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Articles & Other Documents:

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New York Times
March 23, 2004

Libya: Inspectors Confirm Chemical Arms

International chemical weapons inspectors from the Organization for the Prohibition of Chemical Weapons reported that Libya appeared to be complying with its pledge to give up its stock of those substances. The agency, which monitors compliance with the 1993 treaty banning chemical weapons, also said Libya's declarations about its former chemical weapons program seemed to have been accurate. Completing their inventory of chemical weapons stockpiles, the inspectors reported that Libya, as declared, had made 23 tons of mustard gas. Experts said Libya had imported enough precursor chemicals to make thousands of tons of sarin, a deadly nerve gas, though it had not produced any. Amy E. Smithson, a chemical weapons expert at the Washington-based Center for Strategic and International Studies, said in an interview that Libya's declarations so far suggested that its chemical weapons program had been "more bluster than reality."
--Judith Miller (NYT)
http://www.nytimes.com/2004/03/23/international/middleeast/23BRIE2.html

(Return to Articles and Documents List)

Washington Times
March 23, 2004
Pg. 8

Radiation Devices Deployed To Ports

Designed to stop 'dirty bombs'
By Jerry Seper, The Washington Times
U.S. Customs and Border Protection (CBP) yesterday introduced highly sophisticated radiation portal monitors designed to better prevent terrorists or others from attempting to smuggle "dirty bombs" into the United States through U.S. seaports.
CBP Commissioner Robert C. Bonner said the monitors, which detect the radiological materials used in nuclear and radiological dispersal devices, known as dirty bombs, are being deployed rapidly to all of the country's major seaports of entry.
In addition to the monitors, Mr. Bonner said, other sophisticated equipment used by CBP in its "layered enforcement strategy" already in use includes large-scale non-intrusive inspection technology, X-ray type machines that can scan entire sea containers in two to three minutes, personal radiation detection devices and radiation isotope identifiers that can pinpoint the source and nature of radiation.
These devices are important in detecting and identifying radioactive materials moving through a port of entry, he said.
"The best way to prevent a terrorist attack is by preventing terrorists or terrorist weapons from entering our country in the first instance. The recent terrorist attacks in Madrid drive home the increased need to secure our borders against terrorist penetration," Mr. Bonner said.
"The new highly sophisticated radiation detection devices U.S. Customs and Border Protection is deploying in our seaports are a major step in ensuring that our border and our country are more secure," he said.
CBP spokeswoman Paula Keicer said the radiation portals being deployed at U.S. seaports enhance the agency's "already formidable radiation detection capabilities."
She noted that CBP already has deployed more than 300 radiation isotope identifier devices, known as RIIDs, to every major seaport and land border crossing in the United States.
The devices are hand-held instruments capable of detecting and identifying various types of radiation emanating from radioactive materials, including those used in a dirty bombs as well as special nuclear materials, natural sources and isotopes commonly used in medicine and industry.
In May 2002, Jose Padilla, a former Chicago gang member and convert to Islam, was arrested by the FBI in a suspected scheme to detonate a dirty bomb in the United States. Padilla, a New York native and convicted felon whose Arabic name, Abdullah al Muhajir, translates to "the emigrant," was stopped at Chicago's O'Hare International Airport and later turned over to U.S. military authorities, who are holding him as an enemy combatant.
Authorities believe Padilla intended to detonate a bomb at several targets, including government buildings in Washington. His trip to Chicago in May 2002, authorities said, was to begin reconnaissance for a bombing target and seek a source for the radioactive material for a dirty bomb.
CBP is the agency within the Homeland Security Department charged with the protection of the nation's borders.
http://www.washtimes.com/national/20040322-104252-6739r.htm

(Return to Articles and Documents List)

New York Times
March 23, 2004
Slender And Elegant, It Fuels The Bomb
By William J. Broad
There was no breakthrough, no eureka, no flash of insight. It happened slowly, the advances gradual until what Dr. Gernot Zippe and his colleagues had invented was a compact, almost elegant device for collecting uranium's rare U-235 isotope.
The feat might have remained obscure, except that it helped define the nuclear era: by the 1960's, Zippe-type machines had become the easiest way to make fuel for reactors as well as weapons of terrifying power, for lighting cities or destroying them.
The invention was the uranium centrifuge, and around the world, millions of them now spin in high-security plants often ringed by barbed wire.
If a chief inventor has any regrets, he keeps them private. In a recent interview, he was philosophical about his team's brainchild, saying nations had the responsibility to determine whether the work would ultimately be judged good or evil.
"With a kitchen knife you can peel a potato or kill your neighbor," Dr. Zippe (pronounced TSIP-eh) said by phone from Munich, where at 86 he still works occasionally and flies off to international meetings. "It's up to governments to use the centrifuge for the benefit of mankind."

And benefits there are. Nuclear reactors, with Zippe-type centrifuges often making their uranium fuel, now generate about 16 percent of the world's electricity. That figure may rise in the decades ahead as worries grow about global warming and oil shortages.

But news of Dr. Zippe's invention has recently centered on the dangers of its illicit spread. Experts warn that it may put nuclear weapons into the hands of terrorists or states sympathetic to them.

Last month, a Pakistani nuclear expert, Abdul Qadeer Khan, admitted running a vast smuggling ring that had supplied at least three nations with Zippe-type centrifuges. It appears to be history's worst case of nuclear proliferation.

While nations congratulate themselves for exposing the network, private experts say the secretive centrifuge design at the heart of the illegal trade is still on the loose and the dangers of its misuse are far from over.

"It's small and you can procure the needed items in secret without being detected," said David Albright, president of the Institute for Science and International Security, an arms control group in Washington. "You end up with a small plant that's very hard to find."

The world may be in for an unsettling time if the future of the Zippe centrifuge is as surprising as its past. The tale of its development is full of striking twists, and no little sweat.

"It was very hard work," said Houston G. Wood, a centrifuge expert at the University of Virginia. "Problems of great difficulty had to be solved."

Born and raised in Austria, Dr. Zippe studied physics at the University of Vienna in the 30's and served in the German Luftwaffe as a flight instructor and a researcher on radar and airplane propellers. In 1945, the Russians took him as a prisoner to a special camp for the technically adept.

Moscow was desperate to catch up with Washington in nuclear arms. The hardest part was not the design but getting the fuel. Like all nuclear aspirants, Russia hoped to rearrange nature.

The work centered on isotopes, forms of the same element whose nuclei have different numbers of neutrons. The most prevalent isotope of uranium, which accounts for 99.3 percent of natural uranium, is U-238, with 146 neutrons. It is ever so slightly heavier than U-235, which has three fewer neutrons and accounts for just 0.7 percent of uranium in nature.

But U-235 is highly prized because it easily splits in two to produce bursts of atomic energy. When natural uranium is enriched to contain about 5 percent U-235, it can fuel nuclear reactors; to about 90 percent, atom bombs.

The Russians put Dr. Zippe and other German prisoners of war to work making centrifuges to obtain the rare U-235 isotope. The Americans had tried, but had turned to other methods that were quite bulky, arduous and costly.

The Russian team realized that uranium centrifuges would have to be linked up by the hundreds or thousands so that each could make tiny increases in the U-235 output, slowly raising the concentration. And to be economic and productive, the machines would have to spin continuously for years.

Centrifuges are common devices in industry and medicine that spin fast to separate materials of differing masses — for instance, blood cells from serum. Though they sound exotic, they are simple in principle. A washing machine on spin cycle is a centrifuge, its whirl creating artificial gravity that separates water (heavy) from clothes (light).

A good washing machine spins about 15 revolutions per second. The Russians — to have any hope of exploiting the minute differences in the masses of U-235 and U-238 in order to separate the nearly identical substances — needed centrifuges that spun about 100 times as fast, near the speed of sound.

"Everybody was laughing and said, `This will never work,' " Dr. Zippe recalled. "I was a young man. I had no idea how to do it. But I decided to do my best."

Among the 60 or so experts, Dr. Zippe, whose golden touch seemed to make mechanical things come to life, was soon appointed the team's lead experimenter. The general leader was Max Steenbeck, a physicist and former director of the German company Siemens.

The overall plan was clear, if not the means: start with a hollow, cylindrical rotor. Fill it with gaseous uranium. At the rotor's bottom, use pulsating magnetic fields (much like those of an electric motor) to spin it fast enough to throw the heavier U-238 toward the wall, letting the U-235 accumulate near the center. Slightly heating the bottom of the gaseous mix would produce currents that would tend to move the U-238 down and the U-235 up, where scoops could gather the isotopes.

To realize this ambitious plan, the team worked hard to defeat the main adversary of relentless spinning: friction, which can slow, cripple or destroy machines meant to work flawlessly for years. The rotor casing was evacuated to remove all air. A magnetic bearing was developed to hold the rotor's top steady, eliminating the need for physical support.

Perhaps most important, the team let the rotor rest on a needlelike bearing. It was the only point of physical contact for the spinning assembly, a tiny concession to the material world.

It took years of tinkering and experimentation. But the team finally got the complex devices to work.

The Germans "revolutionized the whole uranium fuel industry," said Pavel V. Oleynikov, a Russian historian of the postwar centrifuge effort.
In 1956, Dr. Zippe was set free, and he returned to Vienna. He went to a meeting in Amsterdam in 1957 and was astonished to learn that the West lagged far behind his team.
He decided to share what he knew. The Soviets had let him take no notes or reports. But as he recalled, "I had it in my head."
Dr. Zippe flew to the United States and, under government supervision, set up shop at the University of Virginia. There, he managed to recreate the Russian centrifuge.
Washington asked Dr. Zippe to join its secretive nuclear establishment and change his citizenship. He resisted. It was too reminiscent of his Soviet days. Instead, he wanted to use the invention for peaceful work, for enriching uranium for commercial reactor fuel.
Flying back to Europe in 1960, Dr. Zippe worked in industry, especially in West Germany, joining the European postwar drive for nuclear independence from the United States.
"He was a little like Oppenheimer," said Mr. Albright, of the arms control group, referring to Dr. J. Robert Oppenheimer, the American atom bomb leader who managed to get stubborn experts to work together. "He had a lot of help, but he was the real spark plug."
In the 1960's, Dr. Zippe and his associates managed to make the centrifuges even more efficient. They switched the rotor material from aluminum to the superhard alloy called maraging steel. That let the centrifuges spin faster, speeding the pace of enrichment without danger that the devices would tear themselves apart.
The team also managed to make the rotors longer, which increased the collection of U-235. It took special joints known as bellows, which let the long centrifuge, like a plucked string, flex and bow safely as its speed increased.
"Ten times longer, ten times more," Dr. Zippe said.
In the 1970's, Urenco, a new European consortium for making nuclear fuel, adopted Zippe-type designs. But its security for the potentially deadly technology was lax.
Dr. Khan, the Pakistani expert, worked as a consultant at a Urenco plant and stole the designs. He used them in Pakistan to build centrifuges to make nuclear arms fuel and, as recently disclosed, later sold centrifuge plans and machines to Iran, Libya and North Korea.
"This is a very sorry story," Dr. Zippe said.
A short man with a fondness for string ties and airplanes, which he piloted until he was 80, Dr. Zippe now divides his time between Vienna and Munich, where lives with a son. He says he still consults widely on technical issues, including centrifuges. "If they need something," he said of responsible companies, "I help them."
As for the future of the uranium centrifuge, many experts voice cautious optimism. Newer models are much harder to manufacture and less easily copied, especially illicitly. And the United States and its partners are still tracking down elements of the Khan network, insisting that the illegal traders will be put out of business.
For his part, Dr. Zippe foresees benign possibilities even if his handiwork continues to spread clandestinely. During the cold war, he pointed out, nations with nuclear arms restrained themselves because they understood that the awesome destructiveness could become mutual. "The reason America did not drop the bomb in Korea or Vietnam was fear that the Russians would retaliate," he said.
Today, he added, small states want nuclear arms not necessarily for the sake of aggression or terrorism but to deter foes.
"Let's hope," he said, "there's enough clever people not to use the bomb on people again."
http://www.nytimes.com/2004/03/23/science/23CENT.html

(Return to Articles and Documents List)

Washington Post
March 25, 2004
Pg. 20

World In Brief

ATHENS -- Greece staged a simulated chemical attack and a hostage-taking situation to end two weeks of security drills in preparation for this summer's Olympics, the government said. Hundreds of U.S. commandos took part in the exercise. The United States is among countries helping Greece with the massive security preparations. The effort will cost more than $800 million and involve more than 50,000 police, soldiers and other personnel.
http://www.washingtonpost.com/wp-dyn/articles/A22484-2004Mar24.html

(Return to Articles and Documents List)

Washington Post

N. Korean Leader, Chinese Aide Discuss Arms

Associated Press
Thursday, March 25, 2004; Page A20

SEOUL, March 24 -- North Korean leader Kim Jong Il hosted a rare meeting Wednesday with China's foreign minister to discuss the region's nuclear dispute. Beijing described the visit as a "very important contact."

Li Zhaoxing, who arrived Tuesday in the North Korean capital of Pyongyang, became the first foreign minister from China to visit the North in five years. The visit is seen as bolstering the push for a third round of six-nation talks on the status of North Korea's nuclear programs, although efforts to organize working-level groups for those talks remain unclear.

As the North Korean government's last major ally, China has taken on the role of host and coordinator of the meetings.

The Chinese diplomat and North Korean officials were expected to discuss a date for the crucial working group meetings, which will seek to nail down details before the next full round of talks, sometime before July, according to South Korea's Foreign Minister Ban Ki Moon. The United States, the two Koreas, China, Russia and Japan have agreed to convene a third round of talks on North Korea's nuclear program. A second round ended in Beijing last month without much progress. In the meantime, participants are trying to form working groups. The South Korean government has accused the North of dragging its feet.

In Hong Kong, a North Korea expert said Pyongyang might skip the next round of nuclear talks because of the uncertainty caused by November's presidential election in the United States.

"What are they going to do there? Now, is anybody going to strike a deal?" asked Charles L. Pritchard, a former U.S. State Department official. He was part of an unofficial delegation of Americans who toured North Korea's nuclear facility at Yongbyon in January as a way of providing confirmation that it has reprocessed spent fuel rods into plutonium.

It is unlikely that President Bush will offer a deal before the election, while his Democratic rival, Sen. John F. Kerry of Massachusetts, likely would start a direct dialogue with Pyongyang if he wins, Pritchard said.

In Pyongyang, Li's delegation met Kim Jong Il and North Korean dignitaries in a "warm atmosphere," according to North Korea's official KCNA news agency.

Li presented greetings from Chinese President Hu Jintao, KCNA reported. Before Li departed for Pyongyang, Chinese Foreign Ministry spokeswoman Kong Quan described the trip as a "very important contact between our two sides."

Earlier in Seoul, Ban, South Korea's foreign minister, said North Korea likely would attend the next six-nation nuclear talks despite its recent rhetoric over U.S.-South Korean military exercises and the impeachment of South Korea's president.

A recent rupture in relations has fanned concern that the Communist North might use the joint war games or South's leadership upheaval as grounds for postponing nuclear negotiations.

The U.S. military describes the annual U.S.-South Korean war games, which began earlier this week, as defensive. But North Korea routinely criticizes them as preparation for an invasion.

Ban is scheduled to meet Li in Beijing next week.

The U.S. government insists that the North dismantle its nuclear weapons programs completely and verifiably. North Korea says it will only do so if the United States provides economic aid and security guarantees.

North Korea threatened Friday to boost its nuclear arsenal in "quality and quantity," blaming the United States for the lack of progress in nuclear talks.

http://www.washingtonpost.com/wp-dyn/articles/A22223-2004Mar24.html

(Return to Articles and Documents List)

Washington Post
March 25, 2004
Pg. 20

U.S. Urges Curb On Arms Traffic

U.N. Is Given Resolution to Ban Transfers to Terrorists

By Colum Lynch, Washington Post Staff Writer

UNITED NATIONS, March 24 -- The Bush administration presented the U.N. Security Council on Wednesday with a draft resolution that would outlaw the transfer of nuclear, chemical and biological weapons to terrorists and mercenary organizations.

The move comes nearly six months after President Bush appealed to the U.N. General Assembly to adopt a resolution that would "criminalize the proliferation of weapons." It follows an agreement on the text this week by the representatives of the world's five original nuclear powers -- the United States, Russia, Britain, France and China -- who possess veto power in the council.

The five-page resolution would require the United Nations' 191 members to "adopt and enforce appropriate effective laws" to prevent "any non-state actor" from being able to "manufacture, acquire, possess, develop, transport or use nuclear, chemical or biological weapons and their means of delivery." It is to be adopted under Chapter 7 of the U.N. Charter, a provision that permits the council to use sanctions or military force to compel states to abide by its demands.

The draft was agreed upon after the United States accepted a demand from China to drop a provision authorizing the interdiction of vessels suspected of transporting weapons of mass destruction, a cornerstone of the Bush administration's nonproliferation strategy. But China's U.N. ambassador, Wang Guangya, said Tuesday that "this interdiction [provision] has been kicked out" of the resolution.

U.S. officials defended the concession, saying that an existing program, the Proliferation Security Initiative (PSI), provides sufficient legal power to board ships suspected of transporting such weapons. But only 14 countries have agreed to participate in the PSI.

John R. Bolton, the U.S. undersecretary for arms cControl and international security, said in an interview that a provision in the resolution calling on states to "take cooperative action to prevent illicit trafficking" would cover interdiction of ships believed to be hauling banned weapons. He said Wang acknowledged this in private by arguing that the word " 'interdict' is redundant."

John D. Negroponte, the U.S. ambassador to the United Nations, said the focus of the resolution "is how to prevent weapons of mass destruction and materials that can be used to make them from falling into the hands of non-state actors." Negroponte noted that the resolution had been written to "fill gaps" in a web of treaties and agreements that govern the spread of weapons between states.

In a Sept. 23 address to the General Assembly, Bush urged the council to pass tougher laws, impose stricter export controls and increase scrutiny of existing stockpiles of weapons of mass destruction. In a Feb. 11 address at the National Defense University, Bush followed up on the theme, pledging to help governments "enforce the new laws that will help us deal with proliferation."

U.S. officials said the resolution's chief aim is to target international terrorists, but the resolution would also require states, including alleged proliferators such as Pakistan, Iran and North Korea, to adopt new laws or regulations to enforce the ban on the transfer of prohibited weapons. The council's 10 non-permanent members will begin discussing the draft Thursday. Nine votes are required for passage by the 15-member Security Council.

Some U.N. envoys have complained that they have been excluded from the negotiations by the council's five permanent members, and that the proposed resolution would perpetuate a long-standing monopoly of nuclear weapons by those five nations. Under the 1970 Non-Proliferation Treaty, only the United States, Russia, Britain, France and China may possess nuclear weapons.

http://www.washingtonpost.com/wp-dyn/articles/A22260-2004Mar24.html

(Return to Articles and Documents List)

New York Times
March 25, 2004

Arms-Control Group Says U.S. Inflated Libya's Nuclear Bid

By William J. Broad

Rekindling debate on how close Libya actually came to acquiring a nuclear bomb, a private arms-control group says the Bush administration overstated the number of devices the country had for making uranium fuel.

The group, the Institute for Science and International Security, based in Washington, said yesterday that the administration had given an inaccurate briefing to reporters last week at the Energy Department's nuclear weapons lab in Oak Ridge, Tenn. At that briefing, officials displayed a dozen uranium centrifuges from what they said was a cache of about 4,000 that Libya had obtained before agreeing in December to dismantle its nuclear weapons program.

The institute, which has done extensive research on uranium centrifuges, said its own inquiries, including interviews with federal and overseas experts, found that Libya had obtained 4,000 casings for centrifuges, but that few if any had the finely tooled rotors that are the machine's heart.

A spokeswoman for the Energy Department replied that Libya had the parts and raw material for making the centrifuges, if not thousands of working machines. "Libya had a nuclear weapons program — that's not in dispute,"

said the spokeswoman, Jeanne Lopatto. As for the 4,000 centrifuges, she said, the Libyans "either had the parts in hand, or the ability to make them."

She added that Libya had many tons of a special high-strength steel "which would make a lot of rotors."

Centrifuges are complex devices and their rotors are hard to make. They must spin so fast that a wobble can throw them out of alignment and destroy the machine. Without working rotors, said David Albright, the institute's president, Libya would have been "several years from being able to produce enough highly enriched uranium for a bomb."

"The administration has distorted what was found in Libya, with the implication that it was very close to having a nuclear weapon," he said.

After Libya publicly renounced its weapons program, the Bush administration and Britain tended to portray the project as large and aggressive, while the International Atomic Energy Agency said Libya was several years away from producing a nuclear weapon.

In a report last month, the agency said Libya had obtained two advanced centrifuges of the type known as P-2, for Pakistan-2, had ordered 5,000 more and "had received a considerable number of parts, mainly casings." It added that shipments for the advanced machines contained "no additional rotors."

At the briefing in Oak Ridge on March 15, White House and Energy Department officials showed a dozen casings for centrifuges, flanked by guards armed with assault rifles. Energy Secretary Spencer Abraham gave the main briefing, and a White House official spoke of the 4,000 centrifuges. Many television and newspaper reports, including one in The New York Times, quoted the administration as saying Libya had surrendered 4,000 centrifuges.

Corey Hinderstein, a researcher for the security institute, investigated that claim and learned from an Oak Ridge employee involved in the briefing that the 4,000 figure referred to casings, according to a memorandum she wrote to Mr. Albright, the group's president.

Mr. Albright said the administration had papered over a huge gap between centrifuge theory and practice. "It would take the Libyans a long time to learn how to make the sophisticated components," he said. "They might have failed because some of them are extremely difficult to make. The bottom line is that what they had was a far cry from a large number of working machines."

http://www.nytimes.com/2004/03/25/politics/25NUKE.html

(Return to Articles and Documents List)