

THE NEW NUCLEAR REALITY

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Introduction:

After the series of controversial nominations of known hawks to posts in the United Nations (John Bolton) and the World Bank (Paul Wolfowitz), the George W Bush administration could be set to plant its imprint on what is perhaps the most important multilateral treaty in the world - the Non-Proliferation Treaty of nuclear weapons, commonly known as the NPT.

Opened for signature in 1968, the NPT entered into force in 1970. A total of 189 countries have since joined the treaty, including the five nuclear-weapon states - the US, Russia, France, the United Kingdom and China. In 1995, the treaty members decided to extend the agreement indefinitely. Israel, India and Pakistan - with known weapons - have so far refused to sign the treaty. North Korea joined the NPT in 1985, but in January 2003 announced its intention to withdraw.

To arms-control advocates all over the world, the NPT is a great success story in that it establishes a political and legal barrier to the spread of nuclear weapons. To the "lesser" powers of the world, the NPT represents a grand bargain - the big powers promise to cut down and one day eliminate their nuclear weapons, while simultaneously working with the non-nuclear powers to give them the ability to use nuclear technology for peaceful purposes, including the production of energy. The right of the non-nuclear signatories of the NPT to use nuclear technology for peaceful purposes represents the cornerstone of the treaty, say advocates.

We will be talking in this paper about the nuclear situation in Russia, Baghdad's secret nuclear weapons program in 1991, including the US invasion of Iraq in 2003, the crises in North Korea and Iran, as well as the successful US-UK effort to force Libya to abandon its secret nuclear weapons program and the Israeli nuclear program.

IRAQ

The Middle East has long been a hotbed of tumultuous politics and border disputes. When nuclear weapons are added to the equation, the potential for deadly violence in the region skyrockets. One troublesome spot in the area was Iraq, where Saddam Hussein has attempted to build a nuclear arsenal along with other weapons of mass destruction.

In 1981, Israeli fighter-bombers attacked and destroyed a French-built nuclear research reactor in Osirak in **Iraq** that was allegedly part of Baghdad's nuclear weapons program. The UN Security Council condemned the act and noted that the attack was "in clear violation of the charter of the United Nations and the norms of international conduct". It noted further that the bombing was "a serious threat to the entire safeguards regime of the International Atomic Energy Agency, which is the foundation of the treaty on the non-proliferation of nuclear weapons." Essentially, Israel usurped the role of the IAEA in determining if a country was in violation of the NPT. However, the act did not affect the treaty a great deal because Israel was not a signatory to the NPT.

Following **Iraq's** August 1990 invasion of Kuwait and its subsequent defeat in the Gulf War, Hussein had to deal with United Nations-imposed sanctions as well as inspections of possible weapons sites by the United Nations Special Commission on Iraq (UNSCOM) and the International Atomic Energy Agency (IAEA). Experts felt that by 1990, following an intensive weapons buildup, **Iraq** was thought to be only about six months away from having a nuclear bomb.

Although the UN sanctions only permitted **Iraq** to export oil in return for food and other humanitarian goods, Saddam managed to sell oil for sizable profits in the United Arab Emirates.

Under the NPT, there are the five weapons-states, with the remaining non-weapons states. The only condition under which a non-weapon state can be denied nuclear technology is if it is found to be in violation of the NPT, like **Iraq** was in 1991. The only agency that can adjudicate on a country's violation of the NPT is the IAEA. However, the new Bush plan would appear to seek to create a new class of countries that will be denied all access to peaceful nuclear technology, even if they have not been found in violation of the NPT by the IAEA. At the end of October 1998, **Iraq** flatly refused to cooperate any further with UNSCOM, risking a military strike from the United States and Britain. **Iraq** was warned that only its full cooperation with UNSCOM inspectors could avert military action. Iraq claimed that **Iraq** had already given the UN more than enough files and had nothing left to turn over.

The Iraqi response set the stage for mid-December 1998 air strike known as Operation Desert Fox in which 280 American cruise missiles hit **Iraq** with an intensity reminiscent of the Gulf War. The military targets included six suspected nuclear weapons sites and five potential chemical or biological weapons facilities. The goal of the US-British air assault was to destroy or at least severely disrupt Saddam Hussein's ability to amass weapons of mass destruction, and following

the four-day attack, President Clinton proclaimed, "I am confident that we have achieved our mission."

The US nuclear expert Paul Leventhal described Saddam Hussein's persistent desire to acquire nuclear weapons as follows, "Saddam Hussein wants nuclear bombs...because it's his way to match Israel...Nuclear gives him status in the region that will totally eclipse any other Arab state."

There's also proof that **Iraq** sent officials to Russia to purchase nuclear materials, delivery system parts, and technology. While it's rumored that many Russian scientists have found work in Iraq, the numbers may actually be much smaller than believed.

18 months after the invasion of **Iraq**, investigators there have found no evidence of hidden centrifuges or a revived nuclear weapons program. The absence of unconventional weapons in **Iraq** is now widely seen as evidence of a profound intelligence failure, of an intelligence community blinded by "group think," false assumptions and unreliable human sources.

ISRAEL

The possession of nuclear weapons by **Israel** is seen by many countries, especially in the Arab and Islamic world, as a trigger for other countries in the region to look and obtain nuclear weapons, while the US simply does not want to discuss Israel's nuclear program in conjunction with the alleged nuclear programs of countries like Iran.

Israel has not confirmed that it has nuclear weapons and officially maintains that it will not be the first country to introduce nuclear weapons into the Middle East. Yet the existence of Israeli nuclear weapons is a "public secret" by now due to the declassification of large numbers of formerly highly classified US government documents which show that the United States by 1975 was convinced that **Israel** had nuclear weapons.

History

Israel began actively investigating the nuclear option from its earliest days. In 1949, HEMED GIMMEL a special unit of the IDF's Science Corps, began a two-year geological survey of the Negev desert with an eye toward the discovery of uranium reserves. Although no significant sources of uranium were found, recoverable amounts were located in phosphate deposits.

The program took another step forward with the creation of the Israel Atomic Energy Commission (IAEC) in 1952. Its chairman, Ernst David Bergmann, had long advocated an Israeli bomb as the best way to ensure "that we shall never again be led as lambs to the slaughter." Bergmann was also head of the Ministry

of Defense's Research and Infrastructure Division (known by its Hebrew acronym, EMET), which had taken over the HEMED research centers (HEMED GIMMEL among them, now renamed Machon 4) as part of a reorganization. Under Bergmann, the line between the IAEC and EMET blurred to the point that Machon 4 functioned essentially as the chief laboratory for the IAEC. By 1953, Machon 4 had not only perfected a process for extracting the uranium found in the Negev, but had also developed a new method of producing heavy water, providing **Israel** with an indigenous capability to produce some of the most important nuclear materials.

For reactor design and construction, **Israel** sought the assistance of France. Nuclear cooperation between the two nations dates back as far as early 1950's, when construction began on France's 40MWt heavy water reactor and a chemical reprocessing plant at Marcoule. France was a natural partner for **Israel** and both governments saw an independent nuclear option as a means by which they could maintain a degree of autonomy in the bipolar environment of the cold war.

In the fall of 1956, France agreed to provide **Israel** with an 18 MWt research reactor. However, the onset of the Suez Crisis a few weeks later changed the situation dramatically. Following Egypt's closure of the Suez Canal in July, France and Britain had agreed with **Israel** that the latter should provoke a war with Egypt to provide the European nations with the pretext to send in their troops as peacekeepers to occupy and reopen the canal zone. In the wake of the Suez Crisis, the Soviet Union made a thinly veiled threat against the three nations. This episode not only enhanced the Israeli view that an independent nuclear capability was needed to prevent reliance on potentially unreliable allies, but also led to a sense of debt among French leaders that they had failed to fulfill commitments made to a partner. French premier Guy Mollet is even quoted as saying privately that France "owed" the bomb to **Israel**.

On 3 October 1957, France and **Israel** signed a revised agreement calling for France to build a 24 MWt reactor (although the cooling systems and waste facilities were designed to handle three times that power) and, in protocols that were not committed to paper, a chemical reprocessing plant. This complex was constructed in secret, and outside the IAEA inspection regime, by French and Israeli technicians at Dimona, in the Negev desert under the leadership of Col. Manes Pratt of the IDF Ordinance Corps.

Both the scale of the project and the secrecy involved made the construction of Dimona a massive undertaking. A new intelligence agency, the Office of Science Liasons,(LEKEM) was created to provide security and intelligence for the project. At the height construction, some 1,500 Israelis some French workers were employed building Dimona. To maintain secrecy, French customs officials were told that the largest of the reactor components, such as the reactor tank, were part of a desalinization plant bound for Latin America. In addition, after buying

heavy water from Norway on the condition that it not be transferred to a third country, the French Air Force secretly flew as much as four tons of the substance to **Israel**.

Trouble arose in May 1960, when France began to pressure **Israel** to make the project public and to submit to international inspections of the site, threatening to withhold the reactor fuel unless they did. President de Gaulle was concerned that the inevitable scandal following any revelations about French assistance with the project, especially the chemical reprocessing plant, would have negative repercussions for France's international position, already on shaky ground because of its war in Algeria.

At a subsequent meeting with Ben-Gurion, de Gaulle offered to sell **Israel** fighter aircraft in exchange for stopping work on the reprocessing plant, and came away from the meeting convinced that the matter was closed. It was not. Over the next few months, **Israel** worked out a compromise. France would supply the uranium and components already placed on order and would not insist on international inspections. In return, **Israel** would assure France that they had no intention of making atomic weapons, would not reprocess any plutonium, and would reveal the existence of the reactor, which would be completed without French assistance. In reality, not much changed - French contractors finished work on the reactor and reprocessing plant, uranium fuel was delivered and the reactor went critical in 1964.

DIA Estimate For Israeli Nuclear Weapons

SECRET/NOFORN

Selected Worldwide Nuclear Weapons Inventories

Country	1999	2020
Russia*		
Strategic	8,200-10,600	1,600-2,800
Tactical	8,500-15,900	3,400-6,000
China		
ICBM	40-45	180-220**
SLBM	0-12	28-44
SRBM	100	150-200
India	10-15	50-70
Pakistan	25-35	60-80
Israel	60-80	65-85
North Korea***	1-2	10+
Iran		10-20
Iraq		10-20

* This includes warheads scheduled for dismantling.

** Assumes U.S. NMD & TMD deployment and Chinese build-up in response to U.S. deployment.

*** Assumes noncompliance with international agreements. By 2020, North Korean assets could largely be part of a united Korea.

U.S. Defense Intelligence Agency, *The Decades Ahead: 1999-2020*, July 1999, p. 38.

Excerpt from 160-page secret DIA report, first disclosed and reproduced in Rowan Scarborough, *Rumsfeld's War* (Regnery, 2004), pp. 194-223.

The United States first became aware of Dimona's existence after U-2 overflights in 1958 captured the facility's construction, but it was not identified as a nuclear site until two years later. The complex was variously explained as a textile plant, an agricultural station, and a metallurgical research facility, until David Ben-

Gurion stated in December 1960 that Dimona complex was a nuclear research center built for "peaceful purposes."

There followed two decades in which the United States, through a combination of benign neglect, erroneous analysis, and successful Israeli deception, failed to discern first the details of Israel's nuclear program. As early as 8 December 1960, the CIA issued a report outlining Dimona's implications for nuclear proliferation, and the CIA station in Tel Aviv had determined by the mid-1960s that the Israeli nuclear weapons program was an established and irreversible fact.

United States inspectors visited Dimona seven times during the 1960s, but they were unable to obtain an accurate picture of the activities carried out there, largely due to tight Israeli control over the timing and agenda of the visits. The Israelis went so far as to install false control room panels and to brick over elevators and hallways that accessed certain areas of the facility. The inspectors were able to report that there was no clear scientific research or civilian nuclear power program justifying such a large reactor - circumstantial evidence of the Israeli bomb program - but found no evidence of "weapons related activities" such as the existence of a plutonium reprocessing plant.

Although the United States government did not encourage or approve of the **Israeli** nuclear program, it also did nothing to stop it. Walworth Barbour, US ambassador to Israel from 1961-73, the bomb program's crucial years, primarily saw his job as being to insulate the President from facts which might compel him to act on the nuclear issue, allegedly saying at one point that "The President did not send me there to give him problems. He does not want to be told any bad news." After the 1967 war, Barbour even put a stop to military attachés' intelligence collection efforts around Dimona. Even when Barbour did authorize forwarding information, as he did in 1966 when embassy staff learned that **Israel** was beginning to put nuclear warheads in missiles, the message seemed to disappear into the bureaucracy and was never acted upon.

Nuclear Weapons Production

In early 1968, the CIA issued a report concluding that **Israel** had successfully started production of nuclear weapons. This estimate, however, was based on an informal conversation between Carl Duckett, head of the CIA's Office of Science and Technology, and Edward Teller, father of the hydrogen bomb. Teller said that, based on conversations with friends in the Israeli scientific and defense establishment, he had concluded that **Israel** was capable of building the bomb, and that the CIA should not wait for an Israeli test to make a final assessment because that test would never be carried out.

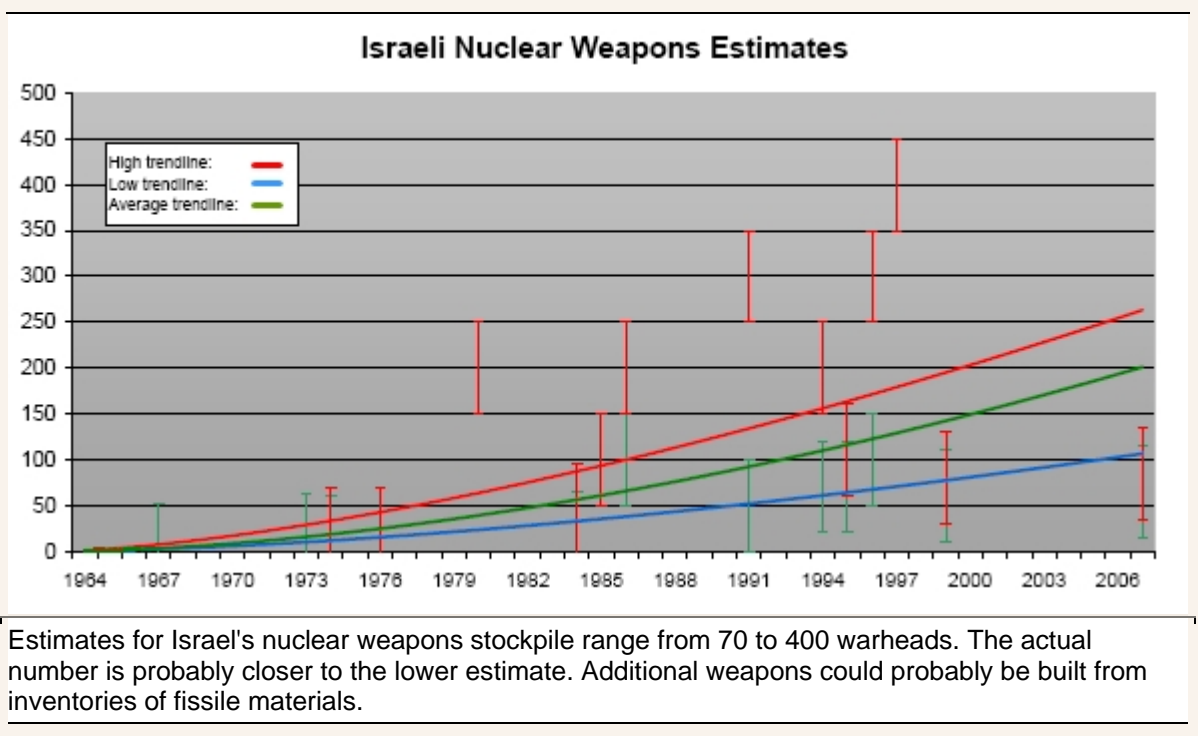
CIA estimates of the Israeli arsenal's size did not improve with time. In 1974, Duckett estimated that **Israel** had between ten and twenty nuclear weapons. The

upper bound was derived from CIA speculation regarding the number of possible Israeli targets, and not from any specific intelligence. Because this target list was presumed to be relatively static, this remained the official American estimate until the early 1980s.

The actual size and composition of **Israel's** nuclear stockpile is uncertain and the subject of many - often conflicting - estimates and reports. It is widely reported that **Israel** had two bombs in 1967, and that Prime Minister Eshkol ordered them armed in **Israel's** first nuclear alert during the Six-Day War. It is also reported that, fearing defeat in the October 1973 Yom Kippur War, the Israelis assembled 13 twenty-kiloton atomic bombs.

Israel could potentially have produced a few dozen nuclear warheads in the period 1970-1980, and is thought to have produced sufficient fissile material to build 100 to 200 warheads by the mid-1990s. In 1986 descriptions and photographs of Israeli nuclear warheads were published in the *London Sunday Times* of a purported underground bomb factory at the Dimona nuclear reactor. The photographs were taken by Mordechai Vanunu, a dismissed Israeli nuclear technician. His information led some experts to conclude that Israel had a stockpile of 100 to 200 nuclear devices at that time.

By the late 1990s the U.S. Intelligence Community estimated that **Israel** possessed between 75-130 weapons, based on production estimates. The stockpile would certainly include warheads for mobile Jericho-1 and Jericho-2 missiles, as well as bombs for Israeli aircraft, and may include other tactical nuclear weapons of various types. Some published estimates even claimed that **Israel** might have as many as 400 nuclear weapons by the late 1990s. We believe these numbers are exaggerated, and that **Israel's** nuclear weapons inventory may include less than 100 nuclear weapons. Stockpiled plutonium could be used to build additional weapons if so decided.



The Dimona nuclear reactor is the source of plutonium for Israeli nuclear weapons. The number of nuclear weapons that could have been produced by **Israel** has generally been estimated on the basis of assumptions about the power level of this reactor, combined with estimates for the number of delivery vehicles (aircraft, missiles) assigned a nuclear mission.

Information made public in 1986 by Mordechai Vanunu indicated that at that time, weapons grade plutonium was being produced at a rate of about 40 kilograms annually. If this figure corresponded with the steady-state capacity of the entire Dimona facility, analysts suggested that the reactor might have a power level of at least 150 megawatts, about twice the power level at which it was believed to be operating around 1970. To accommodate this higher power level, analysts had suggested that **Israel** had constructed an enlarged cooling system. An alternative interpretation of the information supplied by Vanunu was that the reactor's power level had remained at about 75 megawatts, and that the production rate of plutonium in the early 1980s reflected a backlog of previously generated material.

The constraints on the size of **Israel's** stockpile include several potential variables, several of which are generic to any nuclear weapons program. The Dimona reactor may have operated an average of between 200 and 300 days annually, and produced approximately 0.9 to 1.0 grams of plutonium for each thermal megawatt day. **Israel** may have used between 4 and 5 kilograms of plutonium per weapon [5 kilograms is a conservative estimate, and Vanunu reported that Israeli weapons used 4 kg].

The key variable that is specific to **Israel** is the power level of the reactor, which is reported to be at least 75 MWt and possibly as high as 200 MWt. New high-resolution satellite imagery provides important insight this matter. The imagery of the Dimona nuclear reactor was acquired by the Public Eye Project of the Federation of American Scientists from Space Imaging Corporation's IKONOS satellite. The cooling towers associated with the Dimona reactor are clearly visible and identifiable in satellite imagery. Comparison of recently acquired commercial IKONOS imagery with declassified American CORONA reconnaissance satellite imagery indicates that no new cooling towers were constructed in the years between 1971 and 2000. This strongly suggests that the reactor's power level has not been increased significantly during this period. This would suggest an annual production rate of plutonium of about 20 kilograms.

Based on plausible upper and lower bounds of the operating practices at the reactor, **Israel** could have thus produced enough plutonium for at least 100 nuclear weapons, but probably not significantly more than 200 weapons.

Some type of non-nuclear test, perhaps a zero yield or implosion test, occurred on 2 November 1966 [possibly at Al-Naqab in the Negev]. There is no evidence that **Israel** has ever carried out a nuclear test, although many observers speculated that a suspected nuclear explosion in the southern Indian Ocean in 1979 was a joint South African-Israeli test.

Other states in the Middle East, many of them strong supporters of the Palestinian cause, have expressed deep concern about the existence of an Israeli nuclear weapons programme.

They also accuse the US of operating a regional policy of double-standards, ignoring **Israel**'s weapons programmes while insisting that others - notably pre-war Iraq, Iran and Syria - are a threat to peace because of their alleged weapons of mass destruction.

The head of the International Atomic Energy Agency recently urged Israel to sign the Nuclear Non-Proliferation Treaty and surrender its nuclear weapons in order to further peace in the Middle East.

Mohamed ElBaradei told an Israeli newspaper, Haaretz, that the IAEA operated under the assumption that Israel had nuclear weapons despite the fact that it had never officially confirmed this.



Dr. Mohamed El Baradei
The head of the IAEA

He warned that **Israel's** belief that it was safer because it possessed such weapons was false, as other Middle Eastern countries felt threatened by their presence.

And he urged **Israel** and its neighbours to begin talks on halting the spread of nuclear weapons in the Middle East.

"My fear is that, without such a dialogue, there will be continued incentive for the region's countries to develop weapons of mass destruction to match the Israeli arsenal," he said.

IRAN

Bush called for a universal adherence to the so-called Additional Protocol, which is an add-on provision to the NPT wherein countries would allow tougher and more intrusive IAEA inspections. For example, under the NPT, a non-weapon state need only give the IAEA access to certain designated "nuclear" facilities. However, under the Additional Protocol, the IAEA can go anywhere and search for virtually anything, including "dual-use" items. Interestingly, Iran signed the Additional Protocol in December 2003.

However, American officials are frustrated that despite the Additional Protocol and more intrusive inspection regimes, it is still very hard to prove that a country was violating the NPT by developing nuclear weapons. The current focus of American ire is obviously **Iran**. The IAEA and many European countries agree that Iran has been acting suspiciously with regard to its NPT commitments, but unlike the US, the IAEA cannot make a determination on that until it has incontrovertible evidence of Iran's treaty violations.

There have been a series of reports from the US Central Intelligence Agency listing various allegations on **Iran's** weapons-related activities, but after the American bungling of Iraq's weapons capability, few are willing to take American claims at face value. Faced with skepticism, the US has so far been only able to offer its suspicions, but no compelling evidence. The Iranians "keep their secrets very well", noted US National Security Adviser Stephen J Hadley. The New York Times quoted a senior American official as saying that the US cannot afford to wait around for other countries to be convinced of Iran's weapons plan because by that time the Iranians might actually have a weapon or two to brandish.

Consequences of attack on Iran

The US has now granted its blessing to the European-led negotiation attempt with Iran. It has also offered carrots to Tehran, including support for Iran's admission into the World Trade Organization and perhaps an eventual restoration of diplomatic ties. However, the US has not - and many say is unlikely

- to offer the main thing that the Iranians want - a guarantee of non-attack. Many feel that things could come to a head within a matter of months.

Most diplomatic observers predict that unless the IAEA is able to obtain irrefutable proof of an **Iranian** atomic weapons program, it is unlikely to refer the matter to the UN Security Council. Even if the US muscled the IAEA into referring the **Iranian** matter to the council without solid proof, either Russia or China is likely to veto any American-led move to sanction or authorize force against **Iran**. It is to be noted that to date the IAEA and the US have been unable to prove that **Iran** has actually enriched any uranium at all. All that has been proven is that **Iran** has kept a set of uranium-enrichment facilities hidden from the IAEA for many years, though the act of uranium enrichment itself is allowed under the NPT as long as it is for peaceful purposes.

Faced with a regime change prospect, **Iranian** leaders might actually follow the lead set by North Korea - by waiting till their scientists and engineers obtain critical nuclear skills and then withdrawing from the NPT altogether and going ahead openly with weapons development. Israeli officials have been dropping public hints about **Iran** getting close to a "point of no return" in terms of nuclear weapons development. However, unlike Iraq, any attack on Iran's IAEA safeguarded nuclear facilities is unlikely without some American participation, even if Israeli forces carry out the act.

Should the US attack **Iranian** nuclear facilities without incontrovertible proof of their being involved in weapons development, it could signal a death knell for the NPT, experts warn. Sirus Naseri - a senior member of **Iran's** delegation to the IAEA, said recently, "To even imply that a nuclear-weapon state would attack [IAEA] safeguarded facilities of a non-nuclear-weapon state pokes a hole right in the heart of the Non-Proliferation Treaty."

Non-proliferation advocates have always maintained that the pillar that supports the NPT and the dream of global nuclear disarmament is the idea that nuclear weapons must be devalued. It now appears, observers note, that the actions of the nuclear powers have only increased the value of nuclear weapons, and in some cases made it imperative for countries to seek to develop them.

NORTH KOREA

Middle-tier nations like Japan and South Korea note with concern as countries in their neighborhood, such as **North Korea**, announce their nuclear weapons abilities. Experts caution that this could cause a rethink in these nations' strategic circles on the merit of abandoning nuclear weapons. Japan, for instance, has enough nuclear fuel to assemble a few dozen bombs should it choose to do so.

South Korean Foreign Minister Song Min-soon said on November 2007 the dismantlement process of **North Korea's** nuclear program has reached a junction "between smooth and bumpy roads", with little progress being made at the stage where Pyongyang must declare all its nuclear programs and stockpiles. U.S. nuclear envoy Christopher Hill, just back from **North Korea**, said there were clear differences in opinion between Washington and Pyongyang over the declaration of nuclear materials. Hill added resuming six-nation talks in 2007 would be difficult.

According to the six-party agreement on February 2007 and the Geneva Accord signed by Washington and Pyongyang, **North Korea** has until the end of this year to declare fully how much plutonium it possesses, how much of it has been used and where, and how much is left. **North Korea** must also declare by that deadline the entire truth behind its alleged uranium enrichment plan. **North Korea's** willingness to give up its nuclear weapons program is expected to be proven during the declaration stage. But apparently Pyongyang is getting cold feet.

The Chosun Shinbo newspaper, which is published in Japan and acts as a North Korean mouthpiece, that Pyongyang was willing to talk about "no longer producing any nuclear weapons and not selling them to other countries." In other words, it is not willing to declare the nuclear weapons it has already produced. **North Korea** has acknowledged it has purchased uranium enrichment equipment. The president of Pakistan testified that its uranium enrichment technology had been handed over to **North Korea**. Yet North Korea reportedly has no intention of properly declaring its uranium enrichment program. The U.S. believes **North Korea's** suspected nuclear connection with Syria should also be included in the declaration.

The participants in the six-country talks agreed to provide heavy oil to North Korea as compensation for the shutdown and dismantlement of the rusty Yongbyon nuclear facility. But now the time has come for **North Korea** to declare its nuclear materials, which would show its true willingness to scrap its nuclear ambitions, the Stalinist country is suddenly having second thoughts. Looking at **North Korea's** attitude now, it is questionable whether it will be honest in declaring the total amount of plutonium it has processed. If it does not fully declare everything, all the efforts to resolve the nuclear crisis will have been in vain.

With South Korea swept up in election fever, the Roh Moo-hyun administration, in its final days, appears to believe the North Korean nuclear crisis has been resolved and is lost in its own world, busy pledging all kinds of support to the North. And while this is happening, the North Korean nuclear crisis, which has enormous significance for the fate of South Korea, is starting to flare up again.

RUSSIA

The Soviet Union's dissolution after 1990 into a number of smaller poorly prepared republics and the serious economic difficulties they've experienced resulted in a whole new set of unexpected problems regarding nuclear weapons security. Problems that could easily have worldwide consequences. At the time, several of the republics within the Soviet Union had nuclear weapons stationed on their soil. The American administration was clearly worried about the fate of these weapons and their potential use if a conflict started between the republics.

The government in **Russia** was unable to pay much of its workforce, including nuclear scientists, soldiers guarding nuclear sites, and many others involved with nuclear materials and weapons at varying levels.

The vital centers of **Russia's** industrial-military complex have generally been hidden away in closed cities in Siberia or other distant regions far from the country's capital. There are at least ten of these secret Russian cities-home to about 750,000 people. Usually, these places have only been referred to by code names such as Chelyabinsk-65, Sverdlovsk-45, or Krasnoyarsk-26. Yet more than a decade after the Cold War ended, one of Krasnoyarsk-26's reactors is still actively manufacturing this deadly nuclear material. The nuclear reactor annually produces a half ton of plutonium, enough to create about one hundred nuclear bombs.

As economic and political conditions crumble in the former Soviet Union, the military's access to and control over nuclear weapons becomes comparably frightening. The Center for Defense Intelligence in the United States has underscored that crime, violence, and corruption flourish within the Russian military nothing that of particular concern is that fact that there are thousands of nuclear weapons in the hands of a demoralized and underpaid military. Under these circumstances it's not unreasonable to think that a desperate, hungry soldier with access to a nuclear facility might sneak a few handfuls of uranium to sell to the highest bidder. Some soldier have already been caught selling conventional (nonnuclear) weapons and ammunition to buy food or liquor. Among the most frightening realities unearthed by the report was the acknowledgement by Russian officials that two dozen thefts and attempts thefts of nuclear materials had occurred.

As early as 1991, when the Soviet Union broke up, President George Bush reached out to Russia to offer aid for political and economic reform as well as assistance in controlling and reducing their nuclear stockpiles. The U.S. Congress speedily approved programs toward this end. A giant step forward was the bipartisan Cooperative Threat Reduction (CTR) program. The program provided funds and assistance to **Russia** in corralling nuclear weapons from various former Soviet republics into **Russia's** domain. The program also helped in dismantling nuclear weapons pointed at the United States, reducing stock-piles and safeguarding and accounting for leftover nuclear materials.

President Bush worked with Russian president Boris Yeltsin on arms reduction treaties. In January 1993 both presidents signed START II (the second Strategic Arms Reduction Treaty) to dramatically reduce the number of long-range nuclear weapons in both countries' arsenals.

With the fall of the former Soviet government, ideally there should have been no further need for NATO. Yet instead of folding, there's been a U.S.-led expansion of the alliance, making the Russians feel that their nation is still regarded as a threat rather as a new partner in insuring Europe's safety.

As an increasing tendency by the United States to resort to military force without first consulting **Russia**. An even further deterioration in US-Russian relations resulted as a rivalry between the nations developed over the oil and natural gas reserves in the Caspian Sea region.

All these factors significantly slowed down US-**Russia** cooperation on nonproliferation treaties and nuclear arms reduction.

The rearmament of Russia

Lost in the current discussion of nuclear proliferation is the aggressive nuclear rearmament by **Russia**. Why has Russia decided to go nuclear again?

Since the terrorist attacks of 9/11, the world has been forced to come to grips with a realistic threat of nuclear weapons following into the hands of terrorist organizations. When we add to that worry the now-real possibility of rogue states such as Iran and North Korea obtaining such weapons, there is suddenly no shortage of talk about nuclear proliferation.



But lost in all this new-found discussion is the aggressive nuclear *rearmament* by **Russia**, which had been steadily disarming since the fall of the Soviet Union. The annual defense budget during the Soviet era was around \$100 billion; by 1999 it had dropped to \$4 billion. But since then the Russian military budget has grown steadily and is expected to be about \$22 billion next year. This involves a major commitment to both modernization and expansion of its nuclear weapons force.

So why has **Russia** decided to go nuclear again?

Some Background

In 1993 Presidents George H. W. Bush and Boris Yeltsin signed the second Strategic Arms Limitation Treaty, START II. Along with the original START signed in 1991, it reflected the realities of an end to the Cold War and any need for the two countries to maintain expensive and dangerously large nuclear

arsenals. As a report by the Carnegie Endowment for International Peace put it: The end of the Cold War established an excellent political environment in which the United States and **Russia** possessed unique chances to build a radically new, non-deterrent, bilateral nuclear relationship.

When implemented, START II would reduce the total number of strategic nuclear weapons deployed by both countries by two-thirds below pre-START levels. More important, it would eliminate the most destructive and destabilizing strategic weapons the land-based multiple independently-targetable reentry vehicle (MIRV) intercontinental ballistic missiles.

In Russia START II met with less enthusiasm, and understandably so. It was clear to nuclear experts on both sides that the treaty implementation would put Russia at a decided disadvantage. For one, **Russia** had already reduced its nuclear force significantly because of its economic problems and START II only accelerated the process. And while **Russia** had to destroy the vast majority of systems slated for dismantlement, the United States which relies less on MIRVed ICBMs -- could achieve its reductions largely through downloading (that is, removing extra warheads from the missiles and storing them nearby).

Despite these objections Boris Yeltsin still favored implementation of the treaty. A number of reasons have been given, perhaps the most significant being Yeltsin's desire for a transition to democracy and a successful market economy, *and* his need for U.S. support as he struggled to contain the Supreme Soviet branch of the Russian parliament which opposed many of Yeltsin's democratic initiatives (Yeltsin dissolved the Supreme Soviet in October 1993).

There was also strong support for the treaty from the Russian military. Since it would be necessary to develop new single-warhead missiles to replace the decommissioned MIRVed ICBMs, **Russia's** Strategic Rocket Force viewed START II as an opportunity to modernize its nuclear force. It is important to recall that the START II ban on MIRVs applied only to *land-based missiles*. Submarine Launched (MIRVed) Ballistic Missiles (SLBMs) were still allowed under the treaty. The argument then which is certainly debatable today was that the SLBMs did not constitute a first-strike threat because of their poorer accuracy. Since **Russia's** nuclear-armed submarines were in a state of serious disrepair, the Strategic Rocket Force could expect generous funding for this effort as well.

It is generally agreed that Boris Yeltsin played politics with START II. After he reduced his internal political opposition by dissolving the Supreme Soviet, he felt less inclined to push for treaty ratification. But by December 1994, faced with war in Chechnya, Yeltsin once again looked to the west for support and finally submitted the treaty to the Duma, the lower house of the Russian parliament. By the summer of 1995 START II ratification by the Duma looked promising. And in 1996 the United States Senate overwhelmingly approved START II by a vote of 87-4. However, NATO air strikes against the Bosnian Serbs in August 1995

caused the Duma as a form of protest to postpone action on the treaty. Political wrangling continued for the next two years inside the newly evolving Russian state and by early 1997 the treaty was in serious trouble.

In September 1997 a set of protocols and accords were agreed upon by the U.S. and **Russia** that were compromises on three critical issues of paramount concern to Russia. According to the Carnegie Endowment, these were: NATO expansion, ABM [anti-ballistic missile] testing, and, most importantly, synchronization of START II implementation with a new follow-on START III agreement, which would correct the most acute deficiencies of the 1993 document. In addition, **Russia** was given a five-year extension on implementation of START II.

From the signing of these 1997 accords through early 1998, the chances of treaty ratification looked good. This was particularly true in August 1998 when the Russian economy suddenly collapsed and the country was in need of assistance from the U.S. and other western countries in the form of debt restructuring. But as negotiations continued, external events intervened. In the spring of 1999 NATO began its bombing campaign against Yugoslavia in response to the ethnic cleansing by Serbian forces in Kosovo. On March 24, Russian Prime Minister Primakov left for a series of meetings in the United States on the 1997 modifications to START II. In the course of his flight he was informed that NATO air strikes against Yugoslavia were imminent. In protest, Primakov ordered his plane to turn around and return to Moscow.

The ABM Treaty

In spite of the Kosovo conflict there was still some optimism. The principal hangup now was the anti-ballistic missile (ABM) treaty. This treaty was first agreed upon and signed by President Nixon and Soviet leader Leonid Brezhnev in Moscow in May 1972. It was quickly ratified by the U.S. Senate and entered into force in October 1972. The logic of the treaty is simple. No matter how effective an ABM system, it can always be overwhelmed by offense. So, if either side went ahead with an anti-ballistic program, another nuclear arms race would surely ensue.

As early as 1995 Presidents Clinton and Yeltsin had agreed upon a limited form of an ABM system known as Theatre Missile Defense (TMD). Its goal was to provide battlefield protection from short and medium-range missiles. In the words of a statement from the U.S.-**Russia** summit meeting of May 1995: TMD systems may be deployed by each side which will not (1) not pose a realistic threat to the strategic nuclear force of the other side and (2) will not be tested to give such systems that capability. In 2000 the Clinton administration broadened this to a National Missile Defense (NMD) program that would protect the United States against limited ballistic missile threats, including accidental or unauthorized launches or Third World threats, but very importantly, would remain compliant

with the ABM treaty. In June 2000 President Clinton announced he would make no decision on deployment on NMD but would leave this decision to his successor.

In spring 2000 Vladimir Putin succeeded Boris Yeltsin as Russian president. In spite of the NMD program, Putin and the Duma concluded that it did not threaten their nuclear deterrent force. Within a month the Duma overwhelmingly approved START II.

Then came the terrorist attacks of September 11, 2001. The attacks didn't have to change everything, but they did, through the distorted lens of George Bush and his neocon force. Although Bush still had available to him the Clinton NMD program for limited ballistic missile threat, within the provisions of the ABM treaty, three months after 9/11 Bush went nuclear and announced that the U.S. would withdraw from the ABM treaty.

Russia's Response

Following formal U.S. withdrawal from the ABM treaty in June 2002, Vladimir Putin announced that Russia would no longer be bound by START II. However, each side felt that something needed to be done to allay worldwide concerns. So in May 2002 Bush and Putin met in Moscow to sign into accord the Strategic Offensive Reductions Treaty (SORT). But SORT was a joke. The treaty was only three pages long and was negotiated in a few months, a far cry from the years required to negotiate other arms control treaties. It was nothing more than a public relations gimmick by Bush and Putin. Here's how the Union of Concerned Scientists described it:

[The treaty] requires both sides to reduce their deployed strategic nuclear warheads to between 1,700 and 2,200 by 2012. In fact, the treaty does not reduce nuclear forces at all; it merely requires a change in their operational status. Each side can keep an unlimited number of warheads in storage. It also does not require the destruction or elimination of a single nuclear missile silo, submarine, missile, warhead, bomber or bomb. Moreover, there are no verification measures to create confidence that either country is carrying out the required changes in operational status. Finally, it provides no timeline or milestones between now and 2012, and expires at the precise moment that its only requirement the 1,700-2,200 limit on deployed forces comes into force.

Now unconstrained by START II, and with the United States pursuing a more aggressive anti-ballistic missile program, as well as plans for a class of low-yield tactical nuclear weapons, so-called bunker busters, **Russia** moved ahead with plans for nuclear rearmament and modernization. As David Holley reported in the *Los Angeles Times*, [Following] high-profile military exercises [in early 2004] highlighting his role as **Russia's** commander-in-chief Putin confirmed that **Russia** would soon possess intercontinental nuclear weapons capable of maneuvering in

flight to evade antimissile defenses. In Putin's words: "No other country in the world has such weapons systems. It means that **Russia** has been and will remain one of the biggest nuclear missile powers in the world. Some people may like it and some may not, but everyone will have to reckon with it."

General Makhmut Gareyev, president of the Academy of Military Sciences, put it this way: "In the current situation the role of nuclear weapons for **Russia** is hard to overestimate. Basically it is the only factor which can still ensure our country's safety. We have nothing else to repel strategic military threats anymore."

One has to ask how George Bush and the United States Congress could have been so reckless and irresponsible to have allowed decades of nuclear arms limitations agreements to vanish overnight. The simple truth is that a handful of suicide attackers, armed with only simple box cutters, made a fool of George Bush, and with that, the United States. With its senseless and disastrous war in Iraq, the Bush administration showed itself to be clueless in effectively combating terrorism. The war has turned into a breeding ground for terrorists and has generated still greater hatred of the U.S. in the Muslim world. And to cap off all this insanity, Bush is now setting up a new nuclear arms race.

LIBYA

Qadhafi's stance on nuclear weapons has been contradictory. Unconfirmed but persistent press reports beginning soon after the 1969 revolution indicated that **Libya** wanted to purchase a nuclear weapon or the components for such a device. According to one report, Qadhafi sent his deputy, Jallud, to Beijing (formerly Peking) in an unsuccessful attempt to purchase tactical nuclear weapons. Qadhafi has voiced his concern over the Israeli nuclear capability and publicly expressed his desire to obtain nuclear weapons. Nevertheless, in 1975 **Libya** reaffirmed its commitment to the 1968 Treaty of Non-Proliferation of Nuclear Weapons, signed originally by the monarchy in 1968. Qadhafi also stated in interviews in 1981 and 1984 that **Libya** was only interested in the peaceful applications of nuclear energy, and he scoffed at the idea of "an Islamic bomb."

There is no doubt, however, that Libya has undertaken extensive bilateral negotiations to secure nuclear research facilities and power plants, and many Libyan students in nuclear energy fields have been sent to United States, West European, and East European universities to further their studies. According to the terms of a 1974 nuclear cooperation treaty with Argentina, Libya was provided with equipment and technical training. Argentina agreed to send senior geologists to **Libya** to advise on uranium prospecting and uranium enrichment. One alleged reason **Libya** occupied the Aouzou Strip in Chad in 1975 was that the area was thought to be rich in uranium deposits. **Libya** and India agreed in

July 1978 to cooperate in the peaceful application of nuclear energy, in line with India's "atoms for peace" policy. **Libya** also contributed money to Pakistan's nuclear effort. France agreed in 1976 to build a nuclear research plant in **Libya** designed to power a water desalination plant.

Libya's main partner in the nuclear field, however, has been the Soviet Union. A small (ten megawatt) Soviet-supplied reactor began operation in Tajura (outside Tripoli) in 1981. Three years later, a research center was opened at the same site; aided by Soviet staff, it continued to operate in 1987. In early 1986, however, a plan for the construction of nine 440-megawatt nuclear power plants was suspended indefinitely.

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