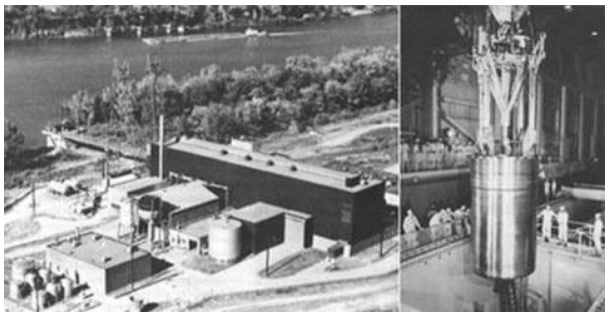
AWESOME stories

THE K-19



This is the Soviet-era nuclear power plant, at Obninsk, where Soviet engineers assessed nuclear-reactor-design issues while building a fleet of nuclear-powered submarines for the USSR. Image by Obninsk NPP.

Energy Global News tells us more about the plant and its operations: “On June 26, 1954, at Obninsk, Russia, the nuclear power plant APS-1 with a net electrical output of 5 MW was connected to the power grid, the world’s first nuclear power plant that generated electricity for commercial use. The science city of Obnisk is located at about 100 km southwest of Moscow. The plant produced electricity from 1954 to 2002, then was used as research and isotope production plant.”

Nuclear reactors, generally speaking, are huge. The same is true for submarine reactors. One way to assess their size is to examine a defueled reactor compartment (on the right side of the linked photograph) as it is separated from the rest of the submarine.

Since nuclear reactors do not need air to function properly, they can operate just as efficiently underwater as they do on the surface. That is only part of the reason why nuclear power is frequently preferred for submarines.

As they created new ships for the fleet, Soviet engineers relied on the world’s first nuclear power station, in the town of Obninsk (60 miles south of Moscow), to assess nuclear reactor design issues. The country used enormous resources to quickly build a nuclear submarine fleet.

K-19 was from the "Hotel" class of Russian subs. But according to the handwritten memoirs of Captain Zateyev, extensively quoted in *K-19: The Widowmaker*, the Soviets were paying a price for building too many ships too soon:

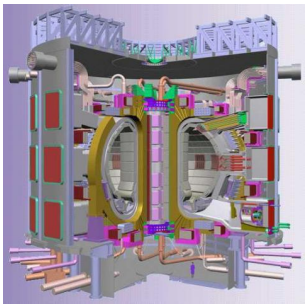
> *...operating vessels that had to return from the sea because of technical malfunctions was positively shameful...I had argued quite vocally that we should first build one or two experimental subs, perfect all their systems and equipment to the point that we could guarantee their reliability, and only then launch serial production. But nothing doing. We continued building ships that were not combat worthy.* (*K-19*, page 107.)

On July 4, 1961, *K-19* was one of those ships that was not combat-worthy.

See Alignments to State and Common Core standards for this story online at:
http://www.awesomestories.com/asset/AcademicAlignment/THE-K-19-K19-Widowmaker

See Learning Tasks for this story online at:
http://www.awesomestories.com/asset/AcademicActivities/THE-K-19-K19-Widowmaker

Media Stream



Nuclear Fusion - Tokamak Nuclear Reactor

Image online, courtesy ITER.
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First Nuclear Power Station

Image online, courtesy Bellona.org - an environmentat NGO from Oslo, Norway.
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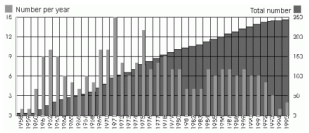

USSR -Graph Depicting Construction of Nuclear Submarines by Year

Image online, courtesy Bellona.org - an environmentat NGO from Oslo, Norway.
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Nuclear Reactor Compartment Photograph

Image online, courtesy The Brookings Institution website.
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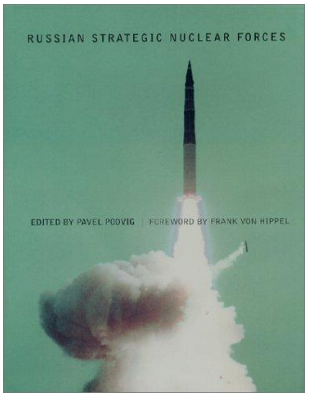

Russian Nuclear Weapons - Book Cover

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