

Fact Sheet 7: Safe Energy

The "Dual-Use" of Nuclear technology and its proliferation risks □

Contact: wecf@wecf.eu
info@umweltinstitut.org
www.wecf.eu
www.umweltinstitut.org

The civil-military complexity

Under the slogan "Atoms for Peace" in the early 1950's, US President Eisenhower made it possible for all countries to participate in the so called peaceful use of nuclear energy and to acquire nuclear know-how. Years later the United States began to realize the consequences of their nuclear politics: not all partnering countries used the new technology for only peaceful purposes. In many cases they started nuclear weapons programs under the cover of research reactors and civilian nuclear power development.

The Non-Proliferation Treaty

Until the beginning of 1967, only five countries possessed an atomic bomb: The USA, France, Great Britain, China and the former Soviet Union. To prevent other countries from becoming nuclear powers, in the late 1960's the Non-Proliferation Treaty (NPT) for nuclear weapons was created. It was based on three points:

- Only the five nuclear powers are allowed to hold nuclear weapons.
- Every country becoming a party to the treaty is allowed to use nuclear energy for peaceful purposes. (Article IV)
- The five nuclear powers promise to "honestly" negotiate an end to the arms race and commit to complete total nuclear disarmament. (Article VI)

Many other countries considered this arrangement as discriminatory, and the US President George Bush declared a third category of countries, the so called rogue states. Those countries should neither have nuclear weapons nor access to sensitive nuclear technologies, like the enrichment of uranium. In the long run such a three-category-system cannot be stable. For example, Iran has signed the NPT and consequently it has the right to use nuclear energy for peaceful purposes. The global community, however, is concerned that this country would choose a military path by developing its own uranium enrichment plant, which is a key technology for building nuclear weapons.

Trade and proliferation of weapons capable material

Although most countries signed the Non-Proliferation Treaty, it could not prevent some other countries to develop the atomic bomb, like India and Pakistan. Israel is regarded as a nuclear power since the late 1960's, even though the government has neither confirmed nor denied it so far. In 2005 North Korea declared its possession of the bomb, although it has never given proof. In 1991 a long-time, secretly developed nuclear weapons program in Iraq was revealed. Also Libya, South Africa, Argentina, Brazil and Taiwan have had military nuclear projects at one time. These countries have since discontinued nuclear weapons development. (1).

By revealing the nuclear black market in Pakistan it became clear how the secret development of nuclear weapons in several countries was

possible, despite the Non-Proliferation Treaty. In the 1970's the "father" of the Pakistani atomic bomb, Abdul Qadeer Khan had purloined blueprints from the Dutch nuclear company Urenco and so enabled his home country to build the atomic bomb. Khan has admitted to having provided other countries with the bomb plans.

The official nuclear powers bear a large part of the blame for the negative effects of proliferation due to their unreasonable lack of effort to meet their disarmament commitments. Further, it is known that the USA still makes contingent nuclear war plans and even considers pre-emptive strikes (2). That is why many countries desire their own nuclear weapons, as a deterrent against possible attacks.

The dual-use of nuclear technology cannot be avoided. Whoever promotes civil nuclear technology, unwillingly also enables nuclear weapons programs to emerge. Proliferation not only permits the illegal construction of atomic bombs, but also makes more likely the possibility of terrorist strikes with so called "dirty bombs" - bombs with radioactive content. Small amounts of secretly diverted radioactive material can already be used effectively when blended with conventional explosives.

The RERTR-Program

The concern of possible misuse of civil nuclear technology has alarmed the global community since the late 1970's. With the disarmament program RERTR (Reduced Enrichment for Research and Test



Reactors), weapons capable highly enriched uranium (HEU) was supposed to be withdrawn from civilian use. For that purpose fuels with low enrichment but high density were developed. The program was successful: many research reactors were able to switch to materials that were not “weapons capable” e.g., LEU or “low enriched uranium”, (enrichment below 20%). With the exception of a few “black sheep”, the global community was able to stick to this program. Those countries who did not go along include Libya, China and Germany.

FRM-II - a harmful precedent

The German Research Reactor München II (FRM-II) in Garching near Munich is a harmful precedent. To get an especially powerful reactor, the builders of the FRM-II abused the disarmament program: They developed a highly dense fuel, combined with high enrichment. The project is much disputed internationally because all efforts to disarm are being undermined (3). If the FRM-II had been built in a politically unstable country, the global public would not have tolerated it.

The operating license of FRM-II was obliged to convert to lower enriched uranium by 2010. However, it is known that the operators' efforts to develop a new fuel are everything else but ambitious. They will probably try to delay a conversion by any means possible.

Proliferation hazards are one more reason why nuclear energy is not a viable solution to climate change. To be climate relevant, several thousand new nuclear plants would have to be built. They would not only be located in rural areas, but also in densely populated ones. They would be built in developing and emerging nations, without sufficient financial strength and questionable security standards. Furthermore, in politically unstable regions they could easily become military targets.

By continuing to spread nuclear technologies, the access to nuclear weapons capable material would become easier and the danger of illegal nuclear proliferation would dramatically increase. The world would not become more secure. Far from it!

Christina Hacker,
Umweltinstitut München e.V.,
Germany
December 2007

Sources:

- (1) *Mythos Atomkraft – Ein Wegweiser*. Hrsg: Heinrich Böll Stiftung, Berlin, 2006
- (2) *US Defense Department: Nuclear Posture Review (Excerpts)*. January 8, 2002
- (3) *Wolfgang Liebert: Viel Wind um HEU – Die Kritik am neuen Garching*
Forschungsreaktor verstummt nicht. In: *Wissenschaft und Frieden*, 13. Jg. N. 4/95

