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Meltdown at Sea

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THE RADIATION accident at the Chernobyl power plant near Kiev is not the Soviet Union's first nuclear meltdown. Although little is known in the West about Soviet nuclear accidents, U.S. Navy and CIA documents obtained

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under the Freedom of Information Act indicate there have been at least 17 serious radiation accidents in the Soviet Union's atomic-powered navy, including reports of the first nuclear meltdown at sea.

As in the United States, most Soviet nuclear reactors are operated not as civilian power stations, but as propulsion plants aboard nuclear submarines. The Soviets have an estimated 356 naval reactors aboard 188 ships and submarines, compared to some 50 civilian reactors. Although the naval reactors may be as small as one-tenth the size of civilian plants, experts warn they are potentially very dangerous.

Rumors of serious nuclear accidents and of widespread radiation overexposure in the Soviet navy have persisted for years, but only during the last few years have U.S. officials begun releasing information about them. Most striking is a set of CIA intelligence briefs recently released to the Center for Investigative Reporting. Mostly cables and reports prepared under the CIA's Directorates of Intelligence and Operations, they provide confirmation of the first reactor meltdown at sea.

The accident occurred in 1966 or 1967 aboard the icebreaker Lenin, and is believed to have rendered the ship too radioactive to use for years. According to one CIA report, "a nuclear reactor . . . melted in a sudden catastrophic accident. The exact number of casualties . . . was believed to be between 27 and 30 people." A 1982 U.S. Navy report similarly referred to the Lenin as having "suffered a reactor casualty," and reported the ship's three reactors ultimately were replaced with two new ones. Virtually nothing is known about the accident's environmental effects, or even where it occurred.

A second meltdown is reported to have occurred aboard a prototype "Alfa"-class sub in the Barents Sea in the late 1970s, also with many casualties, although no documentation of the event is available. The Alfa class uses liquid sodium as a heat-transfer agent in its reactors, instead of pressurized water, as in most other Soviet nuclear subs and all those in the U.S. fleet. The U.S. Navy abandoned its use of the highly corrosive sodium more than 25 years ago when it experienced problems aboard the second American nuclear sub, the *Seawolf*.

Details are similarly scanty about other occurrences, but the reports indicate at least 12 major nuclear accidents at sea, including the sinking of 3 submarines and the loss of several hundred men. Among them:

In late February 1982, a Soviet ballistic missile sub "was sighted surfaced in the North Atlantic off the coast of Newfoundland." According to a U.S. Navy report, "This unit had apparently suffered a serious nuclear propulsion casualty, which resulted in the loss of all power . . . and she was towed back to her home base. Indications are that several deaths occurred."

In early September 1981, a sudden series of powerful shocks jolted a Soviet sub in the Baltic Sea. A rupture apparently developed in the sub's nuclear reactor system, and

leaking radiation began to contaminate crew members. As an emergency measure, the irradiated sailors were locked into their compartments, where they remained for the two days it took to tow the crippled sub back to port. Upon docking at Kaliningrad, the victims were evacuated and flown to a hospital in Riga. Within 14 days, the sailors began to shed their hair and rapidly lose weight. Many of them soon died of "severe radiation poisoning," according to a CIA report.

In August 1980, in a widely reported accident, a Soviet nuclear attack submarine suffered a serious fire off the coast of Okinawa. According to the U.S. Navy, "All power was apparently lost . . . British personnel observed several bodies on the submarine's deck and other personnel receiving artificial respiration. At least nine men are believed to have died from a probable fire in the propulsion spaces."

In August 1978, a Soviet guided-missile submarine "was observed dead in the water near Cockall Bank northwest of Scotland," according to a U.S. Navy report. "The unit had apparently lost power due to a pro-

pulsion-system casualty. The exact cause . . . and number of possible casualties is unknown."

In December 1972, a nuclear weapon ruptured aboard a Soviet sub patrolling off the eastern coast of North America. According to CIA sources, "the accident occurred in the spaces of the Mine-Torpedo Department . . . and involved nuclear radiation leakage from a nuclear torpedo." As a safety measure, the doors to the torpedo room were immediately sealed, trapping crew members within the space.

On April 11, 1970, a nuclear attack sub near Spain was apparently lost at sea due "to a casualty in the nuclear propulsion system," according to one U.S. Navy report. "The Soviets have never admitted that this submarine was lost."

In 1966, a radiation leak occurred in the reactor shielding of a nuclear sub near the Arctic naval base of Polyarnyy. Crewmen reportedly panicked when the submarine docked. According to one CIA report, "Part of the crew was sent to a special center on an island near Murmanak where naval personnel with radiation sickness were sent to be treated. . . . [They] did not come back."

CIA reports also provide details about the well publicized sinking of a submarine off the Faroe Islands near Iceland in 1970. The interior of the submarine caught fire and when it spread toward the nuclear reactor the captain "gave orders for part of the crew to escape to the [nearby] submarine tender. The political officer, who had not been ordered to leave the submarine, went on board the tender for fear of his life. The . . . executive officer and several crew members . . . refused and instead assisted the captain in fighting the fire." The fire could not be controlled, and the ship was deliberately scuttled with "great loss of life."

So great are the dangers that one U.S. Navy report noted crewmen from Soviet nuclear ships receive what is called "childless pay" and special treatment for radiation-related diseases.

Soviet sailors reportedly even jest about their plight: "How do you tell a man is from the Northern Fleet?" goes one joke. Answer: "He glows in the dark."

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