

The lease was apparently intended to lead to the purchase of several submarines by India and/or to help India develop an indigenously designed nuclear-propulsion system. The conditions of the leasing arrangement have not been made public. However, since Soviet submarines use highly enriched uranium which can also be used to produce nuclear weapons, and since India refuses to forsake the nuclear weapon option, it is debatable whether the Soviet-Indian deal is compatible with the goal of non-proliferation.

Another instance of nuclear-propulsion proliferation has been the possible acquisition by Canada of a fleet of nuclear-powered submarines equipped with conventionally armed torpedoes. However, as distinct from India, Canada is party to the NPT and has accepted full-scope IAEA safeguards. Consequently, the concerns regarding this acquisition are not of the same order as in the case of India. As a matter of fact, under the NPT, non-nuclear weapon states are prohibited only from using nuclear materials for explosive purposes; the use of such materials for naval propulsion is not prohibited. Paragraph 14 of the "Structure and Content of Agreements between the Agency and States," required in connection with the NPT, provides for a special arrangement for withdrawing nuclear material from IAEA safeguards, so that it can be used in non-proscribed military activities. The arrangement between the state in question and the IAEA should identify the circumstances during which safeguards would not be applied. The state would have to make it clear that the unsafeguarded material (the quantity and composition of which must be known to the IAEA) would not be used for the production of nuclear weapons or other nuclear explosive devices. According to the authoritative interpretation, based on the negotiating history, the exemption from safeguards is to be strictly limited to the material in the propulsion reactors and should not include other stages of the nuclear fuel cycle; safeguards must again apply as soon as the nuclear material is reintroduced into a peaceful nuclear activity for reprocessing or for other, inherently non-military industrial treatment.

If Canada were to come into possession of nuclear-powered submarines, it may avail itself of the exemption provision referred to above. This may not affect its commitment to the cause of non-proliferation of nuclear weapons, but would set an unfortunate precedent for the non-application of nuclear safeguards by the parties to the NPT.<sup>3</sup> Among other states known to be planning the acquisition of nuclear-powered submarines are Argentina and Brazil, both hold-outs from the NPT.<sup>4</sup>

#### *Dual-Capable Missiles*

One recommendation frequently made for the strengthening of the non-proliferation regime has been to complement the existing restraints on supplies of nuclear material and equipment by restraints on supplies of dual-capable weapon systems, that is, systems capable of delivering both conventional and nuclear weapons. This recommendation was partly put into practice in April

1987 when seven governments, those of Britain, Canada, France, the Federal Republic of Germany, Italy, Japan and the US, adopted identical guidelines to control the exports of equipment and technology which "could make a contribution" to missile systems capable of delivering a nuclear weapon.

The missile export control guidelines constitute an important initiative, in so far as they can make it more difficult, and perhaps more expensive, for countries to acquire a nuclear weapon delivery capability. However, the regime is focused on large missiles and rockets; it is not designed to constrain more sophisticated forces. It ignores such important and relatively easily available nuclear delivery vehicles as aircraft. Moreover, the restrictions have come somewhat late. Companies from the Federal Republic of Germany, France and Italy have been collaborating for some time with Third World missile producers, and both the US and the USSR have provided different types of missiles to several countries. In particular, Iraq, Iran, Libya, Syria and South Yemen are now in possession of Soviet-made missiles, some of which have been modified to reach a range of several hundred kilometres. In addition, negotiations are said to have been held for the sale of a new 600-kilometre-range Chinese missile to Syria. India has put a satellite into orbit with its own rocket and has started testing a 250-kilometre-range missile. Also Israel has demonstrated that it possesses a rocket powerful enough to launch a satellite into space and has reportedly deployed intermediate-range (over 1,000 kilometres) ballistic missiles in the Negev Desert. Pakistan has successfully test-fired indigenously developed surface-to-surface rockets capable of carrying a payload of more than 500 kilograms. Argentina is developing — in cooperation with Iraq and Egypt — a medium-range (800-950 kilometres) two-stage rocket with a payload of some 350 kilograms, whereas Brazil is known to manufacture and export a wide variety of rockets. A major deal was the purchase by Saudi Arabia of Chinese surface-to-surface ballistic missiles having a range of about 3,000 kilometres, and designed to deliver nuclear warheads.

Some of the recipient countries may be many years away from a nuclear weapon manufacturing capability, but if they decided to go nuclear they would certainly adapt for nuclear delivery those missiles they already possess. It is therefore widely recognized that to be more effective in reducing the risk of nuclear weapon proliferation, especially among non-parties to the NPT, the seven-nation missile technology control regime would have to be subscribed to by all suppliers of missiles, including of course the Soviet Union and China; the regime itself would have to be made sterner and its scope would need broadening. Exploratory talks on this subject have already been held between the United States and the Soviet Union.

#### *The Emergent Nuclear Suppliers*

The world nuclear market is dominated by a handful of industrial nations. However, the pattern of supplies is