

0. SECRET HEROES - Story Preface

1. NUCLEAR ENERGY

2. HOW NUCLEAR ENERGY WORKS

3. NUCLEAR SUBMARINES

4. THE K-19

5. A NUCLEAR ACCIDENT

6. AVOIDING NUCLEAR MELTDOWN

7. RADIATION SICKNESS ABOARD a NUCLEAR SUB

8. SAVING THE K-19 CREW

9. SECRET HEROES



This map depicts locations in the Arctic Ocean where scientists believe Soviet / Russian nuclear hazards exist (as a result of discarding nuclear submarines and radioactive waste). Map created by [Bellona Foundation](#).

What is it like to have acute radiation sickness? Captain Zateyev describes it in graphic terms:

What is radiation sickness actually like? What are the symptoms? The first signs are uninterrupted vomiting beginning about 15 to 20 minutes after exposure, with redness on unprotected areas of skin [radiation burns]. After about one and a half to two hours there is massive edema [swelling]. The whole body puffs up so badly that the eyes can no longer open. The tongue swells, making speech almost unintelligible. Ichor, a straw-colored serous discharge, begins running from the hair-covered areas, particularly the scalp. All of this is accompanied by agonizing pain and loss of mobility that continue without loss of consciousness until death. These, of course, are the symptoms of the most severe exposures. Smaller doses of radiation result in a latent early phase of the disease, in which the victim feels completely normal for a period of several days before symptoms appear. (K-19, page 142-43.)

Within days of the accident, sailors were dead of radiation poisoning. Captain Zateyev describes who they were and what happened:

...Lieutenant Korchilov, Petty Officer First Rank Ordochkin, and Petty Officer Second Rank Kashenkov had all died on July 10. Meanwhile, in Polyarny an investigation was launched. Some dubious persons began summoning us for questioning. I told them all exactly where they could go. On July 12 Seaman Savkin died. On July 13 Seaman Kharitonov died. On the 15th Seaman Penkov died. Everyone began thinking that the same fate awaited him, that it was only a matter of time - if not today, then tomorrow. (K-19, page 140.)

Vladimir Yenin, the executive officer, and two other severely injured men received bone marrow transplants followed by blood transfusions. Their lives were saved.

Yuri Povstyev, who first realized the ship was in trouble, died when his treatment order was reversed (first the blood transfusions and, when they failed, bone marrow transplants.) Boris Ryzhikov died as well—for the same reason.

The tragedy for the survivors was not over, however. In the pre-Glasnost Soviet era, the government did not allow “bad events” to be publicized. If accidents happened, they were covered up. And it was absolutely forbidden for a patient to have a diagnosis of “radiation sickness,” even if that were the case. Captain Zateyev:

On September 27 [1961] we were all officially diagnosed as suffering from “asthenic vegetative syndrome.” At the time, we were told that this was done to conceal the real diagnosis of radiation sickness, which couldn’t be made public knowledge. Later I learned that “asthenic vegetative syndrome” refers to some sort of mental disorder and has nothing to do with radiation sickness at all. So they made mental patients of us! (K-19, page 145.)

The story of K-19 remained unknown until Glasnost (loosely translated “openness”) allowed restrictions to be lifted. An article about the crews’ heroism was finally written in 1991—in the magazine *Soviet Soldier*.

Wrecked nuclear reactors, and other atomic debris, were also kept out of sight—at the bottom of the Kara Sea. Peter Huchthausen, a retired US Navy Captain and author of *K-19: The Widowmaker*, notes:

In the Kara Sea dumping area alone, near Novaya Zemlya in the Barents Sea - the largest Soviet nuclear graveyard - more than 3.5 million curies of nuclear waste already on the seabed were disclosed in 1992. [Scroll down 50% and look for the Barents Sea in the upper-middle section of the right lower quadrant.] That is the equivalent of one-tenth of the radiological contamination leaked to the atmosphere during the Chernobyl incident. The residue exists in the form of eight scuttled submarine hulls, sixteen discarded reactors - six with fuel still inside - and 9,000 additional tons of discarded fuel assemblies and liquid nuclear waste, all in water no deeper than 150 feet. (K-19, page 190.)

That is, of course, a sobering thought. Captain Zateyev, who undoubtedly endured many sobering thoughts, had to also go through an official investigation. He was cleared of any responsibility for the nuclear accident and remained on active duty with the Soviet Navy until 1978. He died of cancer twenty years later.

K-19 ("played" by K-77, "Juliette," in the movie) was decontaminated and sent back to sea. She suffered more accidents, including a disastrous fire in 1972, when 28 of her crew perished. By this time nicknamed "Hiroshima," she was sent to the scrap yard in May, 2002.

A final note about the accident-plagued, nuclear-powered ballistic missile submarine. When K-19 was launched, the champagne bottle refused to break. One can only wonder if—as so many thought at the time—it was an omen of things to come.

NOTE: For more information on K-19 and her crew, check out [National Geographic's web site](#).

See Alignments to State and Common Core standards for this story online at:

<http://www.awesomestories.com/asset/AcademicAlignment/SECRET-HEROES-K19-Widowmaker>

See Learning Tasks for this story online at:

<http://www.awesomestories.com/asset/AcademicActivities/SECRET-HEROES-K19-Widowmaker>

Media Stream



Map of Kara Sea

Image online, courtesy Wikimedia Commons. License: CC BY-SA 3.0.

View this asset at: <http://www.awesomestories.com/asset/view/Map-of-Kara-Sea>



Barents Sea - Map Locator

Image online, courtesy Wikimedia Commons. License: CC BY-SA 3.0.

View this asset at:

<http://www.awesomestories.com/asset/view/Barents-Sea-Map-Locator>