



Trust and Verify

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Soviet nuclear warheads to Iran?

A report in *The European* on 1st May 1992 says that Iran has obtained at least two nuclear warheads from the Semipalatinsk nuclear base in Kazakhstan. The Report is based on a document allegedly from the Russian Intelligence Service in which it informs the CIA of the proliferation. If the report is true it is likely that the warheads are some of the 10,000 tactical nuclear weapons that were spread throughout the former Soviet Union, and that they are nuclear shells with a destructive capability of some 2-5kt and a range of up to 50 km. It is unlikely that Iran would have the launch codes but Iranian scientists may be capable of dismantling the warheads and copying the design.

The document alleges that the warheads were smuggled from Kazakhstan into Iran during 1991 and are now under the control of Reza Amrollahi, head of the Iranian Organisation for Atomic Energy. European intelligence sources believe that Kazakhstan's President Nazarbayev was responsible for secretly transferring the warheads in return for hard cash. The Russian report to the CIA says that another warhead from the same base is missing and is thought to be in the Middle East. The report also says that missiles, probably conventional 300km Scuds, have been transferred to Iran.

At the end of April, Kazakhstan was the only one of the four former Soviet republics with strategic nuclear weapons on their territories that was refused US aid for the dismantling of nuclear weapons and for retraining nuclear scientists. The Bush administration is blacklisting the republic because it says Kazakhstan has not met relevant criteria and still has nuclear ambitions.

VERTIC Climate Change Report

VERTIC has just published a new 17 page report by John Lanchbery, the organisation's Environmental Project Director, and Owen Greene of Bradford University, entitled "Verification Issues and the Framework Convention on Climate Change".

The report establishes the need for rapid and serious consideration of the verifiability of the Framework Convention on Climate Change which it is hoped to agree at UNCED in June. It also considers which verification measures have the best chance of success and how their implementation might be institutionalised. Although there is now little chance that the Framework Convention on Climate Change will include provisions for verification, there is a strong case for their inclusion in subsequent protocols. The Framework Convention is designed to act as a true framework to which subsequent agreements can be added. The VERTIC report recommends that if protocols to the Convention are to be verified, it would be best to consider how to do so now, well before detailed negotiations begin.

The report's starting point is that little work has yet been done on the verification of a treaty designed to limit greenhouse gas emissions, in the way that the FCCC will seek to do. It points out that verification is both necessary (if the FCCC is to have credibility and encourage adherents) and feasible, using existing monitoring methods and data collection procedures. A regime is needed which will be able to monitor national greenhouse gas emissions of signatory states. Some states will need both technical and financial aid to fulfil their obligations under the Convention.

The report categorises anthropogenic greenhouse gas emission sources into different sectors and then assesses how well limitations on each sector could be verified. Emissions from the Energy Sector (due to fossil fuel burning, CFCs and cement manufacture) make up some 66% of the probable contribution by these gases to global warming over the next century. Some 80% or 90% of emissions from this Sector could be indirectly monitored with reasonable accuracy. Greenhouse gas emissions from the Agriculture sector could in principle be monitored but monitoring problems and political factors make it unlikely that this sector will be stipulated as an area for verification under the FCCC or its protocols. The best way to verify compliance with emission limitations on the Forest sector would probably be to preserve agreed areas of forest, rather than attempt to quantify emission data. It would probably only be financially feasible for some 2.5% of the emissions from the Drilling, Mining and Landfill Sector to be monitored.

The most easily monitored Sectors, and therefore the most likely candidates for a verification regime for the FCCC or its protocols, would be the Energy and Forest Sectors. These Sectors represent 75% of the global warming potential of all the human-made emissions. If appropriate steps were taken, implementation of the verification regime could take place within a few years.

The structures proposed for the FCCC are a Conference of the Parties, an Executive Committee, and a Secretariat along with a Science Committee and an Implementation Committee. This last would provide information and advice to Parties on how to implement the agreement and would also facilitate information-exchange, technology transfer and aid, and perform confidence-building and verification functions. The IAEA could prove a useful model in some respects.

It is suggested that an independent body of technical experts attached to the Implementation Committee examines and reviews the data in national reports, and that the Committee be empowered to make requests for more information, and to initiate inspections when necessary. It would be crucial that the Committee be seen to operate in a politically independent fashion. After approval by the independent body, national reports would go to the Conference of the Parties for final review. As the Convention will be based on "Pledge and Review" processes, unilateral and informal agreements could bolster the multilateral FCCC; pilot

schemes, for example, would be one example of constructive unilateralism. Ideally, verification of unilateral commitments would also be institutionalised.

The new report has been distributed to delegates and observers at the Intergovernmental Negotiating Committee in New York (30th April - 8th May), and is also available from the VERTIC office for £5 (post free). A further report, amended in light of the final INC meeting, will be prepared for publication in time for the Rio Conference in June, where John Lanchbery will be among the many NGO observers in attendance.

Nuclear Testing

The French decision, announced on April 8th, to stop nuclear testing during the remainder of 1992 means that two of the five declared nuclear powers, Russia and France, are now observing moratoria. The French announcement may influence Yeltsin. There had been reports (See *Trust and Verify* No. 26) that Yeltsin had decreed preparations for possible testing again at Novaya Zemlya once the year-long moratorium announced by Gorbachev in October 1991 (and continued by Yeltsin) ended in October 1992. Russia has not conducted a test since late 1989. On 11th April Yeltsin sent a message to President Mitterand congratulating his decision to similarly embrace a moratorium on testing and making no indication that Russia might be contemplating a resumption of its own testing. (French Embassy extract from an interview with President Mitterand, broadcast on TF1, Paris, 12th April 1992).

The French declaration has focused attention again on the broader issues surrounding nuclear tests and in particular the prospects for a Comprehensive Test Ban Treaty. The US and the UK have responded to the French move by saying that they intend to test in the future when they regard it as necessary. China's response is still awaited.

A new report by the Programme for Promoting Nuclear Non-proliferation titled "The NPT and the CTBT: an inextricable relationship?" provides a useful overview of the major issues surrounding a CTBT, and the CTBT/NPT 'linkage' debate. The report states "The key effects of a nuclear explosive testing ban in 1992 would be to make maintenance and 'modernisation' of existing nuclear arsenals more difficult and expensive, and to make it impossible for a potential proliferator to move rapidly to a stockpile of thermonuclear weapons" (p2). In addition "a CTBT is the price the nuclear weapon states may have to pay for a consensus decision on a lengthy extension of the NPT in 1995" (p2), though "calls to link extension of the NPT to a CTBT are... likely to be less prominent and effective in 1995 than might have been anticipated in 1990 (since a CTBT) would not provide a technical solution to either the continued existence of nuclear weapons or the prevention of nuclear proliferation. However these technical considerations need to be evaluated alongside the political symbolism of a CTBT within the nuclear non-proliferation regime" (p6).

The report evaluates the different rationales put forward by proponents of continued nuclear testing. These include maintenance of safety and reliability of current stockpiles; tailoring warheads to delivery systems; evaluating nuclear weapons effects; maintaining nuclear elite expertise; and guarding against unforeseen technological breakthrough. The report concludes after examination of each in turn that none provides conclusive evidence of a need for continued nuclear testing, and that alternatives appear to exist in all cases.

Some verification aspects of a CTBT are mentioned. The monitoring of the PTBT by national technical

means, for example, has provided an effective verification basis for atmospheric and underwater testing and international inspection of space launches could dispel fears of deep space tests. Nuclear explosions below a 1-10kt range may test the limits of current technical detection abilities but a world-wide network of automatic seismic monitoring stations based on global test sites and technical improvements in seismic monitors and satellites should improve these detection abilities still further. However, detailed consideration of a CTBT verification system is still needed.

The report also considers different routes by which a CTBT could be achieved, for example incrementally or directly. Incremental steps might include voluntary moratoria, reducing testing yields or numbers of tests annually, and regional testing bans. The direct route could involve a time-limited CTBT with further extension conditional on accession of relevant parties, or a simultaneous signing by all relevant parties.

The 12 page report (ISBN 0085432 4364) is available from The Mountbatten Centre for International Studies, Department of Politics, University of Southampton, Southampton, SO9 5NH, UK. (Tel: +44 - 703 - 5925 22. Fax: +44 - 703 - 593 533. Write to John Simpson. Price not stated.

Algeria's Oussera complex

VERTIC research consultant Vipin Gupta has had an article published in the April issue of *International Defence Review* on the subject of 'Algeria's Nuclear Ambitions'. The article updates what is known about both the history and the current state of development of Algeria's Oussera nuclear complex 125 km south of Algiers.

A year ago in May 1991 the Chinese and the Algerians finally admitted that the Chinese had supplied a heavy-water nuclear reactor to Algeria. China said that the Oussera reactor export contract dated back to February 1983, a year before it joined the IAEA promising that future nuclear technology exports would adhere to IAEA guidelines. The 1MW reactor that Argentina supplied to Algeria under IAEA safeguards in 1987 seems to have served to deflect attention from construction of the Oussera complex, which Argentina did not know about.

China and Algeria say that the Oussera reactor will produce 15MW of thermal power. With the appropriate nuclear facilities three kg of plutonium per year might be extractable from such a reactor: theoretically sufficient for a nuclear weapon every three years. The presence of certain features within the complex and in the surrounding region has caused suspicions that Algeria does have nuclear ambitions. These suspicions have been stoked by allegations which emerged in late 1991 that Iraq had been co-operating with Algeria on nuclear research and had clandestinely smuggled 10 tons of natural uranium into that country.

Satellites have played a crucial role in bringing the Oussera complex to light and have continued to provide important information about developments there. (Gupta points out, however, that the complex did escape attention for eight years.) Satellite information has revealed considerable evidence that the complex has military significance and may be nearly completed. It is situated near a railway line, a road to Algiers, and water sources. At a military airfield 25 km away, two hardened runways appear to be operational; these could be used to land heavy-lift transport aircraft. The airfield itself would provide defence against attack and satellite imagery appears to show that there may also be Soviet SA-5 missile sites in the region. The

ploughed security zone surrounding the complex indicates ground sensors and/or mines.

On 27 February 1992 Algeria (though not legally obliged to do so since it is not a signatory of the NPT) signed an agreement with the IAEA allowing partial inspection of at least some components of the Oussera complex. It will permit inspection of the reactor, nuclear fuel and the heavy water to ensure that none are being diverted to help a nuclear weapons programme. Two IAEA inspectors had already gone twice to Oussera in January 1992. These developments are positive but have not entirely quelled suspicions about Algeria's nuclear intentions.

Gupta makes a number of recommendations:

- ⊙ Future on-site inspections at Oussera should be numerous and conducted on a random basis. Full access to all facilities should be allowed.
- ⊙ Spent reactor fuel should be shipped back to China.
- ⊙ The IAEA should independently verify the capabilities of the reactor and associated facilities.
- ⊙ The IAEA should monitor the scientists and other personnel working at and using the complex. IAEA inspections in Iraq found such records very informative in gauging nuclear ambitions.
- ⊙ China's claim that the reactor export to Algeria predated its joining the IAEA needs further investigation.
- ⊙ Algeria should be strongly encouraged to drop any work on a nuclear weapons programme, and to join the NPT.
- ⊙ Although Algeria has not yet signed the NPT and therefore is not legally obliged to abstain from nuclear weapons development, if it appears that the Oussera complex is indeed being used to help develop nuclear weapons, sanctions should be applied.

In The News

Open Skies

More information has been published about the Open Skies Treaty, which was signed on March 24th in Helsinki by 25 states (not yet including most former Soviet Union states and some European neutrals). The bulk of the overflights so far requested come from Eastern Europe and the former Soviet Union. Russia/Belarus is scheduled to make by far the most number of flights, 26, but is also scheduled to receive the most, 28. The US quota for Year One, in contrast, is 42 flights – but it is scheduled to receive only four.

The radar resolution permitted under the Treaty is 3 metres, which is sufficient for identifying a tank, for example, but not for determining which type of tank it is. Any Open Skies signatory will be able to acquire copies of film or tapes made during a flight but will have to interpret the raw data themselves. During the negotiations the US had opposed both the establishment of a central data bank which European negotiators had wanted, and any explicit linking of Open Skies as the basis of a verification regime for the CFE Treaty, apparently because it does not consider that Open Skies has powerful enough verification

'teeth'. The preamble to the Treaty does, however, say that Open Skies could "facilitate the monitoring of compliance with existing or future arms control agreements". (Information from *Defense News*, April 6-12 1992).

Ukraine

The apparent reversal of Ukraine's halt in the transferral process of its tactical nuclear weapons to Russia is in question after the deputy chairman of the Ukrainian parliament's defence committee said "we will not ship them to Russia until there is a system of international verification for their destruction. Such a system would require western and Ukrainian participation". The Russian Foreign Office confirmed that no more weapons had in fact been transferred to Russia.

If tensions continue between Russia and Ukraine, both the CFE and START agreements could be jeopardised. The proposed CSCE summit in July could collapse if states from the former Soviet Union cannot agree on their respective equipment holdings. Similarly the allocation of START reductions among these states is also in dispute.

North Korea

There were draft agreements at the first meeting of the North-South Military Committee on a joint military commission and telephone hotlines. IAEA inspectors went to Nyonphyon nuclear research facility near Pyongyang at the end of March but did not go to the Yongbyon suspect nuclear site. On April 9th the North Korean parliament ratified an agreement with the IAEA to open the country's nuclear facilities to inspection but the timescale is not clear. North Korea has released a video about three of its nuclear reactors – only two were previously known to Western intelligence. Choe Chong Sun, head of the Foreign Affairs Bureau of the Atomic Energy Ministry, says that these three reactors will be open to international inspection. The North Koreans say the 'new' reactor is Korean-built, was opened in 1986 and is a 5 MW plant. It would therefore appear to be a different reactor from the small Soviet-built reactor which has been operating under IAEA safeguards since 1965.

In the US Senate some weeks ago Richard Clarke, US Assistant Secretary of State for Politico-Military Affairs, described North Korea as the world's foremost missile proliferator and said it was selling three missiles: the original Scud, the extended-range Scud-C and a new missile called the No-Dong 1. This last was tested (unsuccessfully) in June 1991 and would have a range of over 1,000 km when fully developed; it would therefore be able to target anywhere in South Korea or Western Japan. It is thought to be capable of carrying a 6kt nuclear warhead. This weapon could be seriously destabilising if sold to the Middle East.

Iraq

UN weapons experts say they have verified Iraq's claims to have destroyed some 25,000 chemical weapons on its own and without UN supervision. A new UN report says the claim has been verified "within acceptable margin of error".

Voluntary Subscriptions

The production of this bulletin entails considerable cost to VERTIC so we would welcome a subscription of £12 (individual) or £20 (organisation) for a year's issues. Thank you to those who have sent a subscription. Anyone wishing to contribute information for inclusion in *Trust and Verify* should send it to the VERTIC office.

What is VERTIC?

VERTIC is an independent organisation aiming to research and provide information on the role of verification technology and methods in present and future arms control and environmental agreements. VERTIC coordinates six working groups comprising 21 UK consultants and 11 overseas advisors. VERTIC is the major source of information on verification for scientists, policy makers and the press. VERTIC is funded primarily by grants from foundations and trusts and its independence is monitored by an Oversight and Advisory Committee.

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