

Energy Insider by William Engdahl

Chernobyl three years later

The disaster and its causes are not the only problems in the Russian effort to increase nuclear energy.

May is a special month in the history of the Soviet nuclear energy program. It was in May 1954 that the first Soviet nuclear energy reactor began service in Obninsk. And it was in May 1986 that the world first learned the bare outlines of the greatest nuclear accident in history, the explosion of the Soviet RBMK-design reactor unit in Chernobyl.

Chernobyl Unit-4 was one of 14 "graphite-moderated" reactors in the Soviet Union; all had been completed since 1974. (Seven were still under construction at the time of the disaster.)

Today, three years after, the Russian public and the world are still being lied to regarding what happened at the Ukrainian plant. The reactor unit is a huge concrete crypt.

It is a suitable time to review some of the enormous problems in the Russian nuclear energy program.

First, their use of the RBMK graphite-moderated design is notable. The design is not used in Western civilian nuclear reactors. It was abandoned more than 30 years ago, as unsafe. Although the Russians strenuously deny the fact, it is clear from information available in the West at present that the Chernobyl reactor type is what nuclear engineers term a "dual purpose" reactor. It produces electricity, but it also produces plutonium-239, the material used in the bombs in the Soviet nuclear arsenal.

When the containment vessel of Chernobyl cracked, a horrendous fire resulted as 2,500 tons of graphite ignited. According to experts in the West

with experience in such graphite designs, the Soviets must have been driving the Chernobyl reactor to maximize plutonium production, for the explosion which hit to have occurred.

Soviet reactors, in addition to not having any special containment units, are of the "dual purpose" type in order to get "more bang for the ruble." In a review of the Chernobyl events written this April 25, the *Frankfurter Rundschau* explained the unique difference between Western reactor design considerations and those in Russia. In the Soviet system, they note, "security considerations receive priority only when they are cheaper than any possible damage." The Russians calculate human life in rubles. They added wrong at Chernobyl.

As of late 1988, the U.S.S.R. had a total of 59 operating nuclear power units of all types. According to rated capacities, this gives them a total of some 36,000 megawatts from nuclear plants, some 11% of all electricity, according to a recent review by the International Atomic Energy Agency. While this puts them in third place behind the United States and France, and ahead of Japan, they are a very poor third. The United States currently has some 101,000 MWe capacity and gets 20% of all electricity from nuclear plants. France, a far smaller economy than either, has 52,000 MWe nuclear from 53 nuclear units and supplies the cheapest electricity on the European continent: 70% of all electricity generated there is nuclear.

In March of this year, *Izvestia* confirmed that two nuclear reactors had

been closed permanently because of the "general seismic situation in Armenia." Reports of massive public distrust following Chernobyl has resulted in "delay" of a decision whether to continue construction of Chernobyl Units 5 and 6, both of the same RBMK design. Apparently, two other "super" RBMK units planned for Kostroma have been canceled. Plans to build Western-style 1,000-MWe pressurized water reactor units in their stead have been announced.

Construction delays are reported to be enormous and growing. Soviet plans call for increasing nuclear generation to allow more oil to be exported for hard-currency earnings.

Despite Chernobyl, it seems that nuclear power programs in the Warsaw Pact economies of the U.S.S.R. and Eastern Europe have been least affected by the accident. The U.S.S.R. plans to complete 31 reactor units currently under construction, and 47 more in the planning stages. According to Nikolai Lukonin, head of the Ministry of Nuclear Power, who spoke in Vienna late last year, the goal is to generate fully 30% of electricity from nuclear sources by the year 2000.

The Soviets are also extremely interested in developing a high-temperature gas-cooled reactor (HTGR) based on the successful West German "pebble-bed" unit operating at Hamm-Üntrop. They have held out a carrot to the Swedish-Swiss ASEA-Brown Boveri, which built the reactor at Hamm-Üntrop, of possible large future orders. But Western observers think the aim is to glean the "secrets" of the only successful such reactor design, inherently the safest in the world, rather than buy "turnkey" plants.

Well, whatever happened at Chernobyl, the interest at least indicates an increased concern over nuclear accidents.