

CHINA

Date of first nuclear explosion- 16 October 1964

1. AMOUNT, LOCATION AND OPERATIONAL PLAN OF NUCLEAR WEAPONS

Strategic Weapons

Missile	Range	Description	Number (warheads)
Dong Feng (DF)-3A	2,800 km	Slated for retirement	40
DF-4	4,750 km	Two-stage, liquid-fueled long-range missile launched from transporter-rector-launcher (TEL)	20
DF-5/5A	13,000+ km	Three-stage, liquid-fueled; DF-5s replaced by DF-5As	20
DF-21A	1,800 km	Two-stage, solid-propellant; some converted to conventionally-armed missiles	48
DF-31	8,000 km	Two-stage, solid-fuel; can carry 3 nuclear warheads; predicted deployment 2005	?
DF-31A	12,000 km	Deployment predicted between 2006-2010.	0
Julang-1	3,000 km	Type-092, <i>Xia</i> class, can carry 12 solid-fuel, two-stage JL-1 SLBMs	60
Julang-2	8000 km	Type-094, <i>Xia</i> class, equipped with JL-2 SLBM; expected deployment 2010	0

Annual Report on the Military Power of the People's Republic of China, Department of Defense, 2004.

<http://www.defenselink.mil/pubs/d20040528PRC.pdf>

<http://www.nrdc.org/nuclear/nudb/databl7.asp>

Tactical Weapons

The intended ambiguity of China's nuclear forces extends to the opacity surrounding its non-strategic arsenal.

The Natural Resources Defense Council estimates 150 tactical weapons in the Chinese arsenal.

<http://www.nrdc.org/nuclear/nudb/databl7.asp>

Chinese Defence Today claims that the DF-11 and DF-15, both single-stage, solid-fuel missiles launched from TELs, "are modern and capable compared to similar systems developed by US and Russia (and)...indicate China's capability to launch a high-tech, theatre-operation-style attack to any target in the region." <http://www.sinodefence.com/nuclear/default.asp>

Nuclear weapons facilities

Name/Location of Facility	Type/Status
Northwest Nuclear Technology Institute, in the Scientific Research District outside Malan, Xinjiang	Archive on nuclear explosions, warfare, and weapons research and design; associated with testing at Lop Nur
Jinquan Atomic Energy Complex (plant 404), Subei, Gansu	Fabrication of fissile materials into bomb cores, and final weapons assembly
Northwest Institute of Nuclear Technology, Xi'an, Shaanxi	Diagnostic support for nuclear test program
Lop Nur Nuclear Weapons Test Base, Xinjiang	Nuclear weapons test site and possible nuclear weapons stockpile
Chinese Academy of Engineering Physics (CAEP), Mianyang, Sichuan	Nuclear weapons research, design, and technology complex; called the "Los Alamos of China," 11 institutes, 8 located in Mianyang
Institute 904 of CAEP, outside Mianyang	Ordinance engineering lab for non-nuclear components of nuclear weapons; "the Chinese Sandia"
Institute of Applied Physics and Computational Mathematics, Beijing	Conducts research on nuclear warhead design computations for CAEP
Shanghai Institute of Nuclear Research, Shanghai Zhejiang	Engaged in tomography, tests solid missile propellants, explosives, and detonation packages for nuclear weapons
Fudan University, Shanghai, Xhejiang	Engaged in tomography, tests solid missile propellants, explosives, and detonation packages for nuclear weapons
Harbin, Heilongjiang	Possible warhead assembly and production site
Plant 821, Guangyuan, Sichuan	Nuclear weapon assembly facility

Carnegie Endowment for International Peace, Tracking Nuclear Proliferation, Washington, DC, 1998. China: Maps and Charts, 1998.

The Role of Nuclear Weapons in National Security Strategy

China focuses its security strategy on three inter-related elements:

- promoting national economic development
- promoting domestic unity
- maintaining state sovereignty and territorial integrity

China views its nuclear arsenal- the smallest of the 5 recognized Nuclear Weapon States- as an important element in deterrence, although it repeatedly voices support for global elimination of nuclear weapons.

The December, 2003 White Paper on National Defense states: "China consistently upholds the policy of no first use of nuclear weapons, and adopts an extremely restrained attitude toward the development of nuclear weapons. China has never participated in any nuclear arms race and never deployed nuclear weapons abroad. China's limited nuclear counterattack ability is entirely for deterrence against possible nuclear attacks by other countries."

2. ACTIVITIES SPECIFICALLY UNDERTAKEN IN ACCORDANCE WITH ARTICLE VI OF THE NPT

Systems Retired

- DF-3A missiles gradually retired
- DF-41 (canceled)

Norris, Robert S. and Hans M. Kristensen, "Chinese nuclear forces, 2003" NRDC Nuclear Notebook, http://www.thebulletin.org/article_nn.php?art_ofn-nd03norris

3. LOCATION AND CAPABILITY OF NUCLEAR FACILITIES

Power reactors

Operational: 9
Shut down: 0
Under Construction: 2
Planned: 40

<http://www.iaea.or.at/programmes/a2/>

Xinhua News Agency - April 6, 2005, <http://www.canelect.ca/english/article.html?SMContentIndex=1&SMContentSet=0>

Research reactors

Operational: 14
Shut down: 2
Under Construction: 2
Planned: 0

<http://www.iaea.or.at/worldatom/rrdb/>

In May 2004, the China National Nuclear Corporation applied to build eight large new reactors in the Guangdong and Zhejiang provinces.

<http://www.world-nuclear.org/info/inf63.htm>

China reportedly intends to reprocess a small amount of light water reactor spent fuel and recycle separated plutonium into its civil reactors. It also plans to establish a 100 ton per year reprocessing plant and associated MOX fuel fabrication plant, but these plans have been delayed.

http://www.isis-online.org/global_stocks/separated_civil_pu.html

Uranium Mines (5 operational)

Fuzhou- 300 tons capacity per year
Chongyi- 120 tons capacity per year
Yining- 200 tons capacity per year
Lantian- 100 tons capacity per year
Benxi- 120 tons capacity per year
Hengyang (on stand-by)- 500-100 tons capacity per year

Uranium Enrichment Facilities

Heping Uranium Enrichment Plant (Heping, Sichuan)
Lanzhou Nuclear Fuel Complex (Lanzhou, Gansu)
Lanzhou Nuclear Fuel Complex-2 (Lanzhou, Gansu)
China Institute of Atomic Energy (Tuoli, near Beijing)
Centrifuge enrichment plant (Chengdu, Sichuan)

Uranium Processing Facilities

Nuclear Fuel Component Plant/202 (Baotou, Nei Mongolia province)
Nuclear Fuel Component Plant/ 812 (Yibin, Sichuan)
Jiuquan Atomic Energy Complex/Plant 404 (Subei, Gansu)

Plutonium Production Reactors

Plant 821 (Guangyuan, Sichuan)
Jiuquan Atomic Energy Complex/Plant 404 (Subei, Gansu)

Plutonium Processing Facilities

Jiuluan Atomic Energy Complex/Plant 404 (Subei, Gansu)
Plant 921 (Guangyuan, Sichuan)
Nuclear Fuel Component Plant/Plant 812 (Yibin, Sichuan)
Lanzhou Nuclear Fuel Complex (Lanzhou, Gansu)

4. FISSILE MATERIAL HOLDINGS

Military Stocks of Fissile Materials

Plutonium: 4.8 tons

http://www.isis-online.org/global_stocks/plutonium_watch2004.html

Weapons-grade Uranium equivalent: 20 tons

http://www.isis-online.org/global_stocks/military_excess_heu.html

Declared Excess

Plutonium: 0

HEU: 0

Unirradiated Civil Plutonium: 4.3 tons (in country)

http://www.isis-online.org/global_stocks/civil_pu.html

Civil HEU: approximately 1 ton

http://www.isis-online.org/global_stocks/civil_inventories_heu.html

Cumulative Plutonium Discharges from Civilian Power Reactors: 4.3 tons

http://www.isis-online.org/global_stocks/civil_pu.html#table7

Estimated Amounts of Plutonium Contained in Spent Civil Reactor Fuel: 0 tons

The World Nuclear Association predicts that the annual spent fuel arisings will amount to approximately 600 tons in 2010 and 1000 tons by 2020. <http://www.world-nuclear.org/info/inf63.htm>

Spent fuels are temporarily stored at on-site pools for at least 5 years before transported to spent fuel interim storage sites for future reprocessing.

Li, Zhongliang, "Radioactive Waste and Spent Fuel Management in China," presentation given at the "GLOBAL 2001: Back End of the Fuel Cycle" conference, September 10-13, 2001, Paris, France.

<http://www.cea.fr/conferences/global2001/Opening%20et%20Closing/Opening%20session%20LI%20Zhongliang.pdf>

Radioactive Waste Management

The Commission of Science, Technology and Industry for National Defence is responsible for all facilities associated with the nuclear fuel cycle and radioactive waste management.

Low- and intermediate level waste: It is reported that China will construct 4-5 repositories for low-level waste produced from its nuclear industry, the decommissioning of nuclear facilities and from nuclear power plant operation. The wastes will be delivered to these facilities after a five-year interim storage period.

<http://www.ocrwm.doe.gov/factsheets/doeymp0409.shtml>

China employs three techniques for management of low- and intermediate-level nuclear waste: hydraulic fracture (commenced in 1993), bulk pouring cementation (mostly completed) and near-surface disposal near sites with "comparatively concentrated" nuclear installations.

Li, Zhongliang, "Radioactive Waste and Spent Fuel Management in China," presentation given at the "GLOBAL 2001: Back End of the Fuel Cycle" conference, September 10-13, 2001, Paris, France.

<http://www.cea.fr/conferences/global2001/Opening%20et%20Closing/Opening%20session%20LI%20Zhongliang.pdf>

High-level waste: China plans to create a vitrification workshop; in the meanwhile, China carries out chemical-separation experiments to downblend HLW and continues with its studies on HLW deep geological disposal. China has completed all feasibility studies and will most likely construct it in the northwest region of China, where two wells up to 700 m were drilled.

Li, Zhongliang, "Radioactive Waste and Spent Fuel Management in China," presentation given at the "GLOBAL 2001: Back End of the Fuel Cycle" conference, September 10-13, 2001, Paris, France.

<http://www.cea.fr/conferences/global2001/Opening%20et%20Closing/Opening%20session%20LI%20Zhongliang.pdf>
<http://www.cea.fr/conferences/global2001/Opening%20et%20Closing/Opening%20session%20LI%20Zhongliang.pdf>

5. NUCLEAR ACTIVITIES

Research Programs

China Nuclear Power Information Network
CIAE - China Inst of Atomic Energy
IHIP - Institute of Heavy Ion Physics
INET - Inst of Nuclear Energy Technology
Lanzhou University Nuclear Science & Technology Research Center
Peking University Nuclear Science & Technology Research Center
SNERDI - Shanghai Nuclear Engineering Research & Design Institute
SWIP - Southwest Inst of Physics
<http://www.radwaste.org/research.htm>

Nuclear fusion research

Institute of Plasma Physics, Chinese Academy of Science
Southwestern Institute of Physics, Center of Fusion Science
Department of Modern Physics, University of Science and Technology of China
http://www.iaea.org/inis/ws/research_institutes/china.html

Nuclear Cooperation

Algeria: Provision of 15 MW research reactor (1983); research facilities (1996 and 1997)
Argentina: Nuclear fuel cycle research and development (1985-present)
Brazil: Provision of nuclear materials and equipment (1984)
Canada: Uranium agreements (1994-2024)
Chile: Geology and mining; uranium reprocessing (1989-?)
Finland: Comprehensive agreement (1987-?)
France: Cooperation, safety, scientific and technical agreements (1979-present)
Germany: Cooperation, safety, scientific and technical agreements (1984-present)
Indonesia: Cooperation, technical, assistance and training agreement (1985)
Iran: Provision of nuclear technology, including cooperation, technical, scientific agreements (1985-?)
Italy: Cooperation, safety, scientific and technical agreements (1980-1992)
Japan: Cooperation, safety, and radioactive waste management agreements (1989, 1994)
Pakistan: Nuclear cooperation agreement, including the supply of a 300 MW power reactor (1991)
Romania: Cooperation agreement (1984)
Russia: Cooperation agreement (1996); uranium enrichment plant construction cooperation (1994); Agreement on supply of two 1,000 MW power reactors (1992); Economic and Scientific Cooperation agreement, including two nuclear power plants (1990-2000)
South Korea: Agreement for cooperation in establishing manufacturing facilities in China for nuclear components and equipment, and on the fabrication of sets of major components for 30-40 reactors (1995); Protocol on monitoring radioactivity and in alerting one another of any nuclear accidents; (1994); Bilateral nuclear energy agreement that will allow South Korean companies to take part in the construction of nuclear power plants in China (1994); Information provision agreement (1991)
Spain: Comprehensive agreement (1985)
Sweden: Industrial and scientific cooperation agreement (1978)
Switzerland: Cooperation agreement (1986)
Ukraine: Cooperation in uranium ore prospecting and mining, joint research and development of water-cooled reactors, and cooperation in the construction and safety measures of nuclear power reactors (1996)
UK: Comprehensive agreement (1985)

US: Nuclear reactor technology and nuclear application technologies; Nuclear emergency management and safety; Export controls on nuclear materials, equipment, technology, dual-use items; International nuclear safeguards and physical protection; Radioactive source security (2004)

<http://www.nti.org/db/china/nca.htm>

6. INTERNATIONAL NON-PROLIFERATION EFFORTS

“China has put in place a comprehensive legal system for non-proliferation export control, covering the exports of nuclear, biological, chemical, missile and other sensitive items and technologies. It has adopted the international export control measures, including export registration system, end-user and end-use certification system, licensing system, list control method and "catch-all" principle, and has stipulated corresponding penalties for breaches of these laws and regulations. China's non-proliferation export control measures are basically in conformity with the current international practice.” China Government White Paper, December 2004. <http://www.china.org.cn/e-white/20041227/X.htm>

Treaties Signed and Ratified, Date of deposit

Antarctic Treaty, 8 June 1983

Biological Weapons Convention, 15 November 1984

Certain Conventional Weapons Convention, 7 April 1982

Comprehensive Nuclear Test-Ban Treaty, 24 September 1996

Chemical Weapons Convention, 25 April 1997

Nuclear Non-Proliferation Treaty, 17 March 1992

Outer Space Treaty, 12 January 1984

Sea Bed Treaty, 28 February 1991

Treaty of Rarotonga Protocol, 21 October 1988

Treaty of Tlateloco Protocol, 12 June 1974

On 28 March 2002, China ratified the IAEA Additional Protocol, the first NWS to do so.

Multilateral Groups

Conference on Disarmament

Nuclear Suppliers Group

Zangger Committee

In February 2004, China and the Missile Technology Control Regime held their first round of dialogue, four months after Foreign Minister Li Zhaoxing sent a letter to the MTCR Chair, declaring China's willingness to join.

7. POSITIONS TAKEN IN INTERNATIONAL FORA ON VARIOUS ISSUES OF NUCLEAR DISARMAMENT

Security Strategy: “In this century, the biggest security threat to the world is no longer the strategic confrontation and conflict between big powers as we saw in the Cold War. Non-traditional threats such as trans-boundary crimes, terrorist acts and spread of WMDs are taking over traditional ones and becoming great challenges to the world. To effectively cope with these challenges in pursuit of peace and security for all requires a new security concept of mutual trust, mutual benefit, equality and cooperation. Nuclear weapons do not solve our problems.” - Mr. Liu Jieyi, Director General of Arms Control and Disarmament Department, Foreign Ministry of China, on Nuclear Disarmament and Security Assurances, 6 April 2004.

<http://www.fmprc.gov.cn/eng/wjw/zjjg/jks/jkxw/t82570.htm>

Thirteen Steps: “The 2000 NPT Review Conference agreed on 13-step nuclear disarmament measures.

Although regrettable changes took place in some aspects, we should continue to adhere to the spirit and principles of the steps. It is necessary for the third session of the preparatory committee to reaffirm those measures which are still valid. New proposals reflecting changes of the situation should be explored and the consensus should be sought.” - **Mr. Liu Jieyi, Director General of Arms Control and Disarmament Department, Foreign Ministry of China, on Nuclear Disarmament and Security Assurances, 6 April 2004.** <http://www.fmprc.gov.cn/eng/wjbj/zjg/jks/jkxw/t82570.htm>

Security Assurances: “Security assurances are not one way offering. The non-nuclear-weapon states agreed to give up the nuclear weapon option when they joined the NPT. This constitutes their contribution to nuclear non-proliferation, disarmament and to the maintenance of world peace and security. It is fully legitimate and reasonable for them to obtain assurances by nuclear-weapon states against nuclear threats and have such assurances in the form of a legal instrument.” - **Mr. Liu Jieyi, Director General of Arms Control and Disarmament Department, Foreign Ministry of China, on Nuclear Disarmament and Security Assurances, 6 April 2004.**

<http://www.fmprc.gov.cn/eng/wjbj/zjg/jks/jkxw/t82570.htm>

Nuclear Disarmament: “Countries with the largest and most advanced nuclear arsenals should further substantially cut down their nuclear arsenals in a verifiable and irreversible manner, thus creating favorable conditions for achieving complete nuclear disarmament.” **Statement to the 59th session of the General Assembly First Committee in China’s explanation of vote on resolutions related to nuclear disarmament, 28 October 2004.**

<http://www.reachingcriticalwill.org/political/lcom/lcom04/EOV/Chinanuclear.pdf>

Universality: “A comprehensive rather than selective implementation of the Final Document of 2000 NPT Review Conference is not only desirable but also necessary. We call upon all the States that have not joined NPT to accede to the Treaty without further delay, so as to achieve its universality at an early date.”- **Ambassador Hu Xiaodi, addressing the CD, 15 August 2002.**