin bringing about change on our own.

The Editor

News & Analysis | [Joanne Sandler](#)

Implementing Security Council Resolution 1325

United Nations Security Council Resolution 1325 was historic in recognizing the impact of war on women and the vital role women play in peacebuilding and reconstruction.

It provides a comprehensive political framework that makes women and gender equality relevant to negotiating peace agreements, planning peace-keeping operations, and reconstructing war-torn societies. It makes the pursuit of gender equality relevant to every area of the Security Council's work, from peacekeeping and mediation, to monitoring elections, to reforming the security sector. But implementation has lagged in many areas, as seen in the continued absence of women from peace negotiations and their marginalization in post-conflict recovery efforts. In the nearly eight years since its adoption, however, the harshest evidence of weak implementation can be seen in the increasing use of sexual violence as a method of warfare. Until such violence is recognized as a national and

international security threat, Resolution 1325 will never achieve full implementation.

Preventing Sexual Violence

The protection of women from sexual violence in conflict situations is a basic requirement of human security. Reports of rape, sexual slavery and forced pregnancy in conflict and post-conflict settings — in the **Democratic Republic of Congo, Haiti, Kenya, Sudan,** and **Timor-Leste** — show the widespread use of sexual violence as a tactic of warfare. It rips families apart and prevents communities from recovering, undermining chances for building sustainable peace and respect for the rule of law. If it is not prevented and perpetrators are not punished, such violence can become the norm even for ordinary citizens, threatening to prolong conflict.

The use of sexual violence in times of war is by no means a new phenomenon. Its widespread use in the 1990s in the conflicts in the former **Yugoslavia** and elsewhere brought the matter to broader public attention. As a result, sexual violence has been recognized as

a war crime, a crime against humanity, a form of torture, and in some cases, genocide. But recognition alone has not been an effective deterrent. There are increasing reports that in addition to being perpetrated by the armed forces of governments and rebel militias, sexual violence is becoming socially normalized in some contexts, taken up as a routine practice by ordinary citizens. It is still not seen as a threat to peace and security by the Security Council and other international security actors, however, and therefore does not elicit the same type of prevention response as do some other forms of violence against civilians.

Standard measures of conflict intensity — based largely on the number of battle-related deaths per year — do not record the off-battlefield tortures represented by organized rape, and the ensuing destruction of family, community and the spirit of women and children. This lack of recognition has serious consequences. If sexual violence is not seen as a security matter, measures related to security that might prevent such violence are not taken. The ensuing humanitarian responses ultimately can do little more

than patch up the small number of survivors who seek help. Women who are affected by such violence remain invisible and uncounted victims of war.

Reforming the Security Sector

If this is to change, one important challenge in strengthening implementation of Security Council Resolution 1325 is to bring about gender-sensitive reform of the security sector — those organizations that are authorized or able to use force or the threat of force to protect a state and its civilians. In all conflict areas where UNIFEM has worked, we have seen women's willingness to take risks — reaching across ethnic and religious boundaries to bring communities together. But we cannot rely simply on the bravery of women; systems must be in place. In **Rwanda**, for example, after police said they could not protect women as they lacked vehicles for rapid response, the United Nations Development Fund for Women (UNIFEM) and the UN Development Program (UNDP) responded by setting up specialized gender desks in police stations and providing them with training, hotlines and motorcycles to reach women in remote

districts. In 2007, the program expanded its work to the Rwanda Defence Forces (the country's national army), training 2,293 military officers, including 598 deployed in a peace mission in Darfur, and currently provisions are being made for the police to investigate cases of gender-based violence that implicate members of the RDF, which until now has not been possible.

In 2007, the government of **India** deployed an all-female police unit to the peacekeeping mission in **Liberia**. This served as a role model, and as a result, the number of female applicants to the fledgling Liberian national police force more than tripled. With Liberia as its model, the Security Council could aid security sector reform by encouraging greater support for women's participation in the police and military and encourage countries contributing to peacekeeping troops to send more female police.

Ensuring Women's Participation

The second major challenge in implementing 1325 is ensuring women's participation in peace processes. Resolution 1325 was visionary and forward looking in recognizing women's real and potential roles in conflict prevention and peace-building. Yet nearly eight years after its passage, women's contribution to conflict prevention, dialogue and mediation is neither recognized nor sought after.

A major reason for this is that women are seen primarily as victims, rarely as agents, in waging either war or peace. In many if not most conflicts, women are engaged in both processes — as providers of food and support to combatants, and often as combatants themselves, on the one hand, and in caring for communities and reaching across religious and ethnic boundaries to rebuild lines of connection, communication and trust, on the other. This makes it critical to engage women fully in all aspects of peace-building, including mediation, confidence-building and negotiations.

Time and again we have seen that women, even those who are members of belligerent parties, are willing to bridge divides in the interests of ending violence. Usually this occurs as a temporary agreement to jump start the peace process and enable women to reach a unified position to take part in peace talks. In many cases, however, it sets in motion a process of building connections and engaging a broad and more diverse group in public decision-making, which is not only key to lasting peace, but lies at the heart of democratic governance.

We saw this clearly in **South Africa**, where women were fully engaged in the struggle against apartheid and took a strong leadership role during the post-apartheid transition. A coalition of women's groups advocated for and ultimately brought about a more democratic process for constitutional and legislative reform. Their insistence on a participatory approach required the government to seek civil society input on proposed policies, leading to the expansion of the definition and scope of security and allowing the population to articulate its concerns in a national dialogue on security sector reform.

In **Somalia**, women presented themselves as a "sixth clan" in an effort to participate in the peace negotiations in 1993 and again in 2000, reaching beyond clan divisions to a "vision of gender equality" relevant to women of all clans. Although the negotiated agreements did not last, the experience enabled women to come together across clan lines again when a new round of negotiations began in 2002. As a result of their unity, women ultimately assisted in the creation of a National Charter that guaranteed women 25 seats in the 245-member Transitional National Assembly.

Elsewhere too, UNIFEM's experience has shown that women are bridging divides in post-conflict societies to involve broad sectors of the public and lay the foundation for more inclusive governance. In **Afghanistan**, among the 500 representatives to the constitutional drafting committee, 102 were women of various languages, ethnicities and political affiliations. Overcoming many obstacles, their persistence led to a guarantee of women's equality in the final draft of the new constitution, including a quota for women in the lower house of parliament.

In **Bougainville**, in a long-running separatist struggle with Papua New Guinea, women returned from peace talks to their communities and were reportedly the **only** leaders to initiate a public information campaign to make widely known the terms of the peace accord and the steps agreed to implement it. More recently, in **Kosovo**, at the time of the official negotiations in Vienna, the Women's Peace Coalition brought together women's networks on both sides to agree on an action plan to build dialogue across all ethnic groups and support human rights for all people.

Implementing Security Council Resolution 1325

For women to be able to fulfil their potential — as builders of a sustainable peace and creators of more just and inclusive societies — it is important that UN Member States and the UN system as a whole renew our determination to strengthen the implementation of Security Council Resolution 1325. Once again — as in bringing the Resolution before the Council in 2000 — the consistent advocacy and actions of women's rights activists and networks is essential.

Article 1 of the UN Charter states as its purpose "to take collective measures for the prevention and removal of threats to peace." Yet debate continues about whether strengthening action on Resolution 1325 is an effective means to address threats to peace. The risk that post-conflict societies will slip back into violence — for failure to engage important stakeholders in building sustainable peace — should impel stronger action to implement Resolution 1325 at all levels.

What this will take, however, is a determination to enable women to play a more high-profile role as world leaders and peace-makers everywhere, building a global commitment to peace, not just in relation to armed conflict but also in disputes over economic rights and opportunities and the denial of legitimate identity and voice to different popula-

tions that nurtures extremism and non-state violence. To begin with, women everywhere must raise a cry of outrage about the tolerance of sexual violence as a method of warfare. Implementing Resolution 1325 means ending the use of such violence, prosecuting its perpetrators, and above all, putting women at the heart of all peace-building and recovery processes, helping to ensure that violent conflict is a thing of the past.

Joanne Sandler is the ad interim executive director of UNIFEM.

“Resolution 1325 is primarily about how to make this world safe for women’s and girls’ equal participation in matters of peace and security. Determined action to eradicate gender based violence will be required to enable achievement of these goals. Impunity for perpetrators and insufficient response to the needs of survivors are morally reprehensible and unacceptable. Sexual violence in conflict, particularly rape, should be named for what it is: not a private act or the unfortunate misbehavior of a renegade soldier, but aggression, torture, war crime and genocide.”

Rachel Mayanja, United Nations Assistant Secretary-General Statement at the Security Council Open Debate on Women, Peace and Security New York, 23 October 2007

Resolution 1325 In Its Own Words

Urges Member States to ensure increased representation of women at all levels of decision-making

Encourages the Secretary-General to appoint more women as special representatives and envoys

Further urges the Secretary-General to seek to expand the role and contribution of women in United Nations field-based operations

Requests the Secretary-General to provide to Member States training guidelines and materials on the protection, rights and the particular needs of women, as well as on the importance of involving women in all peacekeeping and peace-building operations

Calls on all actors involved, when negotiating and implementing peace agreements, to adopt a gender perspective

Calls upon all parties to armed conflict to respect fully international law applicable to the rights and protection of women and girls

Calls on all parties to armed conflict to take special measures to protect women and girls from gender-based violence

Emphasizes the responsibility of all States to put an end to impunity and to prosecute those responsible for genocide, crimes against humanity, and war crimes including those relating to sexual and other violence against women and girls

Encourages all those involved in the planning for disarmament, demobilization and reintegration to consider the different needs of female and male ex-combatants

The full text of the Resolution is available at www.un.org/Docs/sc/unsc_resolutions00.htm.



UN Photo/Marie Frechon

Congolese Women Rejoice after Signing of Peace Accord in Goma
Women representative of the local civil society rejoice at the signing of the peace accord between the representatives of the rebel movements and the government of the Democratic Republic of the Congo to end fighting in the east of the country (23 January 2008).

Transforming Words into Action

Security Council Resolution 1325

At the 2005 World Summit, heads of state and government acknowledged the inextricable link between development, peace and security and the essential role of gender equality to advance development, peace and security.

One of the greatest challenges facing the United Nations in these areas is turning policies into practice. In gender equality and the empowerment of women, we are witnessing a serious gap between global policy commitments and the implementation of those commitments. Yet policy commitments alone have no impact on the every day life of women; action is required.

There is a growing body of evidence that bringing women to the peace table enriches the process, improves the quality of agreements reached and increases the chances of successful implementation. Involving women in post-conflict governance reduces the likelihood of a return to war. Reconstruction also works best when it involves women in all phases. In **Rwanda**, for example, which has the highest number of female parliamentarians in the world, post-conflict reconstruction was focused on rebuilding homes on lands to which female heads of household now had titles, providing livelihood for women and shelter for those orphaned by the genocide.

However, stories abound about women and girls who face an appalling level of insecurity and violence during armed conflict or peace. Their bodies are increasingly used as a battleground and their rights are trampled. Moreover, women who are thus victimized continue to face a massive deficit of justice. Violators often commit their crimes with impunity, which encourages them to persist.

Security Council Resolution 1325

In its Resolution 1325 (2000), the Security Council called for action to address these challenges. The Resolution has fundamentally changed the image of women, from exclusively victims of war to active participants as peacemakers, peace-builders and negotiators, and created a political framework that makes women — and a gender perspective — relevant to all peace, post conflict and humanitarian actions.

This gives the Resolution a unique importance; it has entered into public consciousness as only a few resolutions ever have. It is increasingly becoming the centerpiece of a global movement reflecting a growing awareness of the importance of enhancing women's role in conflict prevention and resolution.

Accomplishments at the National Level

Governments bear the primary responsibility for the implementation of the Resolution, and great deal has been accomplished at the national level during the seven years since the Resolution's adoption. There have been undoubted gains in many of areas, including gender



UN Photo/Martine Perret

Women Work on UN Project

Women carry water bottles on their heads on the way to a project funded by the United Nations and other donor partners to rebuild vital roads in Oecussi, Timor-Leste (9 October 2007).

mainstreaming in peace mandates and operations, awareness of the importance of gender, greater focus on the rule of law, gender equality training, work on codes of conduct, and support for greater participation of women in nation-building, including elections and governance.

Many governments, working with the UN, have supported greater participation of women in electoral processes and in nation-building as a whole. In **Afghanistan**, for example, women held 20 percent of seats in the Loya Jirgas while in **Rwanda**, women won nearly 49 percent of seats in the Chamber of Deputies.

Gains have been made in building the gender sensitivity of military and police personnel on gender equality issues. Women are joining peacekeeping operations in increasing numbers as part of military contingents or observers. The UN's Department of Peacekeeping Operations (DPKO) has set a target of 10 percent female representation for military and policy personnel on peacekeeping missions. As of May 2007, the percentage was only 1.92. Meeting this target depends on contributions from Member States, and few have reached this target internally. **Canada** leads with almost 22 percent of its peacekeeping forces being comprised of women; **Denmark** has 10 percent female participation; and **Norway** has close to seven percent. Recent data indicate improvements in the gender composition of peace missions from Latin America. At the end of 2007, 27 women participated in **Chile's** peace missions, a significant increase from 2005. For the same time period, **Peru** reported an increase in women's participation in the country's peace missions from less than one percent to seven percent.

The true success of Resolution 1325 will be apparent the day gender equality is a fact underlying all our development, peace and security efforts.

Action by the Security Council

The Security Council has paved the way for national implementation by focusing more on gender issues in its debates on specific conflicts and by including specific mandates regarding the status of women. It increasingly focuses on sexual and gender based violence in conflict areas. In the **Democratic Republic of Congo**, for example, where the scale and severity of sexual violence has been unacceptable, the Council, in its Resolution 1794 (2007), requested MONUC (UN Organizational Mission in the Democratic Republic of Congo) to pursue a comprehensive mission-wide strategy to strengthen prevention, protection and response to sexual violence.

United Nations System-wide Action

In support of national action and upon the request of the Security Council, UN entities have developed and updated a UN system-wide action plan for implementation of 1325. Major strides have been made in efforts to mainstream a gender perspective in areas related to peace and security. An Inter-Agency Network on Women and Gender Equality and its Task Force on Women, Peace and Security coordinate system-wide gender mainstreaming activities.

In response to complaints of sexual exploitation and abuse by UN peacekeepers and humanitarian workers, the Secretary-General issued instructions on the expected standard of conduct, followed by a zero-tolerance policy, and has taken serious actions to enforce them. Many UN agencies have developed and are issuing new and strengthened codes of conduct. The Secretary-General is determined to fully enforce the zero-tolerance instruction. Some troop-contributing Member States have also taken action. **Morocco** and **South Africa**, for example, have provided for disciplinary action against their peacekeepers if they are found guilty of sexual abuse.

Work at the Grassroots Level

But the UN cannot work alone. Civil society has and continues to support the implementation of Resolution 1325. Women at the grassroots level in countries as diverse as Afghanistan, Bosnia, Burundi, Colombia, the Democratic Republic of Congo, Iraq, Liberia, Sudan and Timor-Leste have used this Resolution to affect peacebuilding processes, post-conflict elections and the rebuilding of their societies.

The Work that Remains

We have, however, a long way to go. Presently, only a handful of governments, mostly from developed countries, have national action plans for the implementation of Resolution 1325. **Denmark**, **Norway** and **Sweden** are leading the way, with **Austria**, **Canada**, **Spain**, **Switzerland** and the **UK** completing this select group. **Iceland**, **Sierra Leone** and **Cote d'Ivoire** are developing national plans. Not all Member States are adjusting training modules for military and police personnel or altering their development aid packages to post-conflict countries. Only a few are instructing senior representatives to address gender issues.

The Office of Special Advisor on Gender Issues

To assist national governments, my Office of Special Advisor on Gender Issues and Advancement of Women started a project to raise awareness of the Resolution and mobilize governments to implement its provisions. In close collaboration with UN Regional Commissions, in particular the Economic Commission for Latin America and the Caribbean (ECLAC) and the Economic Commission for Africa (ECA), we organized the first two High-Level Policy Dialogues on the national implementation of Resolution 1325, in Santiago, Chile and Addis Ababa, Ethiopia. These dialogues proved that while each country has unique conditions, priorities and traditions, they share the goals of the Resolution.

In addition to raising awareness, these dialogues can provide opportunities for national institutional capacity building. A training course developed in cooperation with the United Nations Institute for Training and Research (UNITAR) will enable decision makers to focus on the role women can play as agents of change in peace and security and assist them in integrating that new perspective into their daily work. The training course will also provide a model for a national action plan.

Resolution 1325 does not mark the end of women's long march toward equality. It is a path leading to this equality. The true success of Resolution 1325 will be apparent the day gender equality is a fact underlying all our development, peace and security efforts.

Rachel Mayanja is Assistant Secretary-General, Special Adviser on Gender Issues and Advancement of Women at the United Nations.

Disarmament: A Look Ahead (continued from page 1)

their 2000 Review Conference that their “ultimate goal” was GCD, an aim also found in several treaties establishing nuclear-weapon-free zones.

Work toward General and Complete Disarmament

The world has made some significant progress in fulfilling some, but by no means all, of these great goals. Multilateral conventions were negotiated to prohibit biological and chemical weapons. States possessing nuclear weapons declared major reductions in deployments and their stockpiles as the Cold War faded in the late 1980s. Most states with nuclear weapons have said that they have stopped producing fissile material for weapons. The de facto moratorium on nuclear testing is continuing. Several types of nuclear-weapon delivery systems have been retired. The NPT, which was extended indefinitely in 1995, has helped to slow the rate of proliferation, and it remains the only multilateral treaty committing the nuclear-weapon states to pursue disarmament. Safeguards have been improved over the last decade, as has physical security. The world community has also devoted increased attention to issues relating to conventional armaments — including the illicit trade in small arms and light weapons, landmines, cluster munitions, other inhumane weapons, and most recently, arms trade standards.

The hasty conclusion, therefore, that the world is teetering on the verge of a total collapse of its various weapon regimes is, to say the very least, both premature and ill-advised. These treaties and their supporting regimes have actually accomplished quite a lot, especially relative to what might have been the case if they had not existed. The worst-case scenarios *with* these regimes are far better than the worst-case scenarios *without* them.

Concerns about Progress

Yet there remain deep concerns in the world today about the slow pace and limited scope of achievements in disarmament and arms control. Here are some reasons why:

Around 26,000 **nuclear weapons** reportedly remain — the exact number is unknown due to transparency limits and the lack of verification — some 62 years after the world community identified the goal of eliminating them, and some 40 years after the NPT committed each of its parties to pursue “at an early date” and “in good faith” negotiations on nuclear disarmament. There is still no sign of the infrastructure required to achieve nuclear disarmament — no operational plans, deadlines, government disarmament agencies, budgets, and detailed domestic legislation. The doctrines of nuclear deterrence not only persist, but have been adopted by new countries.

The **Biological Weapons Convention**, **Chemical Weapons Convention**, and **NPT** still fall short of universal membership. While the record of compliance with these treaties is overwhelmingly

good, certain documented cases or allegations of non-compliance have occurred, most apparently in the activities of the Democratic People’s Republic of Korea, Iraq and Libya as parties to the NPT, while the Security Council is still seeking to resolve certain nuclear concerns in Iran.

The **Comprehensive Test Ban Treaty** has not entered into force, while negotiations on a **fissile material treaty**¹ have still not begun at the Conference on Disarmament, nor have negotiations or discussions on a **nuclear weapon convention** or a multilateral treaty on **security assurances**. There is also no follow-up treaty to the **Strategic Arms Reduction Treaty** (START I)², which expires next year.

The **Anti-Ballistic Missile Treaty**³ has been abrogated, and there is no multilateral **treaty for missiles**, nor is there a treaty outlawing **space weapons**.⁴

In the field of conventional arms,

**With a dedicated commitment —
combining both priority and persistence
— from civil society and concerned
governments, the world could well witness
a renaissance of disarmament.**

difficult negotiations lie ahead in the effort to achieve, at long last, an **Arms Trade Treaty**.⁵ Efforts are continuing to limit or outlaw the use of **cluster munitions**.⁶ The difficult work of limiting the illicit trade in **small arms and light weapons** continues — including through the pursuit of new controls on illicit brokering and on ammunition stockpiles — though hindered by the resistance of some states to legal obligations. Efforts to achieve a universal ban on **landmines** are also continuing, while some states continue to produce and deploy them.

Military spending continues to rise, now reportedly above \$1.2 trillion, at a time when additional funds are needed to achieve the Millennium Development Goals.⁷

A Time to Move Ahead

This is, however, not a time for despair, but for hope, hard work, and a new appreciation of how progress in disarmament can serve the ideals and self-interests of all states. Progress in disarmament does not require any reconstruction of the fundamental norms — including those inherent in GCD, which remain quite relevant. It does not require the jettisoning or overhauling of the multilateral institutions or “machinery” of disarmament. It does, however, require a much higher level of priority for disarmament in the policies, laws, and practices of states. If we are to see a revival or ren-

naissance of disarmament, progress on this level is indispensable. Fortunately, there is not only a need for hope, but also some grounds for it.

Reasons for Hope

There is a new global debate underway on nuclear disarmament, stimulated in part by a group led by George Shultz, William Perry, Henry Kissinger and Sam Nunn. I have spoken at two of their meetings and am impressed with their serious commitment and the positive reactions they have gained worldwide. In the last two years, there has been an outpouring of new proposals and initiatives from civil society — as well as from some governments — to revitalize not just the nuclear disarmament agenda, but all of the great causes that are incorporated in the wider family of issues known as GCD. We are working on all of these issues in the UN’s new Office for Disarmament Affairs, and the Secretary-General is a strong sup-

porter of disarmament. I believe there are some fair prospects for significantly improving the “rule of law” in disarmament, even in the next year or two.

porter of disarmament.

It is indeed possible that the world may well witness the start of negotiations on a **fissile material treaty**. The **CTBT** could approach entry into force. There could be a treaty to cover **space weapons**, or at least to constrain risks of an arms race in outer space. The nuclear-weapon states might accept the UK’s recent proposal for a technical meeting on **nuclear disarmament** and this could lead to follow-up projects, perhaps even preliminary discussions on what a nuclear-weapons convention would have to contain to achieve nuclear disarmament with binding commitments, transparency, irreversibility and verification.

There could be another round of unilateral or bilateral cuts in strategic nuclear deployments — perhaps even the total nuclear arsenals — of Russia and the United States. An international instrument on **cluster munitions** could come into existence. These are just some of the advances that may be within reach. More are possible.

More are possible.

A Disarmament Renaissance?

Progress will require sustained efforts both by enlightened governments, as well as from civil society. Dag Hammarskjöld once called disarmament a “hardy perennial” at the UN. As spring arrives,

this perennial is certainly looking better than its alternatives: perpetual arms races, wasteful expenditures, the pursuit of impregnable missile defenses, preemptive wars, and nuclear deterrence. With a dedicated commitment — combining both priority and persistence — from civil society and concerned governments, the world could well witness a renaissance of disarmament. It is a great cause, and surely worth the effort.

Sergio Duarte is the United Nations High Representative for Disarmament Affairs and heads the UN Office for Disarmament Affairs.

Notes

1. See *Disarmament Times*, Summer 2007 for more information about a fissile material treaty.
2. The Strategic Arms Reduction Treaty or START I is a treaty between the United States and the USSR on the reduction and limitation of strategic offensive arms. The treaty bars signatories from deploying more than 6,000 nuclear warheads atop a total of 1,600 intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles and bombers. START resulted in the removal of about 80 percent of all strategic nuclear weapons in existence.
3. Anti-Ballistic Missile Treaty or ABM Treaty is a treaty between the US and Soviet Union limiting the anti-ballistic missile systems used in defending areas against missile-delivered nuclear weapons. Signed on 26 May 1972. The US withdrew on 13 June 2002.
4. See *Disarmament Times*, Summer 2007, for more information about space weapons.
5. See *Disarmament Times*, Summer 2007, for more information about the work toward an arms trade treaty.
6. See *Disarmament Times*, Spring 2007, for more information about the cluster bomb initiative.
7. The eight Millennium Development Goals — which range from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 — have been agreed to by all the world’s countries and leading development institutions. They focus on meeting the needs of the world’s poorest. More information is available at www.un.org/millenniumgoals/.

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Homer A. Jack founded *Disarmament Times* in 1978.

The Nuclear Fuel Cycle (continued from page 1)

technology, which can be used to make fuel for nuclear power reactors, but can also be used, with some adjustment, to produce uranium and plutonium suitable for weapons.

Both the front and back ends of the nuclear fuel cycle present the potential for proliferation. On the front end, the vast majority of the world's power reactors use uranium fuel enriched to about 3.5% U-235, (low-enriched uranium or LEU), which cannot be used as material for a bomb. However, with some adjustment, the very same facilities and equipment used to produce the LEU fuel for power reactors can produce uranium with a concentration of over 90% U-235 (high-enriched uranium or HEU), suitable for direct use in a nuclear weapon. On the back end of the fuel cycle, after spent fuel assemblies are removed from the reactor, reprocessing of spent fuel to recycle plutonium (which is produced as a by-product of power production) also presents a challenge. All plutonium separated from spent nuclear fuel is directly usable in a nuclear weapon. Thus, even safeguarded commercial-scale plutonium reprocessing plants are considered risky from a non-proliferation perspective.

Current Efforts to Control the Nuclear Fuel Cycle

Starting with the 1946 Baruch Plan, there have been numerous attempts to regulate and contain the global nuclear fuel cycle. Current efforts in large part have been reactions to the nuclear programs of Iran and North Korea, although existing proposals, which will probably take several years to come to fruition, are unlikely to have any practical bearing on these specific cases.

On 22 February 2005, an expert group convened by the International Atomic Energy Agency (IAEA) Director General released a five-step plan to move toward international control of the production, reprocessing and disposal of nuclear fuel:

The first step requires establishing adequate and reliable supplies of nuclear fuel by, for example, encouraging commercial fuel suppliers to offer long-term contracts with government-backed guarantees;

The second step involves developing international supply guarantees, such as establishment of an IAEA-administered fuel bank, from which qualified parties could make withdrawals in the event of disruptions in supply;

The third step would be voluntary conversion of existing fuel cycle facilities — all of which are presently controlled by national governments, private corporations, or multinational consortia — to multilateral control;

The fourth step is to promote multinational control of any new uranium enrichment and plutonium reprocessing facilities; and

The last step would be to develop stronger multilateral arrangements to accommodate global expansion of nuclear power, such as establishment of regional and multilateral fuel cycle facilities in lieu of national facilities.

Currently on the table are a number of proposals to assure the supply of nuclear fuel to those who need it (step one in the outline above). In addition, Russia and the United States have already begun their own much more far-reaching initiatives, which collectively deal with the full nuclear fuel cycle.

The Russian and US initiatives and the proposals put forth by other groups (which are discussed in greater detail below) differ on a number of axes. **Scope:** some deal with only the front end of the nuclear fuel cycle and others deal with the full cycle, including waste management. **Objective:** many deal narrowly with creating assurances of fuel supply to create economic disincentives for states that might otherwise seek to build indigenous facilities; others seek to extend international control to existing facilities or to construct new internationally-controlled facilities; some are premised on restricting access to nuclear fuel technology. **Method:** some seek to reinforce the existing nuclear fuel supply market through agreements; others deal with construction of physical or virtual reserves or production plants; many combine these two methods.

Existing Initiatives

Global Nuclear Energy Partnership (GNEP). Announced on 6 February 2006 by the Bush administration, an aim of this program is the development of “cradle to

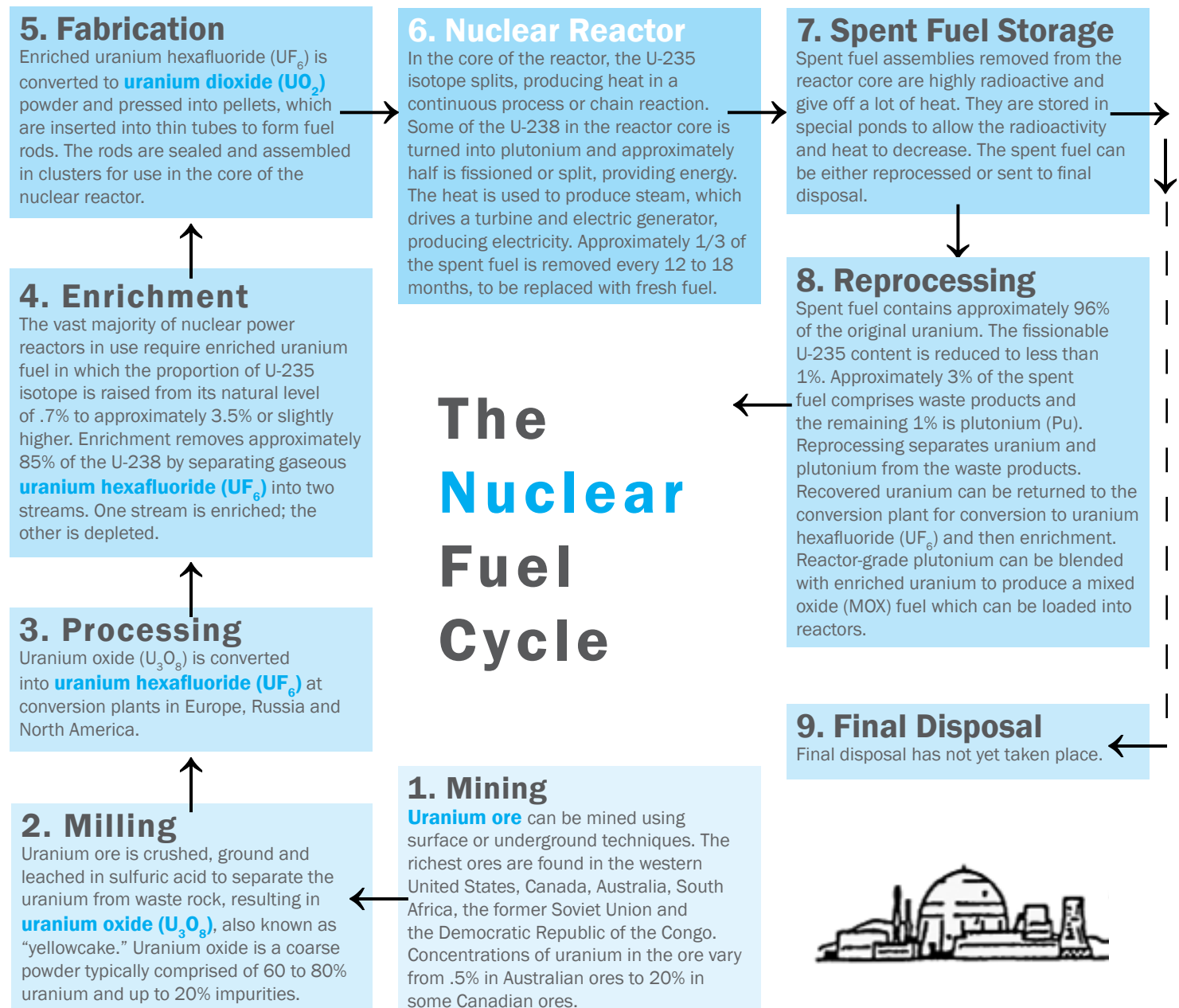
grave” nuclear fuel cycle services, with particular focus on development of the back end of the nuclear fuel cycle (the reprocessing of uranium and the management of spent fuel, plutonium and waste). The program's goal is to contain the spread of technology that could lead to proliferation.

Under GNEP the world nuclear market would be divided into supplier states — responsible for providing fuel services, including the take-back, reprocessing and final disposal of spent fuel — and client states, which would not operate their own fuel cycle facilities. Under the program, however, participating states “would not give up any rights” to develop nuclear technology for peaceful purposes, as recognized under the nuclear Non-Proliferation Treaty (NPT). It remains unclear which participating or prospective states might be considered to be supplier or client states under GNEP, or what the criteria or process will be for determining this.¹

Another goal of GNEP is to develop new, proliferation-resistant technology to deal with the back end of the nuclear fuel cycle (the reprocessing of uranium and the storage and disposal of waste, including plutonium). GNEP envisions the development and demonstration of advanced burner reactors, a new type of reactor intended to consume the highly radiotoxic elements (known as transuranic elements²) produced by light water

nuclear reactors. These elements remain highly radiotoxic for hundreds of thousands of years and some can be used in nuclear weapons. The US is also working on reprocessing techniques that do not separate pure plutonium. In 2007, the US Department of Energy awarded \$16 million dollars for research and development of these two technologies, with the goal of developing full-scale demonstration facilities. After heavy criticism from the House of Representatives, however, the US Congress, in fiscal year 2008, denied the administration funding for demonstration or commercialization of these technologies, directing the Department of Energy to instead continue research and development.

Twenty-one states have joined GNEP to date.³ Advanced nuclear fuel cycle and supplier states considering joining include Brazil, the Netherlands and Germany. But key states remain outside the initiative, including South Africa, which has publicly ruled out joining GNEP for fear it might restrict the development of its own nuclear fuel cycle program. India, Israel and Pakistan, which have been excluded from the global nuclear market as non-parties to the NPT, have also declined to join. The US attempt to resume nuclear cooperation with India — through India-specific exemptions in non-proliferation rules — might allow it to one day join GNEP or a related regime. However, absent the highly unlikely near-term sce-



nario of similar exemptions being offered to the other two non-NPT states, it is unlikely Pakistan or Israel would be eligible to join such an initiative, thus leaving them unbound by any developing rules restricting nuclear trade. The Democratic People's Republic of Korea (North Korea) and Iran will also likely remain outside the reach of GNEP.

Global Nuclear Power Infrastructure Program. Announced on 25 January 2006 by Russian President Vladimir Putin, this initiative entails the establishment of an International Uranium Enrichment Center (IUEC) in eastern Siberia. The center is scheduled to come on line in 2013 and will also handle waste management. Member states participating in the IUEC would be entitled to fuel produced by the facility but would not have access to Russia uranium enrichment technology. The long term goal is establishment of a network of regional international nuclear fuel cycle centers to provide fuel services, including uranium enrichment, under IAEA safeguards. The program could also allow for incorporation of spent fuel reprocessing and for development of fast reactors to manage spent fuel, similar to GNEP. In addition, Russia has announced it intends to establish a low-enriched uranium reserve (nuclear fuel bank) at the site.

Since 2006, Russia has pushed forward with the IUEC, which it says is open to all states without political preconditions. On 10 May 2007, Kazakhstan and Russia concluded a final agreement to establish the center. Soon after, Ukrainian President Viktor Yanukovich signed a protocol of intent to join. On 29 November 2007, the Armenian government reportedly approved a plan to join the center. Uzbekistan, however, reportedly turned down an offer to join. In addition, Russian officials have claimed that Mongolia and South Korea have expressed interest in the center.

Complementary but Problematic Approaches

Both Russian and US officials have described their respective proposals as complementary; the Russian proposal focuses on multilateral and potentially regional approaches to the front end of the nuclear fuel cycle, whereas the US proposal provides a framework for development of proliferation-resistant technologies and services related to the back end of the fuel cycle. Both proposals are premised on providing reliable supply of nuclear fuel services without transferring proliferation-sensitive technology.

Unlike other fuel cycle proposals currently on the table at the IAEA, neither of these initiatives depends on a decision from the IAEA to proceed, although both involve the IAEA to varying degrees.

Both initiatives are also potentially problematic in ways that could undermine their goal of non-proliferation. Neither addresses the issue of states that are determined to develop indigenous nuclear fuel cycles, such as Iran. While high operating costs and the availability of inexpensive uranium has limited the spread of commercial reprocessing

plants and studies have suggested that this trend will likely hold for at least 50 years, there is concern among some experts that US resumption of plutonium reprocessing under GNEP may make such technology more attractive to others, leading to proliferation. Other experts have expressed doubts about the non-proliferation benefits to be gained from the "proliferation proof" reprocessing techniques called for under GNEP, which could also give states experience applicable to separating weapons-useable plutonium. An unintended outcome of GNEP could be that it results in more states seeking to develop the nuclear fuel cycle in the short term, in order to avoid facing an expected future cutoff in the supply of related nuclear technology.

With the Russian initiative, the paucity of states joining the IUEC in part demonstrates the reluctance of states to



C. severin Uranit-Werkfoto

Centrifuges at Uranium Enrichment Plant in the Netherlands

A centrifuge cascade of the 200t facility at Urenco's Almelo uranium enrichment plant in the Netherlands. (Netherlands, 1981) Photo courtesy of the International Atomic Energy Agency.

invest in facilities from which they will not also benefit in terms of development and sharing of technology. Thus, while both programs can address some non-proliferation concerns, especially in the cases where assurance of supply might be a decisive factor in determining whether a state pursues its own fuel cycle, neither provides an airtight solution to the problems of the fuel cycle.

Other Current Proposals

The IAEA presently has more than a dozen proposals on the nuclear fuel cycle before it, including those listed below. None has yet been acted upon by the Board of Governors, which next meets in June. The following proposals are those that have been made public by IAEA member states:

Reliable Access to Nuclear Fuel (RANF).

Also referred to as the Six Nation Concept, this proposal was presented to the IAEA Board on 31 May 2006 by the governments of France, Germany, the Netherlands, Russia, the United Kingdom and the United States. The concept calls for establishment of a formal IAEA mechanism to provide reliable access to low-enriched uranium fuel in the event of

supply disruptions not related to technical or economic problems, in collaboration with nuclear suppliers. To be eligible, a client state — as opposed to a supplier state — would have to have comprehensive safeguards in place, adhere to international safety standards, and not pursue any nuclear fuel cycle activities. RANF also calls for the establishment of a reserve of low-enriched uranium fuel (see below).

Under RANF, the IAEA Board would decide when and in what cases the mechanism should be implemented. Guarantees would be triggered only in the event of a political disruption not related to proliferation issues.

Enrichment Bonds. Intended to complement the Six Nation Concept, the United Kingdom proposed this concept in September 2006. According to an explor-

International Nuclear Fuel Bank. On 19 September 2006, the Nuclear Threat Initiative (NTI),⁴ a non-governmental organization working to reduce the threat to the United States from chemical, biological and nuclear weapons, pledged \$50 million to the IAEA toward creation of an international nuclear fuel bank. Although this proposal is intended as a backup mechanism for states that "make the sovereign choice not to build indigenous nuclear fuel cycle capabilities," the NTI contribution is contingent only upon the IAEA taking action to establish a mechanism and an additional pledge of at least \$100 million from one or more IAEA member states, provided this occurs within two years. All other conditions — the structure of the mechanism, its locations, and its conditions for supply — would be up to the IAEA and its member states to decide. On 26 December 2007, the US Congress appropriated \$50 million for "the contribution of the United States to create a low-enriched uranium stockpile for an International Nuclear Fuel Bank," with no preconditions. In February 2008, the government of Norway pledged \$5 million toward this initiative. No other state has yet to come forward with a commitment.

Multilateral Enrichment Sanctuary Project.

Proposed by Germany on 19 September 2006, the core of this concept is the establishment by interested states or companies of a commercial — but competitively neutral — uranium enrichment plant to be administered by the IAEA and located on international territory to be ceded to the Agency for this purpose. The proposal does not envisage restrictions on nuclear technology beyond those in the NPT and all states would retain the right to construct their own enrichment plants. Under the proposal, the plant would be constructed as a "black box" so as to ensure no technology is transferred to the IAEA. The site of the plant would have to be acceptable to the majority of states in order to provide a credible assurance of supply. It would not, however, be located in a state that presently enriches.

Internationalization of the Nuclear Fuel Cycle.

Austria has proposed a two-track plan to place the nuclear fuel cycle under multilateral control. The first track would be increased transparency in all nuclear transactions, facilities, and development plans, through declarations to the IAEA. The second track would be to place all nuclear fuel transactions, including existing civilian enrichment and reprocessing facilities, under the auspices of a nuclear fuel bank, thus rendering national fuel cycle programs unnecessary.

Next Steps

On 15 June 2007, the IAEA Board of Governors received a report assessing the legal, technical and economic aspects of proposals on multilateralization of the nuclear fuel cycle submitted by IAEA member states over the past two years. No action is likely to be taken on the report before the IAEA Board meeting (Continued on page 8.)

atory paper circulated to the IAEA, such "bonds" could be in the form of an agreement between the supplier and recipient states and the IAEA, guaranteeing that "national enrichment providers will not be prevented from supplying the recipient state with enrichment services in the event that the guarantee is invoked." Such a guarantee would be contingent on the recipient state's compliance with international law and its non-proliferation commitments, to be assessed by the IAEA.

IAEA Standby Arrangement System for the Assurance of Nuclear Fuel Supply.

Japan proposed this mechanism on 12 September 2006 as a complement to the Six Nation Concept. The proposed mechanism would provide for delivery of high-enriched uranium fuel, as well as low-enriched uranium. Participation in the mechanism would be open to both states that do not pursue fuel cycle activities and also those that do. In addition, the proposal calls for establishment of an early warning mechanism, to be operated by the IAEA, to alert member states of imminent market failures affecting nuclear fuel supply.

News in brief

Work Stalls in the Conference on Disarmament Highlighting the sense of urgency felt by many, Secretary-General Ban Ki-moon opened the first session of the Conference on Disarmament in January with the message that “we need progress,” but work once again has largely stalled. A draft decision has been introduced which would allow work to move forward in four key areas: 1. a ban on the production of materials used to produce nuclear bombs (fissile materials), 2. nuclear disarmament, 3. prevention of an arms race in outer space, and 4. security assurances that nuclear weapons will not be used against non-nuclear weapon states. The draft decision, which is nearly identical in substance to the proposal for work put forward last year in the CD, calls for *negotiations* on a fissile material treaty, while proposing only *discussions* on the other three areas. While the CD has reached near consensus on this proposal, some members continue to stall movement, including Pakistan and China. Disputes center primarily on how a fissile material treaty would deal with existing stocks of such materials and whether and how it would be verifiable.

Russia and China have introduced a draft Treaty on the Prevention of the Placement of Weapons in Outer Space, saying their intent is to spur “research” on the topic but that negotiations will wait for “appropriate conditions.” The draft treaty defines *outer space*, *outer space objects* and *weapons in outer space* (all of which are likely to be contentious issues), but leaves open a number of questions, including how to deal with militarization of space that has already taken place and how to deal with dual-use technology that can be applied to both peaceful and military purposes. The draft treaty also bans only the *use* of space weapons but not the *development* or *testing* of such weapons. The current session of the CD concludes on 28 March, and the second session will be held 12 May-27 June 2008. For continuing coverage of the CD, go to www.reachingcriticalwill.org. See also *Disarmament Times* (Winter 2007) for a wrap up of work in the CD in 2007, available online at <http://disarm.igc.org>.

Progress on a Cluster Munitions Ban Seventy-two countries have endorsed the Wellington Declaration, calling for a treaty to prohibit cluster munitions. Representatives meeting in New Zealand at the last preparatory conference of what has become known as the Oslo Process largely rejected attempts to weaken the draft treaty as they prepare to begin negotiations on that treaty in Dublin at the end of May. Those that have signed on to the Wellington Declaration will be invited to participate in negotiations in Dublin. Efforts were made on several fronts to weaken the treaty, including by exempting certain cluster munitions from the ban and providing a transition period during which such munitions would still be allowed. In the end, however, these efforts were thwarted and such measures were kept out of the body of the treaty, instead being offered in a “compendium” which has a lesser status than the text of the treaty. The draft treaty that will be considered in Dublin contains a total prohibition on cluster munitions and obligations by states to aid victims of such weapons. For more information go to www.stopclustermunitions.org.

Shultz, Perry, Kissinger and Nunn Call for a World Free of Nuclear Weapons

“The accelerating spread of nuclear weapons, nuclear know-how and nuclear material has brought us to a nuclear tipping point,” write George Shultz, William Perry, Henry Kissinger and Sam Nunn in their second essay published in the *Wall Street Journal* (15 January 2008). But, they continue, “the steps we are taking now to address these threats are not adequate to the danger.” Noting the extraordinary “interest, momentum and growing political space that has been created to address these issues,” the writers lay out a path to disarmament with the ultimate goal of a world free of nuclear weapons. The steps they outline include increasing the warning and decision times for the launch of nuclear-armed ballistic missiles, developing cooperative multilateral ballistic-missile defense and early warning systems, securing nuclear weapons and nuclear materials everywhere to prevent terrorists from acquiring a nuclear bomb, strengthening means of monitoring compliance with the nuclear Non-Proliferation Treaty (NPT), bringing the Comprehensive Test Ban Treaty (CTBT) into effect, developing an international system to manage the risks of the nuclear fuel cycle, and completing a verifiable treaty to prevent nations from producing nuclear materials for weapons. “In some respects,” admit the writers, “the goal of a world free of nuclear weapons is like the top of a very tall mountain.” From where we are today, the top of this mountain is obscured, but, the writers assert, we must “chart a course . . . where the mountaintop becomes more visible.” The full text of the essay is available at www.nti.org.

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The Nuclear Fuel Cycle continued from page 7

on 2 June 2008. Even once agreement exists to push any proposal forward, development and construction of new facilities would likely take several years.

It is uncertain when or how the IAEA Board will act on any of these proposals. The Board customarily makes decisions by consensus, although recently on matters related to Iran’s nuclear program it has taken contested votes. Contested votes seem unlikely in the case of current proposals, however, as the proposals require the widest possible political support to succeed.

Although several proposals are quite broad (e.g. those envisioning multilateral control of the fuel cycle), the present focus will likely remain on assuring supply mechanisms. Many of the proposals described above contain common elements and several were expressly written to be complementary, so it seems likely that any mechanism emerging from the IAEA will contain elements from multiple sources. There is widespread support in principle for establishment of a low-enriched uranium reserve, as called for by NTI and the RANF concept, although the process for determining criteria for access may be divisive. Farther-reaching proposals, even those with broad support from major powers, such as the RANF concept, may experience difficulty due to the presence on the Board of states such as Brazil, Pakistan, South Africa and others that might feel these initiatives compromise their national interests.

History does not leave room for much optimism in the short term. Despite this history, however, the existence of ongoing related initiatives and the widespread support of advanced nuclear supplier states could play an important role in moving the issue forward.

A larger question exists, however, and that is whether the establishment of fuel assurance mechanisms will ultimately prevent proliferation. The final report of the Weapons of Mass Destruction Commission questioned whether it was possible to make assurance mechanisms, such as a fuel bank, sufficiently reliable to states that have to plan for changing geopolitical situations. Ultimately, such assurances may not have much bearing on states determined to develop nuclear technology.

There is also the question of whether non-nuclear weapon states will accept additional restraints on their “right” to develop nuclear energy for peaceful purposes. The NPT guarantees this right if non-nuclear states agree not to acquire nuclear weapons. The other side of this core bargain is that nuclear weapon states agree to pursue a path of nuclear disarmament. Many states, particularly those of the Non-Aligned Movement, have been sharply critical of the nuclear weapon states for failing to hold up their end of the disarmament bargain. These states are unlikely to accept mechanisms that further restrict their access to nuclear technology, absent progress on nuclear disarmament. In light of all this, where do we stand? It does seem likely one or more of the proposals to regulate the nuclear fuel cycle will come to fruition, but it also seems likely that the nuclear fuel cycle debate will continue.

Michael Spies is research associate for the Lawyers’ Committee on Nuclear Policy and editor of the *Arms Control Reporter*.

Notes

1. The Congressional Research Service notes that, informally, US policy recognizes 10 states as having an enrichment capability: Argentina, Brazil, China, France, Germany, Japan, the Netherlands, Russia, the United Kingdom and the United States. Other states that have developed or are developing an independent enrichment capability include India, Iran, Pakistan, South Africa, and possibly Israel. Nikitin et al, “Managing the Nuclear Fuel Cycle: Policy Implications of Expanding Global Access to Nuclear Power,” Congressional Research Service Report for Congress, January 30, 2008.
2. Transuranic elements are artificial elements beyond uranium in the Periodic Table of Elements, especially referring to neptunium, plutonium, americium, and curium. Transuranic elements are created in nuclear power plants. Spent nuclear fuel discharged from light water reactors contains about 94 percent uranium, one percent transuranic elements, and up to five percent fission products. Transuranic elements remain more radiotoxic than the original uranium ore for hundreds of thousands of years (as opposed to fission products, which remain radiotoxic for several centuries). Certain transuranic elements can be used in nuclear weapons.
3. The original members are China, France, Japan, Russia and the US. Joining them are Australia, Bulgaria, Canada, Ghana, Hungary, Italy, Jordan, Kazakhstan, Lithuania, Poland, Romania, Senegal, Slovenia, South Korea, Ukraine, United Kingdom. The GNEP website can be found at www.gnep.gov.
4. The Nuclear Threat Initiative is a non-governmental group working to reduce the global threats from nuclear, biological and chemical weapons. NTI is co-chaired by Ted Turner and Sam Nunn. Their website is www.nti.org.

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