

# EIR Science & Technology

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## The Soviet disaster: accident—or war push?

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*Marjorie Mazel Hecht, managing editor of Fusion, reports on how the Soviets fail to measure up to Western nuclear safety standards.*

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In 1979, the Three Mile Island incident provided the occasion for the antinuclear movement to spread hysteria and fear throughout the American population, making preposterous claims about the dangers of nuclear power. Their aim was to shut down the nuclear power industry in the United States, as a first step to returning the nation, and the rest of the world, to a non-industrial society. Despite the fact that the TMI accident was proven to be much less serious than the hysterical assertions of Greens and the media, the antinuclear propaganda successfully slowed the growth of the nuclear industry, both domestically and for export.

As can be seen in the accompanying articles and interviews on U.S. nuclear safety, nuclear power was the safest energy around before Three Mile Island, and the accident in 1979 spurred a series of upgrades that increased the redundancy and safeguards in the system, improved the training of personnel, and fine-tuned the monitoring of plants.

The Chernobyl accident is a far more serious event than Three Mile Island, including loss of life and the release of lethal amounts of radiation to the environment. Once again, the antinuclear movement here and in Europe is using the accident to rally the fears of the population to the point where the Greens can force the shutdown of the nuclear industry. In West Germany, the Social Democratic Party, led by Willy Brandt, is considering a political coalition on this basis, as Brandt put it, to force the "plutonium generation" to an end.

As this report makes clear, however, there is little basis for comparison between the Soviets' archaic graphite reactor design and the standard light-water reactors found in the United States, West Germany, and other nuclear countries.

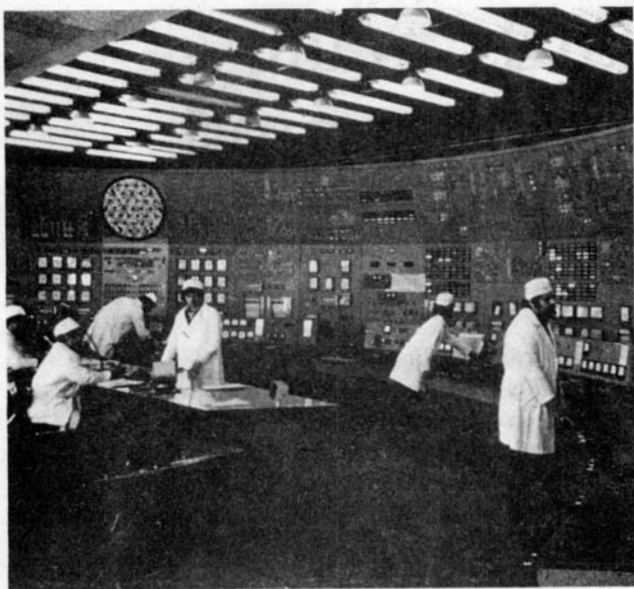
Twelve days after the nuclear accident at Chernobyl, the Soviets acknowledged in a press conference that they had not initially treated the accident as seriously as they should have, and that they had moved too slowly with the appropriate emergency measures.

This underestimation of the disaster is fully consistent with the Soviets' philosophy on nuclear safety. Neither the accident itself nor the inappropriate response to it could have happened in the United States. Although in recent years the Soviets have adopted some of the standard safety measures practiced by the other nuclear nations, the basic attitude toward nuclear safety expressed by the Soviets indicates a stark disregard for human life. Under the gun of a war mobilization that mandated vast and speedy increases in electrical power, the Soviets took shortcuts in nuclear safety.

In part this was because the Soviets lacked the technological skill to build the most advanced type of plants. Thus, in the early 1970s, when it was clear that the Soviets could not achieve mass production of pressurized water reactors, they chose an outmoded but easier to build design for their nuclear power campaign. The water-cooled graphite-moderated reactor at Chernobyl is a 1950s design, discontinued in the West except for the production of military plutonium (see box, p. 37). The Chernobyl reactor could never be licensed here in the United States for power production.

### **Scoffing at safety**

Perhaps the most astounding result of Soviet cost-cutting was to build reactors that had no containment buildings, which is the last line of the U.S. "defense-in-depth" multiple



United Nations/Tass photo by M. Shakbazyan

At a press conference May 6, Soviet officials acknowledged that they had not learned of the disaster earlier because local officials did not realize the seriousness of what was happening. Here the control room of a Soviet nuclear plant in Armenian S.S.R.

safety measures to ensure that no radioactive materials are released from the plant. Unlike reactors in the rest of the nuclear nations, most Soviet reactors look like ordinary factories, with no containment domes.

The first power station to have a containment dome came on line in early 1979 at Novovoronezhskiy, the Soviets' 30th nuclear plant.

Throughout the early years of their nuclear program, the Soviets portrayed their gross deficiencies in safety as a virtue. Soviet nuclear scientists scoffed at the U.S. nuclear safety systems, calling them unnecessarily redundant and implying that Americans are stupid to waste so much effort and expense on safety.

At the same time, the Soviets gloated over small incidents in U.S. power plants, pointing to the superiority of the socialist approach.

Characteristically, the first TASS news release on the Chernobyl accident said little about the disaster but noted that "2,300 accidents, breakdowns, and other faults have been reported in the United States because of poor quality of reactors and other types of equipment, unsatisfactory control over technical conditions, and non-observance of safety regulations."

As the Chernobyl disaster has starkly emphasized, the Soviets keep their civilian nuclear program a secret. One of the few revealing looks at the program occurred in 1978, when a group of U.S. journalists was allowed to tour several Soviet nuclear plants.

The Americans were astounded at what they saw. For example, *Washington Post* science-reporter Thomas O'

Toole noted, "None of the workers in the Soviet nuclear plants wear the dosimeters so familiar elsewhere in the world to measure accidental exposure to radiation."

Peter Stoler of *Time* magazine reported that at the Kurchatov plant the officials insisted that "the West in general and the U.S. in particular make too great a fetish of nuclear safety." The Soviets didn't even put out their cigarettes while walking into the reactor room, he said, and they hung spare fuel rods "loosely on the wall like so many salamis."

Stoler commented, "Existing Soviet reactors operate without concrete containment vessels because, scientists explain, such things are unnecessary (though considering the quality of the Soviet concrete work we saw, they would probably be ineffective as well)."

A 1979 U.S.-authored review of the Soviet energy system notes that the Soviets see redundant safety systems as a burden, quoting one Soviet source as saying, "An excess of such backup systems, where the need or the reliability is not clearly assured, introduces operations complexity and reduces overall safety."

## After Three Mile Island

Did the Soviets get more serious about safety after Three Mile Island? Gordon Hurlbert, former president of Westinghouse Power Systems and now a nuclear consultant, said that he thought the answer was yes, although he noted that the Soviets were "willing to take more risks than the United States." Hurlbert visited the Soviet Union in July 1983 and toured several nuclear plants with other members of the World Energy Congress. At the time, he said, he had "grave doubts" about their safety program.

When the Soviets explained how their new pressurized water reactor (PWR) design would have containment buildings because of "world opinion," Hurlbert asked them if they planned to retrofit all the graphite reactors and the older PWRs. He was told, "No, we're not going to have an accident."

The Chernobyl reactor had no containment building, he said, although it did have a three-level safety system. Hurlbert noted that the Soviets depend less on computer controls and more on manual controls, which means that humans make more of the decisions. He also confirmed that Soviet nuclear workers routinely do not wear dosimeters to measure radiation levels in the plant. "Their discipline is substantially inferior" to ours, although their plants are well-monitored, he said. Hurlbert said that he had had many occasions over the years to meet with Soviet technical people—the minister and deputy minister of power and electricity, for example. He called them "world class engineers . . . concerned about safety and human life." But he noted that one had to understand that the Soviets make three kinds of statements, "one for technical people, one for their own population, and one for political reasons."