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| Role (or purpose): the publisher | Audience: general audience |
| Format: explanation type text | Task: to tell about Chernobyl powerplant’s reactors and to explain what happened in 1986 |

Four RMBK dual-purpose reactors were used at the Chernobyl nuclear power plant. The RMBK stands for “реактор большой мощности канальный” in Russian, which reads “high-power channel-type reactor”. The name refers to reactor’s design, in which each fuel rod is enclosed in an individual diameter pipe, called a technological channel. Water flows through the fuel rod channels and the entire core is encased in steel and sand.

Dual-purpose reactors produce both useful power in the form of heat and fissionable materials like uranium 233 and plutonium. Such materials may be used for commercial purposes or for weapons. For example, plutonium is useful as a power source for batteries in satellites; uranium 233 is often found in nuclear bombs.

The disaster occurred on April 25-26 in 1986. The operators of the reactor Unit 4 removed most of the control and safety rods, that are designed to neutralize the nuclear reaction, from the core and switched off important safety systems. The technicians wanted to test the electric generator at low-power, which resulted in the reactor overheating. The uranium fuel rods used in the reactor began to melt through protective barriers and eventually escaped to the outside. The water, that was turning into steam to generate power, expanded so much from the heat that the pipes it was kept in exploded.

RBMK reactors do not have some kind of a dome over the reactor designed to keep radiation inside the power plant in the event of such an accident. It means that radioactive elements including plutonium, iodine, strontium and caesium were scattered over a wide area. In addition, the graphite that was used as a moderating material caught fire when the air entered the reactor core because of a meltdown, which contributed to the radioactive emission.

Sources:

<https://www.iaea.org/newscenter/focus/chernobyl/faqs#:~:text=What%20caused%20the%20Chernobyl%20accident,of%20radiation%20into%20the%20atmosphere>.

<https://www.britannica.com/event/Chernobyl-disaster>

<https://en.wikipedia.org/wiki/Chernobyl_disaster>

<https://www.cnet.com/science/chernobyl-miniseries-by-hbo-and-sky-prompts-searches-on-nuclear-explosion-fission/>