

Towards a Chemical War in Syria ?

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NEW YEAR**

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Russian Police Find Radioactive Drug Lab

Source: <http://en.rian.ru/crime/20121101/177108136.html>

Russian counter-narcotics police and the Federal Security Service (FSB) have raided a drug lab in Moscow that contained plutonium-contaminated soil, the Federal Drug Control Service (FSKN) said on Thursday.

"We have taken an underground amphetamine lab out of operation," the FSKN said.

"During a search our special services found a small container which probably contains earth from Chernobyl, the radiation dosimeter

readings were off the charts. Plutonium was also detected. Four sources of ionizing radiation were found in the car of one of those detained." The criminals may have been part of a terrorist gang, the FSKN added.

The operation took place two weeks ago, but has only just been made public, the FSKN said, adding that staff from MosNPO Radon, a company that specializes in handling radioactive substances, were also involved.



Iran Close to Completing Uranium Gear Deployment at Qum: Report

Source: <http://www.nti.org/gsn/article/uranium-gear-deployment-nearly-complete-iranian-bunker-complex-report/>

Technicians are apparently close to wrapping up deployment of the final batch of uranium enrichment centrifuges slated for placement at Iran's subterranean Qum facility, Reuters on Thursday quoted Western international relations officials as saying.

The final group of around 640 centrifuges is reportedly in position at Qum, bringing the total

quantity of systems at the site to roughly 2,800, the envoys indicated. They said the recently fielded machines were still nonoperational.

Iran might still need to lay tubing and take additional measures in order to use the newly deployed centrifuges, according to one of the officials. The Qum installation does not seem to



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have altered its quantity of operating centrifuges -- approximately 700 -- since shortly into 2012, diplomatic insiders indicated; it was uncertain if operational hindrances or concern over an international backlash has prevented Tehran from activating more

time will be measured in weeks rather than months."

A government would probably accumulate sufficient fissile material for multiple nuclear weapons before moving to assemble any such arms, according to specialists.



Meanwhile, French Foreign Minister Laurent Fabius on Wednesday became a target of Iranian criticism for suggesting Tehran is on track to manufacture atomic armaments in 2013. "We considered France an advocate of the role of international organizations and their affiliated institutions, but now it seems that the French government is moving away from its traditional stance in the international arena," Iranian Foreign Ministry spokesman Ramin Mehmanparast said.

machines.

Potential steps to begin using more centrifuges would prompt protests from the United States, Israel and other nations fearful that the enrichment effort is geared toward production of bomb material, according to Reuters. Tehran insists all of its atomic activities, including its refinement of uranium, are intended solely for peaceful purposes.

It is also unknown if the inactive machines would eventually generate 5 percent-enriched uranium or more highly refined material. Washington and other governments fear Iran's growing stockpile of 20 percent-enriched uranium could enable faster preparation of bomb-capable material with an enrichment level of roughly 90 percent. However, the Middle Eastern nation has said the higher-enriched uranium is intended only to fuel a medical reactor in Tehran.

Tehran could be capable of generating in nine months enough bomb-capable uranium to power four weapons, according to an analysis by former IAEA safeguards chief Olli Heinonen and Simon Henderson of the Washington Institute for Near East Policy.

The experts said the "time table will shrink as more 20 percent-enriched uranium is produced, at which point potential breakout

how can the French foreign minister speak of the danger of Iran obtaining nuclear weapons while completely ignoring the inspections of International Atomic Energy Agency (IAEA) over past years that have rejected any diversion by the Islamic Republic of Iran from peaceful purposes," Tehran's Press TV quoted Mehmanparast as saying.

A U.S. think tank on Thursday urged the five permanent U.N. Security Council member nations and Germany to caution Tehran against moving to refine uranium beyond the 20 percent level.

Mansour Haqiqatpour, deputy chief of the Iranian parliament's foreign policy and national security committee, has suggested Tehran could produce uranium of "60 percent purity."

The lawmaker's comment "should not be seen as having any official standing for policy unless repeated or announced by senior executive or nuclear officials," according to the Institute for Science and International Security in Washington. "However, it is time to consider the implications of such statements, before Iran makes any official announcements about making highly enriched uranium."

"Because 60 percent-enriched uranium production is an important step towards the production of



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[weapon-grade uranium] and has no civilian justification, such a move will be widely viewed as Iran starting to break out to build nuclear weapons," the organization stated. "The United States and other members of the P-5+1 should

ensure, ideally in a quiet manner, that Iran understands that its production of highly enriched uranium is unacceptable, regardless of the pretext."

Iran and the Gulf Military Balance

By Anthony H. Cordesman

Source: <http://csis.org>

The Burke Chair in Strategy at the Center for Strategic and International Studies has recently updated a two-part analysis on Iran's growing military capabilities, **Part I: The Conventional and Asymmetric Dimensions** and **Part II: The Missile and Nuclear Dimensions**.

The two-part report draws on the most recent information available, including updated sources and analyses, and provides new insights on Iran's conventional and unconventional forces. It responds to growing tension in the region with current data on what a military confrontation would entail from Iran's standpoint. It incorporates the major strategic components of each side, illuminates Western concerns over developments in Iran's nuclear program and details its growing emphasis on economic and asymmetric warfare.

Part I: The Conventional and Asymmetric Dimensions, focuses on Iran's ground, sea, air, and air defense forces, with a renewed emphasis on the ability of the Revolutionary Guard to undertake offensive action against the sea lanes in the Strait of Hormuz. Major updates include a far more comprehensive view of Iran's air-defense network, including Iran's deteriorating long-range SAM coverage and Iranian

both sides, and the hydrologically-determined threat of mines and submarines.

Part II: The Missile and Nuclear Dimensions, addresses the unconventional aspects of Iran's military including its research into advanced ballistic missiles and nuclear weapons. The updated ballistic section includes technical specifications on the major classes of Iranian liquid- and solid-fueled missiles, and analyses their potential role within a conventional campaign and as carriers for CBRN weapons.

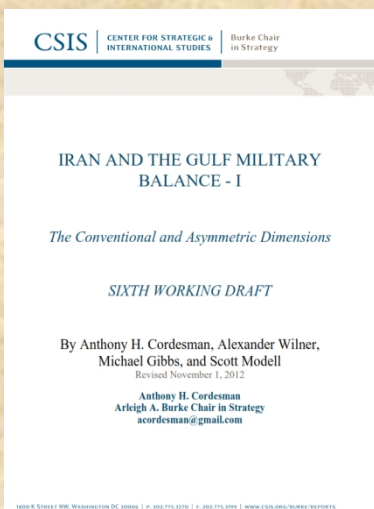
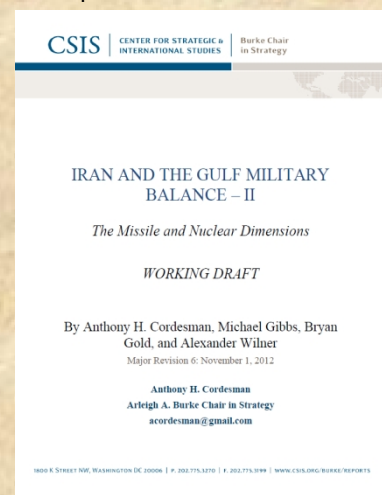
Part II assesses Iran as having a capable force for short-range massed bombardment, but lacking the precision, munitions, and range to yet threaten forces more than a few hundred kilometers from its shores.

The nuclear program section contains updated figures and charts detailing the recent history of Iran's nuclear program, its possible military dimensions, Israeli and US strike options and their impact. This section illustrates the continually expanding character of the Iranian nuclear program and demonstrates that Iran has nearly doubled the number of centrifuges at Fordow, increased its output of 20% enriched Uranium, converted nearly 1/3 of its stock of 20% enriched material to fuel plates, and has thus far refused IAEA access to the Parchin facility.

The Iran and Gulf Military Balance Reports Part I & II reassess the likely role of Iran's growing military capabilities. While it notes that the program is publicly aimed at Israel and the US, and some of Iran's upgraded technology is oriented toward these states, it concludes that

efforts to rebuild and reinforce that coverage with imported and domestically-improved foreign systems.

Part I of the analysis also includes sections on nascent direct components of US-Iranian competition – Iran's use of direct proxy attacks, the (rarely discussed in public) cyber strikes by



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the target of these conventional forces is at least as much Iran's Arab neighbors as it is extra-regional interlopers. It holds that many of

Iran's anti-Western abilities are aimed at denying the West access as a means to a hegemonic regional end, not as an end itself.

► **Part – I :** http://csis.org/files/publication/120221_Iran_Gulf_MilBal_ConvAsym.pdf

► **Part – II:** http://csis.org/files/publication/120222_Iran_Gulf_Mil_Bal_II_WMD.pdf

Dirty Bomb Attack In UK A 'Real Threat'

Source: <http://news.sky.com/story/1005641/dirty-bomb-attack-in-uk-a-real-threat>

A dirty bomb attack on the UK is a "real threat" and every country has to be vigilant against a nuclear strike, the Foreign Office has warned. Alistair Burt, who is in charge of counter-

consequences - psychological, economic, political and environmental.

"Such an attack was unthinkable just a generation ago. But it is now a possibility we need to confront with the utmost vigilance."

Figures from the International Atomic Energy Agency, the UN watchdog, for 1993-2011 show there have been 2,164 cases of nuclear material being "outside state control".

Of those, 147 occurred in 2011, with four involving the highly enriched uranium needed

terrorism policy, admitted there had been fears of a bomb during this summer's Olympics.

The threat was considered to be strong enough for nuclear detectors to be deployed for the Games, he said at the start of a two-day summit in London.

The Foreign Office minister said the number of cases involving the loss or theft of nuclear materials around the world was growing.

And he called for countries to show "utmost vigilance" and unite to combat the threat of a nuclear attack.

"Nuclear terrorism is a real and global threat. A successful attack, no matter where in the world it came, would be catastrophic," he said.

"Catastrophic for the immediate devastation and terrible loss of life, and for the far-reaching

to build a nuclear bomb.

Mr Burt said the threat meant Britain's Cyclamen system, used to detect nuclear and radiological materials at ports and airports, was deployed at the Olympics.

"At the Olympic Park, yes, absolutely, processes were deployed... that would trigger the equipment so that we would know something was passing through," he said.

He also expressed concerns that some governments were helping terrorists acquire nuclear materials or expertise - although he refused to be drawn on the countries involved.

"It wouldn't be right to identify individual nations who may be engaged in helping or assisting," he said.



Nuclear energy facilities proved themselves resilience during Hurricane Sandy

Source: <http://www.homelandsecuritynewswire.com/dr20121106-nuclear-energy-facilities-proved-themselves-resilience-during-hurricane-sandy>



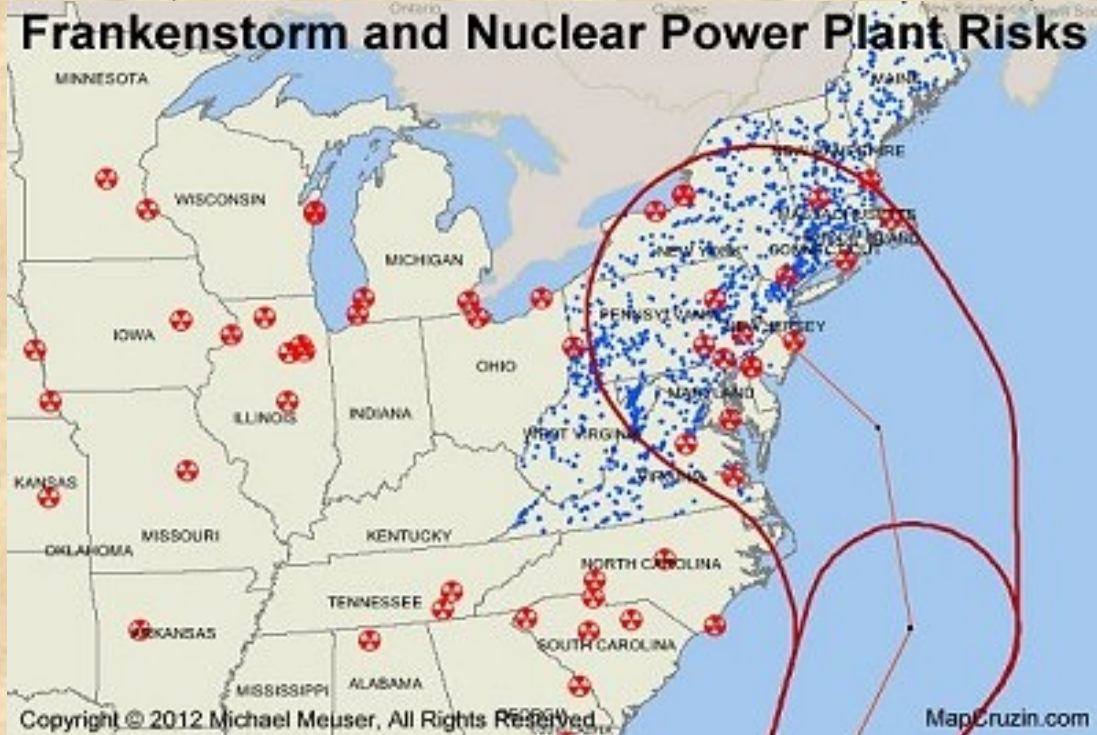
New York's Indian Point nuclear plant // Source: wikipedia.org

There are thirty-four nuclear energy facilities in the area hit by Hurricane Sandy. The Nuclear Energy Institute (NEI), and industry association, said that all of them have responded well and safely to the powerful storm.

NEI says that careful planning and preparations days in advance of the storm paid

plants and communities that surround them. As Hurricane Sandy moves beyond the mid-Atlantic and Northeastern states after knocking out electricity to seven million customers in thirteen states, nuclear facility operators have been conducting inspections to ensure that all systems and equipment are ready to maintain the facilities in a safe condition.

Of the thirty-four nuclear facilities from South Carolina to Vermont in Hurricane Sandy's path, twenty-four continued to operate safely and generate electricity throughout the event. Seven were already shut down for refueling or inspection, and three in New Jersey or New York safely shut down, as designed, because of storm conditions or grid disturbances. Inspectors from the U.S. Nuclear Regulatory



off at all of these facilities, which were prepared to take the steps necessary to maintain safety against high winds, record flooding, and disturbances on the regional electric grid. Trained reactor operators and emergency response personnel stationed at the plants during the storm were able to take actions beyond their usual duties to protect the power

Commission (NRC) have been stationed at each nuclear energy facility to oversee preparation for and recovery from the storm. "Hurricane Sandy once again demonstrates the robust construction of nuclear energy facilities, which are built to withstand extreme flooding and hurricane-force winds that are beyond that historically



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reported for each area,” said Marvin Fertel, president and chief executive officer at NEI. “Beyond the physical strength of these nuclear power plants, the professional crews that operate and maintain them take exacting precautions as significant storms approach. They also coordinate with local, state and federal emergency response officials.

again demonstrate that nuclear energy facilities are well protected against extreme natural events,” Fertel said.

In 2011, twenty-four reactors at fifteen facilities from North Carolina to New England safely withstood Hurricane Irene, a category 3 hurricane. In 2005, Entergy safely shut down Waterford 3 in Louisiana after Hurricane



“Our facilities’ ability to weather the strongest Atlantic tropical storm on record is due to rigorous precautions taken in advance of the storm. In the days prior to Sandy storming the Atlantic coast, nuclear plant operators took a series of actions outlined in their emergency preparedness plans,” Fertel said. “These include securing or moving any equipment that could possibly become airborne due to high winds and verifying that weather-tight doors and water intakes are prepared. Each plant site also has numerous emergency backup diesel generators that are tested and ready to provide electricity for critical operations if electric power from the grid is lost.”

NEI says that as a precaution, a reactor will be shut down at least two hours before the onset of hurricane-force winds at the site, typically between 70 and 75 miles per hour. If there is a loss of off-site power during or following a hurricane, reactors automatically shut down as a precaution and the emergency backup diesel generators will begin operating to provide electrical power to plant safety systems.

“Actions taken by companies operating reactors in the mid-Atlantic and Northeast once

Katrina, a category 5 hurricane, knocked out off-site power and damaged the regional electrical infrastructure. Florida Power & Light in 2004 safely shut down St. Lucie 1 and 2 in Florida after Hurricane Jeanne caused a loss of off-site power.

During Hurricane Sandy, Exelon Corp.’s Oyster Creek reactor in New Jersey, which was shut down before the storm for a refueling outage, declared an alert on 29 October. The alert, the second lowest of four Nuclear Regulatory Commission action levels, was in response to high water levels at the facility’s cooling water intake structure. Exelon is in the process of restoring off-site power to the facility. Until then, Oyster Creek is being safely powered by backup diesel-driven electrical generators that have fuel to power the reactor’s safety systems for more than two weeks. The plant’s reactor and used fuel storage pool have ample water supplies for cooling.

The NEI notes that nuclear power plants operating in thirty-one states provide electricity to one of every five U.S. homes and businesses. Nuclear energy produces more electricity than



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any other source in Connecticut, Illinois, New Hampshire, New Jersey, South Carolina, Vermont, and Virginia.

The institute says that nuclear energy facilities are designed to withstand natural occurrences greater than those encountered in the regions

where they are located. They are built to withstand floods, earthquakes, and high winds, and have numerous safety systems that will operate and safely shut the reactor down in the event of a loss of off-site power.

Illicit Trafficking Database (ITDB)

Source: <http://www-ns.iaea.org/security/itdb.asp>

Established in 1995, the ITDB is the IAEA's information system on incidents of illicit trafficking and other unauthorized activities and events involving nuclear and other radioactive material outside of regulatory control. The ITDB is a unique asset helping participating States and selected international organizations to combat illicit nuclear trafficking and strengthen nuclear security. It is also an essential component of the information platform supporting the IAEA's [Nuclear Security Plan 2010-2013](#).

The ITDB facilitates the exchange of authoritative information on incidents among States. As of 31 December 2011, 113 States participate in the ITDB Programme. In some cases, non-participating States have provided information to the ITDB.

The scope of the ITDB information is broad. It includes, but is not limited to, incidents involving illegal trade and movement of nuclear or other radioactive material across national borders. The scope also covers incidents involving unauthorized acquisition (e.g. through theft), supply, possession, use, transfer or disposal—intentional or unintentional—of nuclear and other radioactive material with or without crossing international borders. The scope also covers unsuccessful or thwarted incidents of the acts detailed above, as well as the loss of material and the discovery of uncontrolled material. States are also encouraged to report incidents involving the intentional offering for sale of benign material that is purported to be nuclear or otherwise radioactive, i.e. scams.

From January 1993 to December 2011, a total of 2164 incidents were reported to the ITDB by participating States and some non-participating States.

Of the 2164¹ confirmed incidents, 399 involved unauthorized possession and related criminal activities. Incidents included in this category involved illegal possession, movement or attempts to illegally trade in or use nuclear material or radioactive sources. Sixteen incidents in this category involved high enriched uranium (HEU) or plutonium. There were 588 incidents reported that

involved the theft or loss of nuclear or other radioactive material and a total of 1124 cases involving other unauthorized activities, including the unauthorized disposal of radioactive materials or discovery of uncontrolled sources.

During 2011, 147 incidents were confirmed to the ITDB. Of these, 20 involved possession and related criminal activities, 31 involved theft or loss and 96 involved other unauthorized activities. During this period, four incidents involved HEU, one of which was related to an attempted sale and three were related to other unauthorized activities. There were also seven incidents involving IAEA Category 1-3 radioactive sources², five of which were thefts. Information reported to the ITDB demonstrates that:

- The availability of unsecured nuclear and other radioactive material persists;
- Effective border control measures help to detect illicit trafficking, although effective control is not uniformly implemented at all international border points;
- Individuals and groups are prepared to engage in trafficking this material.



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Notes:

¹ An incident may be categorized in more than one group—for example the theft and subsequent attempted sale of a radioactive source. Accordingly, the sum of the incidents in the groups can differ from than the total number of incidents. In 69 cases, the reported information was not sufficient to determine the category of incident.

² The ITDB categorizes sealed radioactive sources, in accordance with IAEA Publication RS-G-1.9, from 1-5. The exposure of only a few minutes to a Category 1 source can be fatal. Category 5 sources are potentially the least dangerous; however, even these sources could give rise to doses in excess of the safe limits if not properly controlled.

Newly-declassified study says electric grid 'inherently vulnerable' to terrorist attack

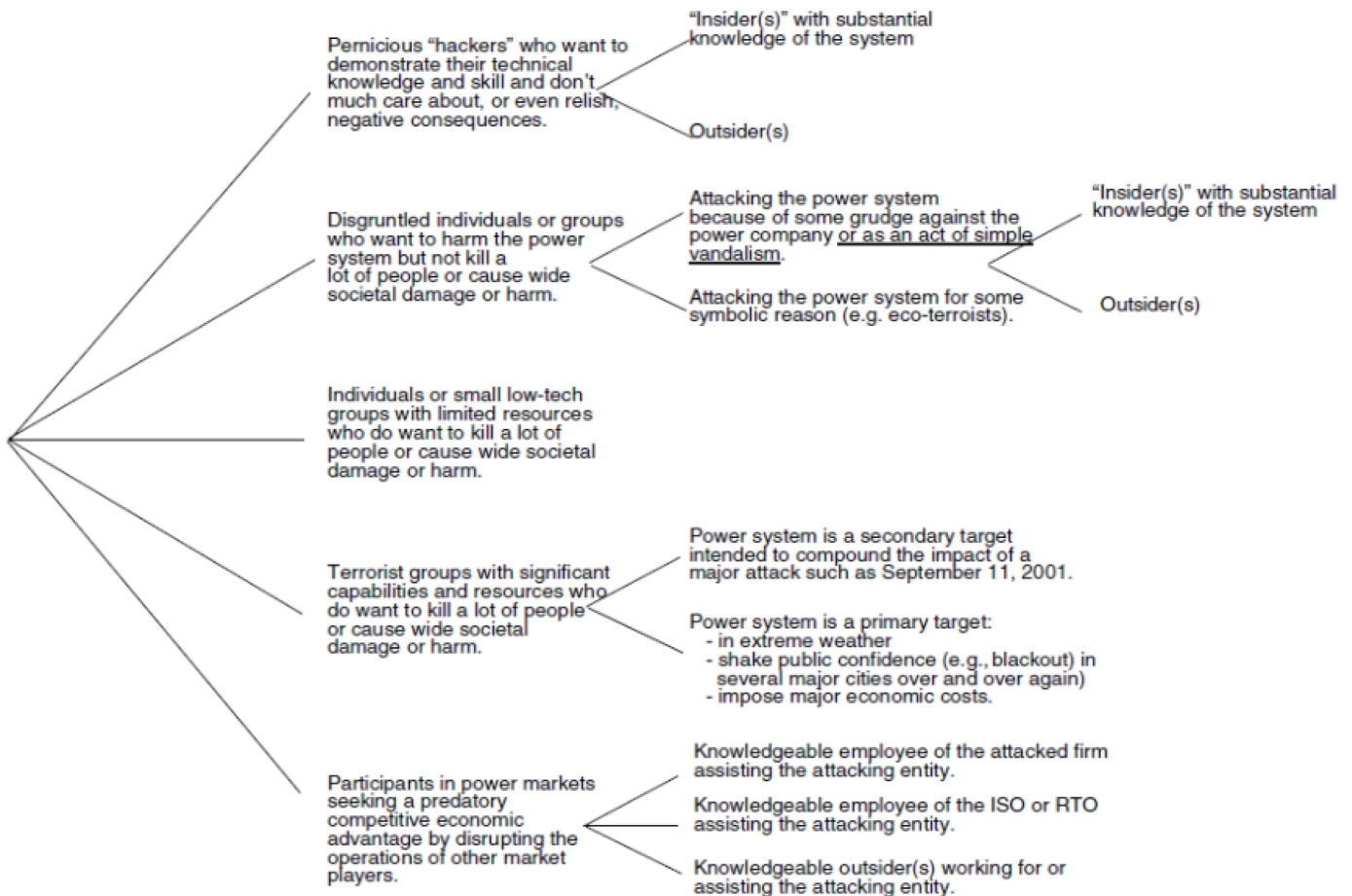
By Mark Rockwell (Washington Correspondent for Government Security News)

Source: http://www.gsnmagazine.com/node/27833?c=infrastructure_protection

A recently-declassified report says the U.S. electric power delivery system is vulnerable to

The report, released on Nov. 14 by the National Research Council (NRC), said such

THE ELECTRIC TRANSMISSION AND DISTRIBUTION SYSTEM AS A TERRORIST TARGET



terrorist attacks that could cause more damage to the system than natural disasters like Hurricane Sandy.

an attack could black out large regions of the country for weeks or months and cost billions of dollars.



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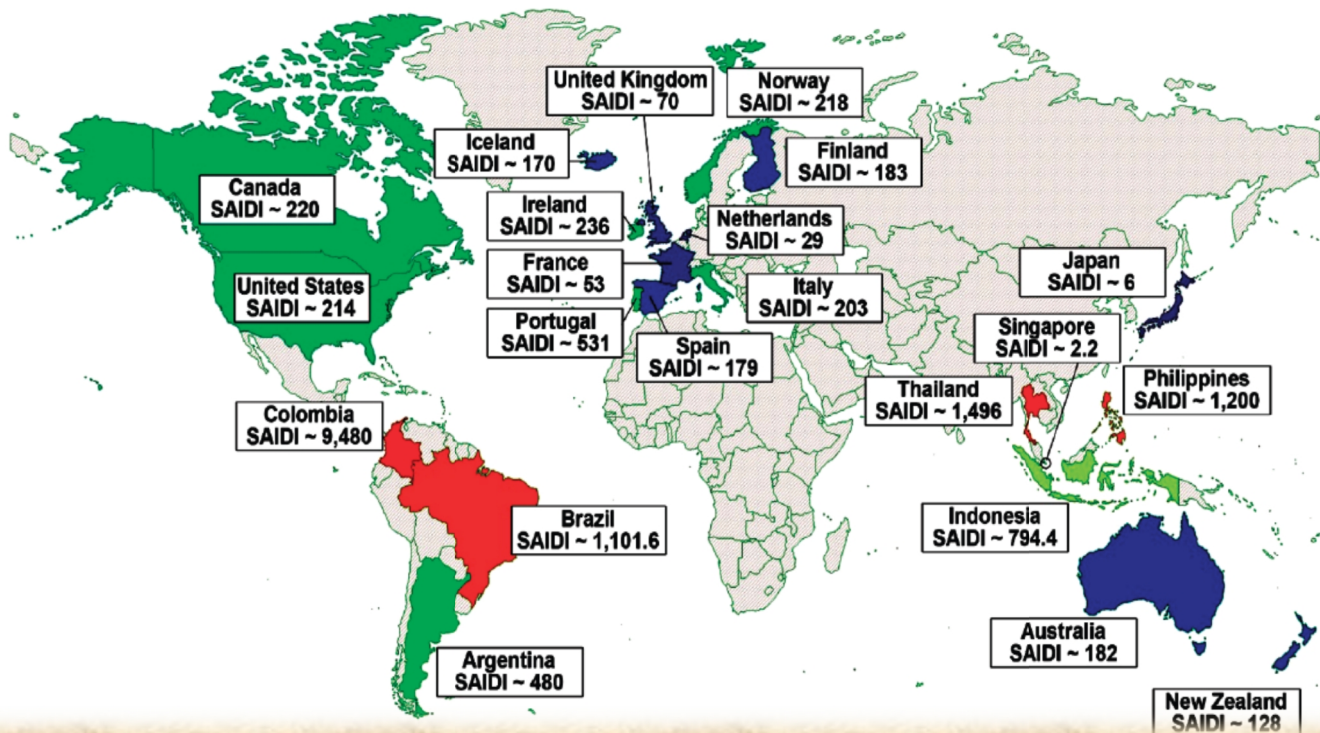
The security of the U.S. electric power system is in urgent need of attention, said the report. Its vulnerability, it said, lies in its sprawling coverage across hundreds of miles with key facilities left unguarded. Its vulnerability was further exacerbated, according to the study, by a reorganizational shift in the mid-1990's, prompted by federal legislation that introduced competition for bulk power across the country. That move resulted in the transmission network being used in ways for which it was not designed, it said, heavily stressing many parts of the bulk high-voltage system, opening up the

public release in fall 2012, said the organization.

"Power system disruptions experienced to date in the United States, be they from natural disasters or malfunctions, have had immense economic impacts," said Granger Morgan, professor and head of the department of engineering and public policy at Carnegie Mellon University, Pittsburgh, and chair of the committee that wrote the report. "Considering that a systematically designed and executed terrorist attack could cause disruptions even more widespread and of longer duration, it is

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TERRORISM AND THE ELECTRIC POWER DELIVERY SYSTEM



risk to multiple failures following an attack. Important pieces of equipment are decades old and lack improved technology for sensing and control that could help limit outages and their consequences -- not only those caused by a terrorist attack but also in the event of natural disasters, it said.

The report was completed by the NRC in the fall of 2007, but the sponsoring agency, the U.S. Department of Homeland Security, decided at that time that the report would be classified in its entirety, it said. After the NRC formally requested an updated security classification review, the report was cleared for

no stretch of the imagination to think that such attacks could produce damage costing hundreds of billions of dollars."

The report recommends ways to make the power delivery system less vulnerable to attacks, restore power faster after an attack or failure, and make critical social services less susceptible even if the delivery of conventional power is disrupted, according to the NRC. According to the study, high-voltage transformers are particularly concerning because they're vulnerable both from within and from outside the substations where they are located. The transformers are very large,



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difficult to move, often custom-built, and difficult to replace. Additionally, said the NRC, most are no longer made in the U.S., and the delivery time for new transformers could run from months to years.

The report said a new family of universal recovery transformers should be developed, manufactured, and stockpiled that would be smaller and easier to move. The recovery transformers would be less efficient than those normally operated and would only be for temporary use, but they could drastically reduce delays in restoring disabled electric power systems, it said. In line with this recommendation, the report said the Department of Homeland Security recently cooperated with the U.S. power industry on the RecX program to develop and test a recovery transformer.

Not surprisingly, the study said critical communications, sensors, and controls systems are also -- are potentially vulnerable to cyber attacks, whether through Internet connections or by direct penetration at remote sites. Cyber attacks on the systems have skyrocketed in recent years. The report said any telecommunication link that is even partially outside the control of the system operators could be an insecure pathway into operations and a threat to the grid.

Cyber security is best when connections with the outside world are eliminated, the report said. When interconnections are unavoidable, high-quality technical and managerial security systems should be in place, including systems that monitor for and help avoid operator error or intentional sabotage.

The report stated that although it isn't reasonable to expect federal support for all local and regional planning efforts, DHS and/or the U.S. Department of Energy should initiate and fund several model demonstration assessments across cities, counties, and states. The assessments, it said, should systematically examine a region's vulnerability to extended power outages and develop cost-effective strategies that can be adopted to reduce or eventually eliminate such vulnerabilities.

Building on the results of these model assessments, it recommended that DHS develop, test, and disseminate guidelines and tools to assist other cities, counties, states, and regions to conduct their own assessments and develop plans to reduce vulnerabilities to extended power outages. To facilitate these activities, public policy and legal barriers to communication and collaborative planning will need to be addressed.

► **NOTE:** *Read the full paper at Newsletter's "CBRNE-CT Papers" section*

Tetrapod robot developed for investigative, recovery work inside post-accident nuclear plants

Source: <http://www.homelandsecuritynewswire.com/dr20121125-tetrapod-robot-developed-for-investigative-recovery-work-inside-postaccident-nuclear-plants>

Toshiba Corporation last week announced that it has developed a tetrapod robot able to carry out investigative and recovery work in locations which are too risky for people to enter, such as Tokyo Electric Power Plant Fukushima No.1 Nuclear power plant.

The new robot integrates a camera and dosimeter and can investigate the condition of nuclear power plants by remote-controlled operation. The multiple joints of its legs are controlled by a dedicated movement algorithm which enables the robot to walk on uneven surfaces, avoid obstacles, and climb stairs, securing access into areas which are

challenging to be reached by wheeled robots or crawlers.

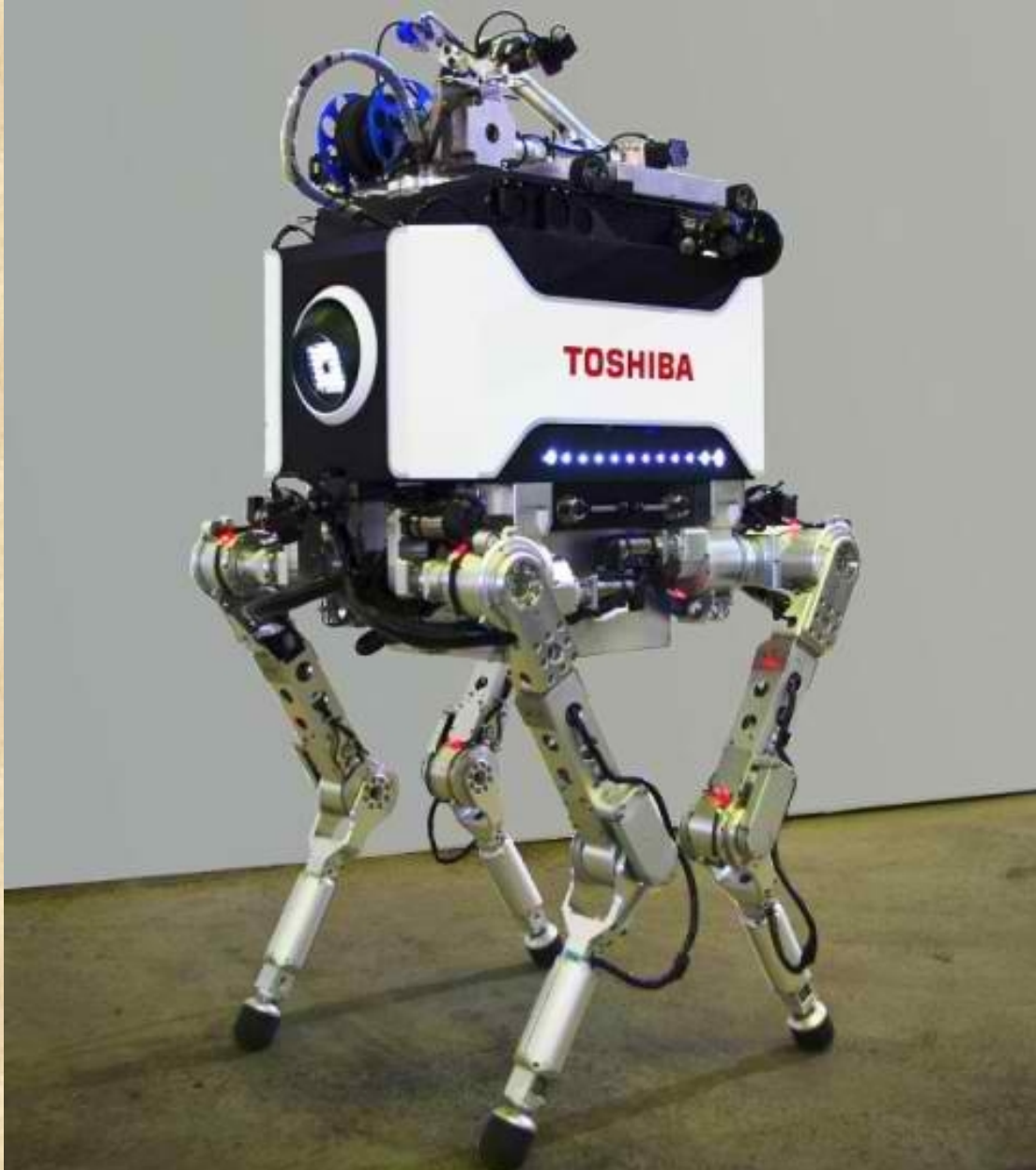
The robot also has a folding arm that can release a companion smaller robot which carries a second camera. This can be launched from the main robot and positioned to take images of narrow places and any equipment behind them, and tubes and other places which are too small for the robot to enter. It is connected to the main robot by a cable.

Toshiba says it will continue research and development on capabilities and operation of the robot so as to enable it to position and install shielding, stop flows of water and remove obstacles.



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The robot still needs some work, though. *Cnet* Technicians had to haul it off and reboot it.



reports that during a demonstration of the robot at a press event, the tetrapod took up to a minute to climb steps. While trying to balance itself, it froze with one leg in the air.

Toshiba said the machine could take up to ten minutes to figure out how to negotiate unexpected objects in its path.

More Secret Nuclear Sites Discovered in Iran

By Reza Khalili

Source: <http://www.radicalislam.org/analysis/more-secret-nuclear-sites-discovered-iran/#fm>

Just as the latest International Atomic Energy Agency report increased alarm about Iran's illicit nuclear program, now comes word that the Islamic regime has created even more secret nuclear sites.

The IAEA report indicated that not only has Iran completed installation of 2,784 centrifuges at Fordow, the previous secret site deep in a mountain believed to be immune to air strikes, but also could within days increase output of highly



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enriched uranium to the 20-percent level, well on the way to nuclear weapons.

Iran has started to feed uranium hexafluoride gas into four new cascades, increasing the number of centrifuges at Fordow from 700 to 1,400, therefore doubling its output of highly enriched uranium and cutting the time needed for having enough high-enriched material for one nuclear bomb. The regime already has enough low-enriched uranium for six nuclear bombs if further enriched.

However, according to a source within the engineering department of the Revolutionary Guards, the regime is working on its nuclear bomb program from several secret sites unknown to the world.

One such site, the source said, is in the outskirts of the small city of Shahrokhabad in Kerman Province.

Kerman, known for its deposits of copper and coal, also has uranium ore deposits, the source said, and is as high a quality as the deposits at Gachin near the city of Bandar Abbas, which the regime has long used for its yellow cake supply. The regime, with its need for yellow cake, not only has explored various sites within Iran but as far away as Venezuela and Bolivia. Both of those countries have close ties with Iran, and both have vast uranium deposits.

The new site, under the control of the Revolutionary Guards, is code-named "Fateh1." Fateh in Farsi means victorious. The site's official name is the Martyred Bahonar Training center, but it is used as a front for regime's nuclear activity. A six foot wall surrounds the site, on top of it are iron bars and on top of them barbed wires.

According to the source, the uranium ore at the new site is processed into yellow cake then converted to uranium hexafluoride, which is then fed into centrifuges to produce enriched uranium.

It is unclear at this time if the conversion of the yellow cake into uranium hexafluoride is done at the new site or sent to the Isfahan uranium conversion facility, but the source said activities at the site point to underground facilities within the site, covered with dirt or a special rolled asphalt to camouflage its activities from satellites. This is similar to what the regime has done at other sites – enriching uranium at underground facilities.

The source added that the site, surrounded by security towers and barbed wire, is under heavy Revolutionary Guard control, with

checks at the entrance and security posts within the facility.

The Guard commander of this operation, according to the source, is Col. Habibollah Sanatgar, who reports directly to the Atomic Energy Organization of Iran, headed by Fereydon Abbasi, though all coordination is under the supervision of Mohsen Fakhrizadeh-Mahabadi, the father of Iran's nuclear bomb program. The source added that another facility not far from the site is involved in plutonium work.

Peter Vincent Pry, formerly with the CIA and now executive director of the Task Force on National and Homeland Security, a congressional advisory board, regards the discovery of another Iranian underground nuclear site as ominous.

"Reliable sources in recent months appear to have disclosed two more previously unknown facilities serving Iran's nuclear program," Pry said. "Moreover, the sources have provided some credible evidence that at least one of these facilities is actively engaged in nuclear weaponization. If any of these allegations is even partially true, the whole timeline for Iran developing a nuclear weapon must be recalculated. The advent of a nuclear-armed Iran is much nearer than assumed by the Obama administration."

Pry warned that the United States cannot afford to let Iran, the leading sponsor of international terrorism, develop even a single nuclear weapon.

"The congressional EMP Commission warned that Iran could launch a nuclear-armed short-range missile off a ship to inflict an EMP (electromagnetic pulse) catastrophe on the United States using just a single warhead," Pry cautioned. "The EMP attack would collapse the national electric grid and all the critical infrastructures that support modern civilization and the lives of 300 million Americans. Iran has practiced making exactly such a ship-launched EMP attack and has openly written about making an EMP attack to eliminate the United States."

Exclusive reports by WND on Oct. 8 and Nov. 1 revealed that Iran is operating another nuclear site at which scientists are testing a neutron detonator and implosion system for a nuclear bomb as well as on a nuclear warhead design and enrichment to weaponization levels.



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The 5+1 group has requested new talks with Iran over the nuclear impasse. The Islamic regime has hinted about freezing nuclear enrichment to the 20-percent level in exchange for removal of all sanctions, guarantees on providing the country with high-enriched uranium and acceptance of the regime's full

rights to nuclear energy. Such a deal would allow the country's thousands of centrifuges to continue to enrich to the 5-percent level.

Regardless of the outcome of any further negotiations, the source said, the Islamic regime, with work at many secret sites, is very close to obtaining the bomb.

Reza Kahlili is a pseudonym for a former CIA operative in Iran's Revolutionary Guards and author of the award winning book "A Time to Betray" (Simon & Schuster, 2010). He serves on the Task Force on National and Homeland Security and the advisory board of the Foundation for Democracy in Iran (FDI).

Neutron detonator, warhead design for missile nearly completed

By Reza Kahlili

Source: <http://www.wnd.com/2012/11/secret-iran-nuclear-bomb-plant-expanding/>

Work surrounding Iran's latest secret nuclear site continues unabated, new satellite images from DigitalGlobe show.

The site – Velayat 1 – which is in the province of Isfahan on the outskirts of the small city of Najafabad, was built for research and development and has a capacity of 800 centrifuges for uranium enrichment. It already has successfully tested a neutron detonator and implosion system for a nuclear bomb.

According to the source for the exclusive WND report, research at the site includes design of a nuclear warhead for the Iranian Shahab-3 ballistic missile, which is now almost complete. The source added that there is also a nuclear reactor at the site along with a separation plant as another path to acquire a nuclear bomb.

To avoid suspicion, the site was built below a medicine factory called Abu Reyhan. The facility beneath the factory has three levels, with two underground entrances away from the facility.

This is where the father of Iran's nuclear program, Mohsen Fakhrizadeh-Mahabadi, assisted by 10 other scientists, is working on Iran's nuclear bomb program, within the SEPAND project (known by the IAEA as SPND) and under the AMAD (weapons program) to build atomic warheads.

The new images of the above-ground facility show that main buildings have been completed.

This is an image by Google Earth that dates to early 2000:



Site
several
years ago



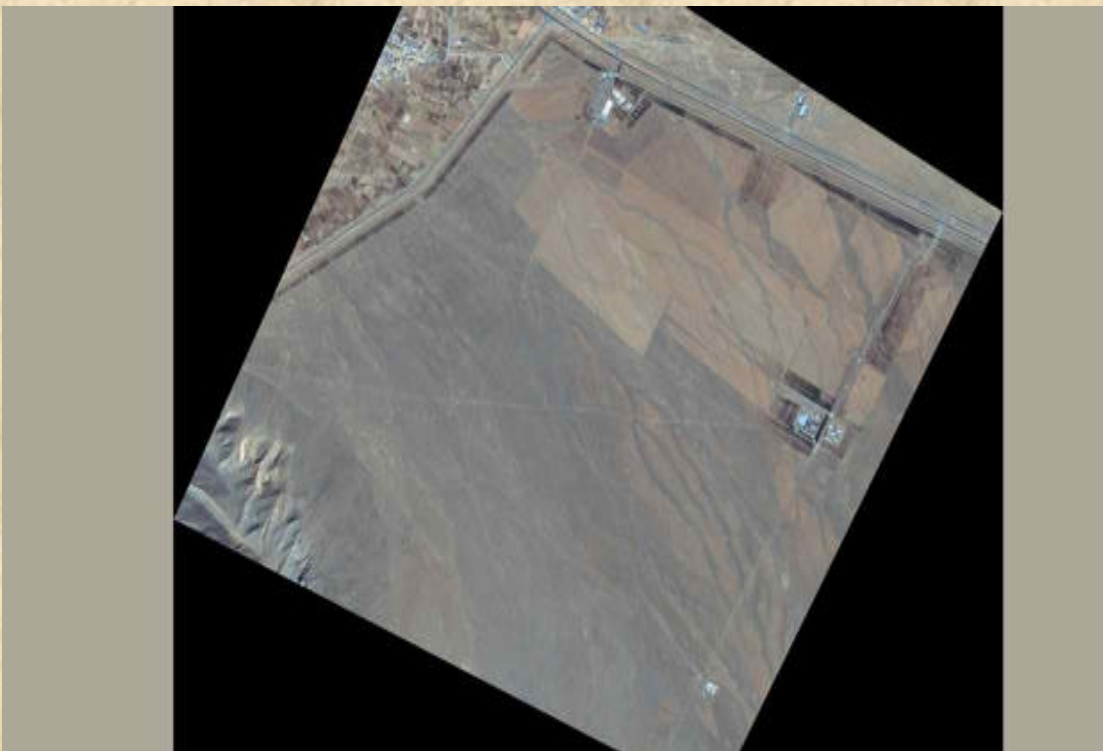
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This is a new image by DigitalGlobe of the main installation:



This year

The new images also clearly show trees planted around the site, a routine measure by the Islamic regime to hide the facility, according to a specialist on proliferation of atomic weapons who is familiar with Iran's nuclear program. The trees camouflage barbed wires surrounding the site.



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Site overview



In parts of the vast site, earth has been covered, similar to what took place at the Natanz nuclear facility, a sign of underground building.



Covered surface area



CBRNE-TERRORISM NEWSLETTER – December 2012**More covered surface area**

Other images show signs of digging and holes in the skirt of the nearby mountain which could corroborate the information about tunnels and passages underground.

**Holes in the hillside**

According to a source who has been in the underground facility, military trucks covered with tarps for disguise have transferred equipment with “radiation warning” signs to the facility. An entrance on the side of the so-called medicine factory leads to the underground facility.

Another entrance to the underground facility, according to the source, is far to the north of the “medicine factory.” Large equipment has been observed being transferred through the entrance, which is almost a third of the actual size of the factory itself.



CBRNE-TERRORISM NEWSLETTER – December 2012**Entrance 2**

One source, with knowledge of the facility, stated that equipment similar to the picture has been installed at the underground site. The source added that several of these devices were taken out of the Lavizan Shian facility back in 2003 when the IAEA found out about that site and they were brought to the new site. He also added that more advanced neutron monitoring and measurement equipment has been purchased from a European country and installed at several sites. According to someone familiar with the device, it is a neutron detector. The white cylinder is a polyethylene moderator surrounding a detector tube, a common neutron detector setup.



Device (picture for reference only)



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Peter Vincent Fry, executive director of the Task Force on National and Homeland Security, an advisory board to Congress, has experience analyzing imagery of underground facilities from his service at the CIA.

“It is difficult to ascertain the purpose of any underground facility just from imagery,” he cautioned. “We have been studying the Russian deep underground complex at Yamantau Mountain, which is the size of a small city, for years, and it is still a mystery. However, these photos of the facility in Iran have all the earmarks of an elaborate attempt to conceal an underground complex of significant size and strategic purpose by hiding it under a legitimate factory, concealing the original excavations, and elaborate and costly landscaping to screen everything from public view.

“Because an Iranian source of proven reliability claims this is a previously unknown nuclear facility, the allegation should be taken very seriously and regarded as credible,” Fry said. “Iran has a long history of successfully concealing its nuclear weapons program and nuclear facilities. What we know about is probably only the tip of the iceberg. Iran’s nuclear weapons program may well be larger, more sophisticated and more advanced than is generally suspected.”



Security post

The site operates under the control of the Revolutionary Guards to expand research and development of nuclear, plutonium and atomic warheads. Its activities include:

- Enriching uranium to weapons grade.
- Testing a neutron detonator and implosion system (chemical explosive lens). As a result of research at this facility, a test was done at Iran’s Parchin military site several months ago. After the revelation of the high-explosives experiment activity, Iran started to clean up the site but continues to stonewall on the IAEA’s request to inspect the Parchin site.
- Designing and building a nuclear warhead to arm Iran’s Shahab-3 ballistic missile.
- Separating plutonium for a plutonium implosion-type fission bomb. Iran’s heavy-water reactor near the city of Arak is nearing completion and is capable of providing spent fuel that, once processed, could produce plutonium for nuclear bombs. The separation of plutonium from fuel is an easy process requiring dual-use off-the-shelf equipment that Iran has already purchased.

The source indicated that Fakhrizadeh-Mahabadi’s atomic warhead project seeks to build three nuclear warheads in its initial phase. Tests of the implosion system and neutron generator, the source said, have been successful and the design of the nuclear warhead is nearly complete.

Reza Kahlili is a pseudonym for a former CIA operative in Iran’s Revolutionary Guards and author of the award-winning book “A Time to Betray” (Simon &



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Schuster, 2010). He serves on the Task Force on National and Homeland Security and the advisory board of the Foundation for Democracy in Iran (FDI).

► **Read also:** <http://www.wnd.com/2012/10/irans-secret-nuclear-bomb-plant-revealed/>

IAEA: Iran finished removing evidence of illicit nuclear work at Parchin

Source: <http://www.homelandsecuritynewswire.com/dr20121207-iaea-iran-finished-removing-evidence-of-illicit-nuclear-work-at-parchin>



Satellite image of Iran's nuclear trigger test site at Parchin // Source: laodong.com.vn

Yukiya Amano, director of the UN International Atomic Energy Agency (IAEA) said in a talk yesterday that his agency's inspectors had made no progress in "a yearlong effort" to determine whether Iran had conducted research and tests required to build nuclear weapons.

IAEA inspectors are scheduled to meet next week with Iranian officials in an effort to revive discussions of the military aspects of Iran's nuclear program. "We have intensified our dialogue with Iran this year, but no concrete results have been made yet," Amano said in a talk at the Council on Foreign Relations.

To build nuclear weapons, a country needs to do three things:

- *Enrich uranium to weapon-grade level, or separate plutonium from spent uranium rods.* According to the IAEA, Iran has enriched eight tons of uranium to 5 percent, and 238 kilograms of uranium to 20 percent. Iran, in short order, could enrich this uranium to weapon-grade 95 percent, meaning that it would then have enough material for five or six Hiroshima-size bombs.

Iran plans to build not only uranium-based bombs, but bombs using plutonium as well. In August the civilian reactor at Bushehr became operational, supposedly under Russian supervision. In October,



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however, the Iranian inexplicably removed fuel rods from the reactor's core. The Iranians say that the removal was done for safety reasons, and that the rods have since been returned. Whether or not the Iranian claim is true, the fact remains: Iran removed enough spent uranium from Bushehr which, if reprocessed, would yield about 220 pounds of weapon-grade plutonium – enough for about twenty-four Nagasaki-size bombs.

- *The second thing required for a bomb is a warhead design.* Iran has received different designs from Pakistan and North Korea, and its own scientists have been working on warhead designs for a decade. Note that most of the Iranian scientists killed by Israeli agents in the past half-decade were involved in the warhead design part of the operation.
- *Testing the triggering mechanism.* Creating a nuclear fusion is a demanding task, dependent on achieving a simultaneous explosion of several electronic triggers placed on the outer shell of the warhead. By "simultaneous" we mean literally "at the very sane tine" – not trigger can explode even a fraction of a nanosecond too late or the fusion would not occur.

No one has any doubt that Iran is pursuing nuclear weapons, but it is possible to want enriched uranium for civilian nuclear reactors or medical research. The sheer quantities of uranium Iran is enriching 5 percent reactor grade, however, go far beyond what a country the size of Iran would need for civilian reactors, and the medical research being done in Iran is so insignificant, that even if the few researchers engaged in such research would

need the 20 percent enriched uranium typically used in such research, they would be hard-pressed to use one-tenth of 1 percent of the 238 kg Iran has already enriched to this level – and Iran continues to enrich uranium in both categories.

The warhead design is done by small groups of engineers in secret locations, and there is no way to prove that such design work is even being done.

There is no way, however, to explain away the testing of the exquisitely precise triggering mechanism needed for a bomb because they have no other use except in a nuclear weapon. Iran has been conducting weapon-related triggering tests at a military base called Parchin, south of Tehran.

IAEA inspectors have been seeking access to Parchin, but so far have been rebuffed.

The *Los Angeles Times* reports that detailed satellite imagery shows that Iran has been engaged in a frantic effort to scrub all evidence related to nuclear weapons testing activity at the military base by demolishing buildings, removing large quantities of soil that might hold traces of illicit nuclear work, and using bulldozers to change the base's landscape .

"What we are asking in the negotiations is to have access to sites, information and people," Amano said, although experts say that by now, after months of scrubbing, there would be no evidence of testing left. .

The *Times* notes that the IAEA reported last month that Iran had added to its stockpile of medium-enriched uranium and had installed new centrifuges at two nuclear facilities. Once operational, those could double the rate of uranium enrichment.

Life of U.K. nuclear power plants extended

Source: <http://www.homelandsecuritynewswire.com/dr20121205-life-of-u-k-nuclear-power-plants-extended>



[U.K.s Hinkley Point power station to receive and extended life approval // Source: commons.wikimedia.org](#)

U.K. operator EDF Energy has announced it will extend the expected operating life of two of its nuclear power stations by seven years.

Hinkley Point B and Hunterston B power stations are now expected to remain operational until at least 2023, generating enough electricity for around two million homes. The decision follows



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the five year extensions to Heysham 1 and Hartlepool announced in 2010 and come after extensive reviews of the plants' safety cases and continuing work with the independent nuclear regulator. The company says that extending the life of the stations is good news for more than 1,500 employees and contractors at the two plants in Somerset and North Ayrshire. It will help maintain skills in the U.K. nuclear industry, and give the United Kingdom secure energy at a time when much generating capacity is due to close.

Lights out, Boeing creates the first working EMP bomb

Source: <http://vr-zone.com/articles/lights-out-boeing-creates-the-first-working-emp-bomb/18163.html>

It's official now – Boeing and the US Air Force have successfully demonstrated a working electro-magnetic pulse (EMP) device over a military compound in the Utah desert. A

The story received very little attention in the media, and a lot of us who follow science and technology research missed it – we now have a working electro-magnetic pulse (EMP) missile



spokesperson for Boeing stated, "Today we turned science fiction into science fact."

that will be used as an offensive or defensive weapon by the military. The project test was



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announced on September 22, 2012, and codenamed, the 'Counter-Electronics High Power Advanced Missile Project', or simply 'CHAMP'. This is the first time a real EMP missile has been tested with positive real world results.

For years many people felt that in order to create an EMP weapon, there might be some collateral damage involved from some form of an explosion used to create the pulse. However, this system does not make use of any explosive whatsoever, thereby resulting in zero collateral damage.

Boeing in partnership with the US Air Force Research Laboratories Directed Energy Directorate created the CHAMP weapons system, and successfully tested the system over the Utah desert on a military compound. The exact details on how the device was made will remain a secret, but we do know that it is transmitted from a missile-like device that flies over the intended target and directs its concentrated microwave energy.

Keith Coleman who serves as Boeing's CHAMP program manager in their Phantom Works division stated that the tests were conducted on a military compound set up in the Utah desert with cameras to record the very instant the device was deployed. In the video that was recently declassified and made public, one can clearly see the images of numerous desktop computers running, and then suddenly

all of them go out quickly followed by the camera going to black.

"We hit every target we wanted to - we prosecuted every one. Today we made science fiction, science fact", said Coleman. He went on to say that the EMP device not only worked well but he also implied it worked better than expected. Coleman goes on to say, "When that computer went out, when we fired, it actually took out the cameras as well. We took out everything on that. It was fantastic." Coleman further noted that this new technology would be marked as a new age for modern warfare.

James Dodd who serves as Boeing's Vice President of Military Aircraft said the device was made with troops in mind. "We know this has some capabilities and some impact", said Dodd. "So we're really trying to engage the customer and see if we can find a way to get this filled and implemented sooner than later."

Now that EMP technology is a reality and not just sci-fi, one has to fear is that it may become more of a danger to those who created it, rather than the enemy. Sure, an EMP weapon may prove useful against an enemy that are just as technologically advanced, but it will be useless against an enemy that uses fighting tactics that are not affected by an EMP weapon, much like what we see today in Afghanistan.

Greece: Red Mercury and Plutonium-241

It has been written in Greek press (Dec 9th, 2012) that national intelligence/security authorities are after a group (45yrs old Bulgarian and 2 Russians aged 37-40 yrs) trying to sell 10kg of "red mercury" (mixture of DPU and plutonium – price: 7 mil euro) and 6.7gr of Plutonium-241 (²⁴¹Pu? 10 vials – price: 600,000 euro).

EDITOR'S COMMENT: What is the purpose of such a leakage to press and internet? Especially when existing data (see below) are against (?) such possibility...

²⁴¹Pu

Source: http://www.bcz.apsl.edu.pl/13_II_BCZ/127_166_Skwarzec.pdf

"... *Plutonium radionuclides (238Pu, 239Pu, 240Pu and 241Pu) belong to the group of caused by human activity, artificial radionuclides. These nuclides are important from the radiological point of view due to their high radiotoxicity, long physical half-life, high chemical reactivity and long residence in biological system. The principal source of plutonium radionuclides in the environment is atmospheric fallout from nuclear weapon tests. Wet and dry atmospheric fallout from nuclear weapon tests is one of the most important sources of plutonium in Poland and Baltic Sea. The other sources: plutonium releases from spent fuel facilities in Sellafield (UK) and Cap de*



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la Hague (France) are less important. Since 26 April 1986 another source of plutonium isotopes, the Chernobyl-originated radioactive debris had to be taken into account.” (pp. 128-129)

Red mercury

Source: http://en.wikipedia.org/wiki/Red_mercury

Red mercury is a 19th-century term for protiodide or iodide of mercury. It was commonly recommended for use as an antisyphilitic as late as 1913 most notably during the early years of the Tuskegee Syphilis Experiments. Taken orally, it caused hematemesis. Today, it continues to be used in some countries for skin lightening, causing some cases of nephrotic syndrome.

The term was adopted in the 1970s from red mercuric iodide (mercury(II) iodide) as part of several hoax substances of uncertain composition purportedly used in the creation of nuclear bombs, as well as a variety of unrelated weapons systems. Red mercuric iodide is a poisonous, scarlet-red, odorless, tasteless powder that is insoluble in water.^[4] However, samples of "red mercury" obtained from arrested would-be terrorists invariably consisted of nothing more than various red dyes or powders of little value, which some suspect was being sold as part of a campaign intended to flush out potential nuclear smugglers. The hoax was first reported in 1979 and was commonly discussed in the media in the 1990s. Prices as high as \$1,800,000 per kilogram were reported.

History

References to red solid mercury began to appear in major Russian and western media sources in the late 1980s. The articles were never specific as to what exactly red mercury was, but nevertheless claimed it was of great importance in nuclear bombs, or that it was used in the building of boosted fission weapons. Almost as soon as the stories appeared, people started attempting to buy it. At that point the exact nature of the substance started to change, and eventually turned into anything the buyer happened to be interested in. As *New Scientist* reported in 1992, a Lawrence Livermore National Laboratory report outlined that:

When red mercury first appeared on the international black market 15 years ago, the supposedly top secret nuclear material was

'red' because it came from Russia. When it resurfaced last year in the formerly communist states of Eastern Europe it had unaccountably acquired a red colour. But then, as a report from the US Department of Energy reveals, mysterious transformations are red mercury's stock in trade.

The report, compiled by researchers at the Los Alamos National Laboratory, shows that in the hands of hoaxers and conmen, red mercury can do almost anything the aspiring Third World demagogue wants it to. You want a short cut to making an atom bomb? You want the key to Soviet ballistic missile guidance systems? Or perhaps you want the Russian alternative to the anti-radar paint on the stealth bomber? What you need is red mercury.

A key event in the history of the red mercury story was an article in the daily Russian newspaper *Pravda* in 1993. Claiming to be based on leaked top secret memos, they noted that red mercury was:

[A] super-conductive material used for producing high-precision conventional and nuclear bomb explosives, 'Stealth' surfaces and self-guided warheads. Primary end-users are major aerospace and nuclear-industry companies in the United States and France along with nations aspiring to join the nuclear club, such as South Africa, Israel, Iran, Iraq, and Libya.

Red mercury was offered for sale throughout Europe and the Middle East by Russian businessmen, who found many buyers who would pay almost anything for the substance even though they had no idea what it was.

A study for the *Bulletin of the Atomic Scientists* in 1997 has perhaps the best summary of the topic:

The asking price for red mercury ranged from \$100,000 to \$300,000 per kilogram. Sometimes the material would be irradiated or shipped in containers with radioactive symbols, perhaps to convince potential buyers of its strategic value. But samples seized by police contained only mercury(II) oxide, mercury(II) iodide,



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or mercury mixed with red dye — hardly materials of interest to weapons-makers.

Following the arrest of several men in Britain in September 2004, on suspicion that they were trying to buy a kilogram of red mercury for £300,000, the International Atomic Energy Agency made a statement dismissing claims that the substance is real. "Red mercury doesn't exist," said the spokesman. "The whole thing is a bunch of malarkey. When the case came to trial at the Old Bailey in April 2006, it became apparent that *News of the World's* "fake sheikh" Mazher Mahmood had worked with the police to catch the three men, Dominic Martins, Roque Fernandes and Abdurahman Kanyare. They were tried for "trying to set up funding or property for terrorism" and "having an article (a highly dangerous mercury based substance) for terrorism". According to the prosecutor, red mercury was believed to be a material which could cause a large explosion, possibly even a nuclear reaction, but whether or not red mercury actually existed was irrelevant to the prosecution. All three men were acquitted in July 2006.

Analysis

A variety of different items have been chemically analyzed as putative samples of "red mercury" since the substance first came to the attention of the media, but no single substance was found in these items. A sample of radioactive material was seized by German police in May 1994. This consisted of a complex mixture of elements, including about 10% by weight plutonium, with the remainder consisting of 61% mercury, 11% antimony, 6% oxygen, 2% iodine and 1.6% gallium. A formula reported for the powder component of the mixture was $\text{Hg}_6\text{Sb}_2\text{O}_8$ (mercury(II) cyclopyrorthoantimonate), with some of the mercury present in its pure metallic form. The reason why somebody had assembled this complex mixture of chemicals is unknown; equally puzzling was the presence of fragments of glass and brush bristles, suggesting that someone had dropped a bottle of this substance and then swept it up into a new container.

In contrast, an analysis reported in 1998 of a different "red mercury" sample concluded that this sample was a non-radioactive mixture of elemental mercury, water and mercury iodide, which is a red colored chemical.^[5] Similarly, another analysis of a sample recovered in

Zagreb in November 2003 reported that this item contained only mercury. One formula that had been claimed previously for red mercury was $\text{Hg}_2\text{Sb}_2\text{O}_7$ (mercury(II) pyroantimonate), but no antimony was detected in this 2003 sample.

Reports including quotes from alleged Russian scientists also presented the chemical formula $\text{Hg}_2\text{Sb}_2\text{O}_5$, which was claimed to represent mercury(II) pyroantimonite, said to occur in the form of solid salt crystals but also as a heavy liquid. Whether this is a pure form or a solution is not clear. Certain modern-day alchemists claim that they have made this substance.

Explanations

Red mercury was described by many commentators, and the exact nature of its supposed working mechanism varied widely among them. In general, however, none of these explanations appear to be scientifically or historically supportable.

Background

Traditional staged thermonuclear weapons consist of two parts, a fission "primary" and a fusion/fission "secondary". The energy released by the primary when it explodes is used to (indirectly) compress the secondary and start a fusion reaction within it. Conventional explosives are far too weak to provide the level of compression needed.

The primary is generally built as small as possible, due to the fact that the energy released by the secondary is much larger, and thus building a larger primary is generally inefficient. There is a lower limit on the size of the primary that can be built, known as the critical mass. For weapons grade plutonium, this is around 10 kg. This can be reduced through the use of neutron reflectors or clever arrangements of explosives to compress the core, but these methods generally add to the size and complexity of the resulting device.

Due to the need for a fission primary, and the difficulty of purifying weapons-grade fissile materials, the majority of arms control efforts to limit nuclear proliferation rely on the detection and control of the fissile material and the equipment needed to obtain it.

Shortcut to fissionable material

A theory popular in the mid-1990s was that red mercury facilitated the enrichment of uranium to weapons-



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grade purity. Conventionally, such enrichment is usually done with Zippe-type centrifuges, and takes several years. Red mercury was speculated to eliminate this costly and time-consuming step. Although this would not eliminate the possibility of detecting the material, it could escape detection during enrichment as the facilities hosting centrifuges normally used in this process are very large and require equipment that can be fairly easily tracked internationally. Eliminating such equipment would in theory greatly ease the construction of a clandestine nuclear weapon.

Shortcut to fusible material

A key part of the secondary in a fusion bomb is Lithium-6-deuteride. When irradiated with high-energy neutrons, Li-6 creates tritium, which mixes with the deuterium in the same mixture and fuses at a relatively low temperature. Russian weapon designers have reported (1993) that red mercury was the Soviet codename for Lithium-6, which has an affinity for mercury and tends to acquire a red colour due to mercuric impurities during its separation process.

Red mercury as a ballotechnic

Samuel T. Cohen, the "father of the neutron bomb", claimed for some time that red mercury is a powerful explosive-like chemical known as a ballotechnic. The energy released during its reaction is allegedly enough to directly compress the secondary without the need for a fission primary in a thermonuclear weapon. He claimed that he learned that the Soviet scientists perfected the use of red mercury and used it to produce a number of softball-sized pure fusion bombs weighing as little as 10 lb (4.5 kg), which he claimed were made in large numbers.

He went on to claim that the reason this is not more widely known is that elements within the US power structure are deliberately keeping it "under wraps" due to the frightening implications such a weapon would have on nuclear proliferation. Since a red mercury bomb would require no fissile material, it would seemingly be impossible to protect against its widespread proliferation given current arms control methodologies. Instead of trying to do so, they simply claim it doesn't exist, while acknowledging its existence privately. Cohen also claimed that when President Boris Yeltsin took power, he secretly authorized the sale of

red mercury on the international market, and that fake versions of it were sometimes offered to gullible buyers.

Cohen's claims appear to be difficult to support scientifically. The amount of energy released by the fission primary is thousands of times greater than that released by conventional explosives, and it appears that the "red mercury" approach would be orders of magnitude smaller than required. Furthermore, ballotechnic materials are those that do *not* explode, so it is difficult to understand how their energy could be used to produce compression at all.

Additionally, it appears there is no independent confirmation of any sort of Cohen's claims to the reality of red mercury. The scientists in charge of the labs where the material would have been made have publicly dismissed the claims (see below), as have numerous US colleagues, including Edward Teller.

According to Cohen,^[17] veteran nuclear weapon designer Dr. Frank Barnaby conducted secret interviews with Russian scientists who told him that red mercury was produced by dissolving mercury antimony oxide in mercury, heating and irradiating the resultant amalgam, and then removing the elemental mercury through evaporation. The irradiation was reportedly carried out by placing the substance inside a nuclear reactor.

Stealth paint

As mentioned earlier, one of the origins of the term "red mercury" was in the Russian newspaper *Pravda*, which claimed that red mercury was "a super-conductive material used for producing high-precision conventional and nuclear bomb explosives, 'stealth' surfaces and self-guided warheads." Any substance with these sorts of highly differing properties would be suspect by most, but the stealth story continued to have some traction long after most had dismissed the entire story.

Nuclear "sting" operations

Red Mercury is thought to be the invention of an intelligence agency or criminal gang for the purpose of deceiving terrorists and rogue states who were trying to acquire nuclear technology on the black market. One televised report indicated that the Soviet Union encouraged the KGB and GRU to arrange sting operations for the detection of those seeking to



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deal in nuclear materials. The Soviet intelligence services allegedly created a myth of the necessity of "red mercury" for the sorts of nuclear devices that terrorists and rogue governments might seek. Political entities that already had nuclear weapons did nothing to debunk the myth.

Red Mercury in southern Africa

Organisations involved in landmine clearance and unexploded munitions disposal noted a belief amongst some communities in southern Africa that Red Mercury may be found in certain types of ordnance. Attempting to extract Red Mercury, purported to be highly valuable, was reported as a motivation for people dismantling items of unexploded ordnance, and suffering death or injury as a result. In some cases it was reported that unscrupulous traders may be deliberately promoting this misconception in an effort to build a market for recovered ordnance.

Saudi Arabia

In April 2009 it was reported from Saudi Arabia that rumors that Singer sewing machines contained "red mercury" had caused the prices of such machines to massively increase in the Kingdom, with some paying up to SR 200,000 for a single machine which could previously have been bought for SR 200. Believers in the rumor claimed that the presence of red mercury in the sewing machines' needles could be detected using a mobile telephone; if the line cut off when the telephone was placed near to the needle, this supposedly proved that the substance was present.

In Medina there was a busy trade in the sewing machines, with buyers seen using mobile phones to check the machines for red mercury content, while it was reported that others had resorted to theft, with two tailors' shops in Dhulum broken into and their sewing machines stolen. At other locales, there were rumors that a Kuwait-based multinational had been buying up the Singer machines, while in Al-Jouf, the residents were led to believe that a local museum was buying up any such machines that it could find, and numerous women appeared at the museum offering to sell their Singer machines.

There was little agreement among believers in the story as to the exact nature or even color of the red mercury, while the supposed uses for it ranged from it being an essential component of

nuclear power, to having the ability to summon jinn, extract gold, or locate buried treasure and perform other forms of magic. The official spokesman for the Riyadh police said that the rumors had been started by gangs attempting to swindle people out of their money, and denied the existence of red mercury in sewing machines.

Usage in fiction

- In the 1936 novel *The Ultimate Weapon* by John W. Campbell scientists trying to harness atomic energy create a strange red crystalline substance from mercury in an experimental reactor. This red mercury becomes the key to atomic power, and while it is never specifically called "red mercury" in the story it may in fact be the source of all later speculation on the substance.
- *Red Mercury* is a 1996 novel by Max Barclay.
- *Red Mercury Blues* is the first Artie Cohen mystery written by Reggie Nadelson. Published 1995. Reissued in 2006.
- Storylines based on the sale and terrorist applications of red mercury have appeared in episodes of two BBC drama series. *Bugs* contained an episode during its second series concerning a large quantity of Red Mercury being held by international arms dealers and being traded to fictional middle-eastern factions. In the BBC thriller series *Spooks Series 3, Episode 2, "The Sleeper"*, a Nobel winning chemist is coerced into participating in an MI5 sting of a terrorist group in possession of plutonium who are seeking a short-cut to a bomb. It suggested that red mercury was a myth.
- There is a brief mention of red mercury being used as a weapon (along with "foam-phase hydrogen" warheads) in the novel *Redemption Ark*.
- Red Mercury bombs are used in the 7th Son trilogy by J.C. Hutchins.
- In the Dark Matter role-playing game, red mercury does exist, and the player characters may find themselves having to hunt down terrorists who may want to use it for weapons of mass destruction. In keeping with the conspiracy theory and unidentified flying object (UFO) themes of the game, while red mercury is indeed usable as a seemingly impossibly potent



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- nuclear fuel, it's actually originally meant to be a foodstuff for a bizarre alien race. The red mercury on Earth arrived when that species visited, and humans have been trying to duplicate it (with very limited success) since.
- The video game Warhawk also featured red mercury as a central component of its plot. In the game red mercury is an extremely powerful weapon as well as a vaguely alluded-to serum that is exploited by the primary antagonist and megalomaniac, Kreel.
 - The video game Shadow Ops: Red Mercury's plot revolves around hunting down a terrorist who controls two red mercury nuclear bombs.
 - Red mercury also plays a central role in the plot of the videogame *Splinter Cell: Double Agent*, when Emile Dufraisne, head of John Brown's Army (JBA), seeks to acquire some in order to build a bomb capable of destroying the greater NYC area.
 - In an episode of the American spy-fi television series *Alias* (#1.22, "Almost Thirty Years"), a character refers to an explosive device as a "red mercury charge with a mechanical fuse". When the device explodes later, it acts similarly to a conventional explosive such as C-4.
 - *The Nymphs of Rocky Flats*, a novel by Mario Acevedo (HarperCollins, 2006, ISBN 978006833268), uses red mercury as a MacGuffin.
 - It also appears in the thriller *Dead water Deep*, by Terence Strong: described as a "highly pure rare-earth element" it is claimed to be the basis of a "structural bond energy release" (SBER) device. This potent fictional technology ("...two kilos of the stuff give you a ten-kiloton explosion") is said to have originated in the Soviet Union.
 - Red Mercury is also used as a plot device in the novel "The Double Tap" by Stephen Leather, where an arms dealer is attempting to purchase the substance from a Russian salesman.
 - In *Scepticism Inc.*, a novel by Bo Fowler, red mercury is described as "mercury antimony oxide dissolved into mercury and then left to irradiate in a nuclear reactor for twenty days". A bomb made of red mercury is used to destroy the Sceptic Tower, headquarters of the metaphysical betting company Scepticism Inc.
 - Yet another appearance is in the thriller *Bunker 13* by Aniruddha Bahal where it is described (by a Russian mafia arms-dealer) as being in the nose of a "Swift arrow" missile, creating a "super-high-temperature blowtorch" that can burn its way through "three feet of steel armour."
 - In science-fiction stories *Samolot von Ribbentrop* (*Von Ribbentrop's plane*) and *Atomowa Ruletka* (*Nuclear Roulette*) by Polish writer Andrzej Pilipiuk, "red mercury reactors" are used as highly efficient power sources, although no further information about either the substance or said reactors is given.
 - In the last episode of *Galileo* (*Japanese television drama*), this substance is said to be "a legendary alloy that reflects 100% of neutrons" and "an urban legend among scientists". Nonetheless it's actively and covertly researched by the main character's antagonist (and seemingly successfully, as it's used to create a small bomb with enough nuclear yield to wipe out half of Tokyo).
 - Red mercury appears in the novel *Blood is Dirt*, by Robert Wilson, as a nuclear material sought by a corrupt West-African tribal chief.
 - In the season 4 premiere episode of *Criminal Minds*, called *Mayhem*, after an explosive device was used to destroy a Federal SUV, SSA Dr. Spencer Reid says, "[The device] was likely made using oxidizing agents including chromates, peroxides, perchlorates, chlorates, and red mercury all jammed into a device no larger than a cell phone."
 - The titles of three films: *Red Mercury* (film), a 2005 UK film about terrorists making a bomb; *Finish Line* (2008, released as *Red Mercury* on DVD in Australia), which purports to be on a similar subject but instead spends most of its running time on race car drivers; and an Estonian film from 2010 about small-time criminals who venture to Russia to buy a case of red mercury.
 - In the manga *Mudazumo Naki Kaikaku*, the Chernobyl meltdown was caused by a test run of a reactor that used red mercury as a neutron reflector. Some of the alloy was salvaged from the ruins afterwards.



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- Matthew Reilly's 2011 novel *Scarecrow and the Army of Thieves* includes "red uranium" as a critical part of a Soviet-era superweapon that can ignite the atmosphere.
- In the 1999 novel *Manifold: Time* by British writer Stephen Baxter, a resentful worker uses red mercury "capable of releasing hundreds of times the energy contained in the same mass of TNT" to destroy the Massachusetts Institute of Technology.
- In the season 6 episode of the original Hawaii Five-O titled "Anybody Can Build A Bomb" a nuclear blackmailer claims to have built a nuclear device and enhanced it with "red mercury". The blackmailer threatens to detonate the bomb unless he's paid a large sum of money.
- In the reboot of the Star Trek film franchise, one of the plot elements is referred to as "red matter," a substance that is able to produce artificial, fast acting black holes. The relationship between actual nuclear materials and red mercury is similar to that of antimatter and red matter.

New Detailed Data For US Nuclear Forces Counted Under New START Treaty

Source: <http://www.fas.org/blog/ssp/2012/11/newstart2012-2.php>



Air Force personnel perform New START Treaty inspection training on a Minuteman III ICBM payload section at Minot AFB in 2011. Nearly two years into the treaty, there have been few reductions of U.S. deployed strategic nuclear forces.

The U.S. State Department today released the full (unclassified) and detailed aggregate data categories for U.S. strategic nuclear forces as counted under the New START treaty. This is the fourth batch of data published since the treaty entered into force in February 2011. Although the new data shows a reduction compared with previous releases, a closer reading of the documents indicates that changes are due to adjustments of delivery

vehicles in overhaul at any given time and elimination on so-called phantom platforms, that is aircraft that carry equipment that make them accountable under the treaty even though they are no longer assigned a nuclear mission. Actual reduction of deployed nuclear delivery vehicles has yet to occur.

The joint U.S.-Russian aggregate data and the full U.S. categories of data are released at different times



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and not all information is made readily available on the Internet.

Overall U.S. Posture

The data attributes 1,722 warheads to 806 deployed ICBMs, SLBMs, and heavy bombers as of September 1, 2012. This is a reduction of 15 deployed warheads and 6 deployed delivery vehicles compared with the previous data set from March 2012.

A large number of non-deployed missiles and launchers that could be deployed are not attributed warheads.

The data shows that the United States will have to eliminate 234 launchers over the next six years to be in compliance with the treaty limit of 800 deployed and non-deployed launchers by 2018. Fifty-six of these will come from reducing the number of launch tubes per SSBN from 24 to 20, roughly 80 from stripping B-52Gs and nearly half of the B-52Hs of their nuclear capability, and destroying about 100 old ICBM silos.

The released data does not contain a breakdown of how the 1,722 deployed warheads are distributed across the three legs

nuclear weapons in the U.S. arsenal – only about a third. The total military stockpile is just under 5,000 warheads, with several thousand additional retired (but still intact) warheads awaiting dismantlement.

Ballistic Missile Submarines

The New START data shows that the United States as of September 1, 2012, had 239 Trident II SLBMs onboard its SSBN fleet, a reduction of three compared with March 2012.

	Bangor		Kings Bay		Total		Estimated Warheads
	Launchers	SLBMs	Launchers	SLBMs	Launchers	SLBMs	
Deployed	136 (5) ^b	136	103 (4)	103	239 (9)	239	1,140
Non-deployed	56 (2)	68	41 (1)	107	97 (4)	180 ^c	
Total	192 (8)	204	144 (6)	210	336 (14)	424^c	

^a As of September 1, 2012, according to the U.S. New START aggregate numbers.
^b The numbers in parenthesis show the corresponding number of 24-tube SSBNs.
^c The row does not add up because the total also includes five non-deployed SLBMs at the Trident production facility in Utah.

That is only enough to fill nine SSBNs to capacity, but it doesn't reflect an actual reduction of SLBMs or SSBNs but a fluctuation in the number of SLBMs onboard SSBNs during overhaul. Each SSBN has 24 missile tubes for a maximum loadout of 288 missiles (48 tubes on two SSBNs in overhaul are not counted), but at the time of the New START

count it appears that two or three of the 14 SSBNs were empty (including the two in refueling overhaul) and two or three were only partially loaded (in missile loadout).

It is widely assumed that 12 out of 14

SSBNs normally are deployable, but the various sets of aggregate data all indicate that the force ready for deployment at any given time may be closer to 10. This ratio can fluctuate significantly and in average 64 percent (8-9) of the SSBNs are at sea with roughly 920 warheads. Up to five of those subs are on alert with 120 missiles carrying an estimated 540 warheads – enough to obliterate every major city on the face of the earth.

	Land-Leg		Sea-Leg		Air-Leg		Total		Attributed Warheads
	Launchers	ICBMs	Launchers	SLBMs	Launchers	Launchers	Missiles		
Deployed	449	449	239	239	118	806	688	1722	
Non-deployed	57	263 ^b	97	180	23	177	443		
Total	506	712	336	419	141	983	1131		

^a As of September 1, 2012, according to the U.S. New START aggregate numbers.
^b An additional 58 retired MX ICBMs are not included in this count.

of the Triad. But because the bomber number is disclosed and each bomber counts as one warhead, and because 450-500 warheads remain on the ICBMs (downloading to one warhead per ICBM was scheduled to resume in 2012), it appears that the deployed SLBMs carry 1,104 to 1,154 warheads, or more than two-thirds of the total number of warheads counted by New START.

Just to remind readers: the New START numbers do not represent the total number of



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Of the eight SSBNs based at Bangor (Kitsap) Submarine Base in Washington, the data indicates that three were out of commission on September 1, 2012: one had empty missile tubes (possibly because it was in dry dock) and two others were only partially loaded. This means that five SSBNs from the base were fully loaded and probably deployed with 120 Trident II D5 missiles carrying some 540 warheads at the time of the New START count.

For the six SSBNs based at Kings Bay Submarine Base in Georgia, the New START data shows that 103 missiles were counted as deployed on September 1, 2012. That number is enough to load four SSBNs, with two other SSBNs only partially loaded. The four deployed SSBNs probably carried 96 Trident II SLBMs with some 430 warheads.

Intercontinental Ballistic Missiles

The New START data shows that the United States deployed 449 Minuteman III ICBMs as

FY2012, but a completion has not been announced. The warhead number is 450-500.

	B-2A	B-52G	B-52H	Total
Deployed	10	30 ^b	78	118
Non-deployed	10	0	13	23
Test aircraft	(1) ^c	0	(2) ^c	(3) ^c
Total	20	30	91	141

^a As of September 1, 2012, according to the U.S. New START aggregate numbers. Note: the treaty only counts nuclear-capable aircraft.
^b The retired B-52G is neither nuclear-capable nor deployed but nonetheless counted as such under the treaty. All B-52Gs are stored at Davis-Monthan AFB in
^c Test aircraft are considered non-deployed aircraft.

The 2010 NPR decided to “de-MIRV” the ICBM force, an unfortunately choice of words because the force will retain the capability to re-MIRV if necessary.

Heavy Bombers

The New START data shows that the U.S. Air Force possessed 141 B-2 and B-52 nuclear-capable heavy bombers as of September 1, 2012. Of these, 118 were counted as deployed, a reduction of four compared with March 2012. The data shows that only half of the B-2 stealth bombers are deployed.

Unfortunately the bomber data is misleading because it counts 30 retired B-52G bombers stored at Davis-Monthan AFB in Arizona as “deployed” at Minot AFB in North Dakota. The mischaracterization is the result of a counting rule in the treaty, which says that bombers can only be deployed at certain bases. As a result, the 30 retired B-52Gs are listed in the treaty as deployed at

	Malmstrom	Minot	F.E. Warren	Total	Estimated Warheads
Deployed	150	150	149	449	500 ^b
Non-deployed (Peacekeeper)	1	1	2	263 ^c (58)	
Total	151	151	151	712^c	

^a As of September 1, 2012, according to the U.S. New START aggregate numbers.
^b Downloading to 450 warheads was scheduled to begin in 2012, but completion has not been announced.
^c The row does not add up because it includes non-deployed missiles stored at other facilities. The 58 retired MX missiles that are not counted in the total.

of September 1, 2012, the same number that was deployed in March 2012. Most were at the three launch bases, but a significant number (321) were at maintenance and storage facilities in Utah. That included 58 MX Peacekeeper ICBMs retired in 2003-2005 but which have not been destroyed.

The New START data does not show how many warheads were loaded on the 449 deployed ICBMs. Downloading to single warhead loading was scheduled to begin in

Minot AFB – even though there are no B-52Gs at that base. According to Air Force Global Strike Command, “There are no B-52Gs at Minot AFB, N.D...In accordance with accounting requirements, we have them assigned to Minot and as visiting Davis-Monthan.” The actual number of deployed heavy bombers should more accurately be listed as 88 B-2A and B-52H, with another 53 non-deployed (including the 30 at Davis Monthan AFB.



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All of these bombers carry equipment that makes them accountable under New START, but only a portion of them are actually involved in the nuclear mission. Of the 20 B-2s and 91 B-52Hs in the Air Force inventory, 18 and 76, respectively, are nuclear-capable, but only 60 of those (16 B-2s and 44 B-52Hs) are thought to be nuclear tasked at any given time. None of the aircraft are loaded with nuclear weapons under normal circumstances but are attributed a fake count under New START of only one nuclear weapon per aircraft even though each B-2 and B-52H can carry up to 16 and 20 nuclear weapons, respectively. Roughly 1,000 nuclear bombs and cruise missiles are in storage for use by these bombers. Stripping excess B-52Hs and the remaining B-52Gs of their nuclear equipment will be necessary to get down to 60 counted nuclear bombers by 2018.

Conclusions and Recommendations

The New START data released by the State Department continues the decision made last year to release the full U.S. unclassified

aggregate numbers, an important policy that benefits international nuclear transparency and counters misunderstandings and rumors.

The latest data set shows that the U.S. reduction of deployed strategic nuclear forces over the past six months has been very modest: 6 delivery vehicles and 15 warheads. The reduction is so modest that it probably reflects fluctuations in the number of deployed weapon systems in overhaul at any given time. Indeed, while there have been some reductions of non-deployed and retired weapon systems, there is no indication from the new data that the United States has yet begun to reduce its deployed strategic nuclear forces under the New START treaty.

Those reductions will come slowly over the next five-six years to meet the treaty limits of 1,550 deployed strategic warheads and 800 deployed and non-deployed strategic delivery vehicles by February 2018. But almost two years after the New START treaty entered into force, it is clear that the Pentagon is not in a hurry to implement it.

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New, quick way to ID people exposed to dirty bomb, radioactive radiation

Source: <http://www.homelandsecuritynewswire.com/dr20121218-new-quick-way-to-id-people-exposed-to-dirty-bomb-radioactive-radiation>

There is a reason emergency personnel train for the aftermath of a dirty bomb or an explosion at a nuclear power plant. They will be faced with a deluge of urgent tasks, such as identifying who has been irradiated, who has an injury-induced infection, and who is suffering from both.

Unfortunately, there is no quick way to screen for people exposed to dangerous levels of radiation.

There also is no quick way to distinguish between people suffering from radiation exposure versus an infection due to an injury or chemical exposure.

The most common way to measure exposure is a blood assay that tracks chromosomal changes. Another approach is to watch for the onset of physical symptoms. These methods, however, can take several days to provide

results, which is far too late to identify people who would benefit from immediate treatment.

A much faster way could be coming. A Berkeley Lab release reports that research conducted by scientists from the U.S. Department of Energy’s Lawrence Berkeley National Laboratory (Berkeley Lab) could lead to a blood test that detects if a person has been exposed to radiation, measures their dose, and separates people suffering from inflammation injuries — all in a matter of hours. The scientists identified eight DNA-repair genes in human blood whose expression responses change more than twofold soon after blood is exposed to radiation. They also learned how these genes respond when blood is exposed to inflammation stress, which can occur because of an injury or infection. Inflammation can mimic



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the effects of radiation and lead to false diagnoses.

The result is a panel of biochemical markers that can discriminate between blood samples exposed to radiation, inflammation, or both. The scientists believe these markers could be incorporated into a blood test that quickly triages people involved in radiation-related incidents.

They report their research in a paper recently published online in the journal *PLOS ONE*.

“In an emergency involving radiation exposure, it’s likely that only a small fraction of all possibly exposed people will be exposed to high doses that require immediate medical attention,” says Andy Wyrobek of Berkeley Lab’s Life Sciences Division. “The goal is to quickly screen for these people so they can get treatment, and avoid overwhelming medical facilities with the larger number of people exposed to low levels of radiation with no immediate medical needs. Our research could lead to a blood test that enables this.”

Wyrobek conducted the research with fellow Berkeley Lab scientists Helen Budworth and Antoine Snijders, as well as several other scientists from Berkeley Lab and other institutions.

Because DNA is one of the major targets of radiation, the Berkeley Lab scientists began their research by focusing on forty genes that regulate the expression of proteins that carry out DNA-repair tasks. They studied these genes in blood samples taken from healthy people before and after exposing the samples to 2 Gray of X-rays per year, which is about the radiation dose received by radiotherapy patients. They found twelve genes that

underwent more than a twofold change in response after exposure. From these, they isolated eight genes that had no overlap between unirradiated and irradiated samples.

The scientists also treated the blood samples with a compound that mimics inflammatory stress. This enabled them to account for gene-expression responses that could be mistaken for signs of radiation exposure, but which are actually caused by injury or infection. In addition, they irradiated a portion of these samples to learn how the genes respond to both inflammation and radiation.

To validate their findings, the scientists analyzed a separate dataset of blood samples that had also been irradiated. They found a close match between their own data and the independent dataset in how the eight genes respond after radiation exposure.

They also compared their findings to a large group of bone marrow transplant patients who received total-body radiation. Again, they found a close match between their data and the gene-expression responses of the patients after they received treatment.

More work is needed, but Wyrobek envisions a blood test using their biochemical markers could be administered via a handheld device similar to what diabetes patients use to check their blood sugar. The test could help emergency personnel quickly identify people exposed to high radiation doses who need immediate care, and people exposed to lower doses who only need long-term monitoring.

The research was funded largely by the Department of Health and Human Services’ Biomedical Advanced Research and Development Authority.

— *Read more in Helen Budworth, “DNA Repair and Cell Cycle Biomarkers of Radiation Exposure and Inflammation Stress in Human Blood,” PLoS ONE 7, no. 11 (7 November 2012)*

