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'Chernobyl: History of a Tragedy'

Serhii Plokhy draws on new sources to understand the 1986 nuclear disaster

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A new history of the world's worst nuclear accident has emerged from the recent opening of Chernobyl archival materials. In "Chernobyl: History of a Tragedy," Serhii Plokhy traces how the explosion occurred in 1986, the Soviet government's crisis management, and the repercussions of the explosion that released radiation equivalent to 500 bombs dropped on Hiroshima.

A professor of Ukrainian history at Harvard University, Plokhy portrays Chernobyl as both pivotal cause and perfect metaphor of the collapse of the Soviet Union. Not only was Chernobyl "the beginning of the end of the Soviet Union," but also its parallel: a massive undertaking meant to bring progress through science, but plagued by a long history of systemic issues swept under the rug, culminating in a sudden but inevitable collapse with

profound global impact.

The first chapter opens with the 1986 Communist Party Conference, where leading officials gathered to assess the state of the U.S.S.R. "The record was dismal": dangerously slow economic development, a long-term campaign in Afghanistan, and a costly nuclear arms race. Nevertheless, "it was believed that the system was basically sound and simply needed a boost by means of 'scientific and technical progress'."

In his six-hour long conference speech, Gorbachev set an agenda to spur economic growth through scientific and technical revolution. This meant a shift from fossil fuels to nuclear energy, which propelled the Chernobyl nuclear plant to prominence. The plant was to undergo expansion and play a crucial role in the growth of nuclear energy in the U.S.S.R. Applause reverberated throughout the auditorium in a scene of optimism and unity that grows increasingly ironic as the book progresses.

Readers find themselves wishing Chernobyl's construction team had inspected the facility's problems as closely as Plokhy does. Dwindling resources and unrealistic deadlines from Moscow led workers at Chernobyl to cut corners on safety and costs. Moreover, the reactor design turned out to be flawed, despite assurances from nuclear engineers at the top-secret Ministry of Medium Machine Building. Finally, the plant operators too often sacrificed safety for convenience, which would eventually result in the reactor's catastrophic explosion. In tracing the myriad problems of the Chernobyl plant, Plokhy argues that the Soviet bureaucratic tradition made the disaster inevitable.

The response to the crisis repeats the human errors that allowed it to happen. While radioactive plumes were inducing headaches and vomit, the crisis control team refused to admit that the reactor had exploded. Much like the myth of the U.S.S.R. itself, "the myth of the reactor's safety was shared by everyone in the [nuclear] industry, from top to bottom."

After the first phase of internal denial, the government tried to avoid mass panic by suppressing the bad news. Intercity telephone lines were cut to prevent information — but not radiation — from spreading. Despite skyrocketing contamination, warning signs were not posted and health recommendations were not given until ten days after the explosion. Local officials wanted to cancel the May 1 parade due to the health hazard, but their Moscow bosses demanded the parade continue for the appearance of normalcy. We are told that Gorbachev himself said, "Just try not holding the parade! I'll leave you to rot!"

Plokhy implies officials feared responsibility for the radiation more than the radiation itself. Government workers who wanted to begin evacuation were stopped by their superiors: "Why are you in a panic? A commission will come…and they'll decide." Evacuation was postponed because "the top officials wanted to avoid…responsibility for ordering an evacuation. That would mean admitting that something terrible had happened." During these delays, the evacuation buses were kept waiting and absorbed high levels of radiation before people boarded. The "exodus" divided families and spread radiation sickness, which first appeared as vomiting and "radiation tans."

The devastation is softened only by the dark and delicious irony of Plokhy's prose: "The orders to evacuate the village came as a complete surprise to the parish priest, Father Leonid, who believed not only in God but also in the power of Soviet science. 'We now have powerful

science, so they'll fix all the problems,' he told his wife soon after the explosion. Father Leonid's belief in the power of science came crashing down on May 2, which happened to be Good Friday."

Ultimately, the government made a 30-kilometer exclusion zone and evacuated over 40,000 people, but trust in the government was shattered. The steps taken to prevent panic ultimately "caused a rift between the people and the government that never closed."

From this rift emerged eco-nationalist movements in Ukraine as well as other republics, including Lithuania and Belarus. In Ukraine, the movement was led by novelists, poets, playwrights, and journalists who depicted nuclear power plants as "embodiments of Moscow's eco-imperialism." No longer interested in "rhetoric about the good of humanity" through nuclear energy, prominent writers, such as Oles Honchar demanded a complete shutdown of the Chernobyl plant. Through mass rallies, the eco-nationalist movement secured new political freedoms and its writers went on to direct the movement for national independence. According to the Ukrainian poet Ivan Drach, "Chernobyl was the stimulus of all the democratic processes in Ukraine."

The technological dreams of the 1986 Communist Party Conference ended in the dissolution of the union into today's post-Soviet states. But the half-life of irony is long too, and the Soviet bureaucracy was not its only casualty. Eco-nationalism reverted to nuclear nationalism when newly independent states such as Ukraine returned to nuclear energy under severe economic distress. Ukraine eventually dismantled its nuclear program for Western aid, but the effects of Chernobyl endure in the form of increased cancer rates and areas uninhabitable for "at least 20,000 years." Plokhy admits that the precise health impacts of the radiation exposure are still debated, but holds that "there can be little doubt that the society as a whole was left traumatized for decades to come."

The book ends by provoking some sobering questions. Could Chernobyl happen again? What exactly is stopping it from recurring? The questions Plokhy poses actually challenge his argument that the main fault lay with Soviet bureaucracy. As he piles up the evidence, the reader is left wondering which error or action tipped the scale toward catastrophe, and whether or not that tipping point could have been reached anyway and anywhere. Without knowing that point or the details of today's nuclear programs, we cannot know how far the world is from another accident. Plokhy is not optimistic: "We are still as far from taming nuclear reactions as we were in 1986."

From the section entitled "Exclusion Zone"

Gorbachev never came—his first visit to Chernobyl would take place almost two years after the accident, in February 1988—but on the day Shumak and his fellow officers delivered their secret cargo [a special radiation-proof vehicle designed for use by the top Soviet leaders in case of nuclear attack], the site was visited by two of Gorbachev's closest assistants, Premier Nikolai Ryzhkov and Gorbachev's second-in-command at the Central Committee, Yegor Ligachev. They flew to Kyiv from Moscow on the morning of May 2. From there, in the company of the Ukrainian leaders Volodymyr Shcherbytsky and Oleksandr Liashko, they took a helicopter to the power plant. Some of those involved after the accident, including the chief scientific adviser of the state commission, Valerii Legasov, believed that the visit was a

response to reports from Kyiv and other major Ukrainian centers about rising levels of radiation.

After having ordered that the Kyiv rally proceed as planned, the leaders from Moscow now came to the area to assess the situation for themselves. They brought along their personal dosimeters but had little understanding of the danger posed by the damaged reactor. As the helicopter approached the nuclear plant, Ryzhkov ordered the pilot to descend and fly over the reactor. "The ever more frequent beeping of the instruments turned into a frenzied, continuous wail; the numbers ran up the scale at a furious pace," remembered Liashko, who was on the flight with Ryzhkov and Ligachev. He recalled that the helicopter had no protection whatsoever against radiation; Ryzhkov believed that there was a lead plate on the bottom, but nothing else. Looking at the reactor, they were able to comprehend for the first time the scope of the damage the explosion had caused. But they were still far from fully understanding the consequences of the disaster.

In Chernobyl, the plenipotentiaries of the Kremlin presided over a meeting of the state commission, only slowly gaining a better appreciation of the enormous problems facing them. Anatolii Maiorets, the all-Union minister of energy, who was one of the main speakers at the meeting, exuded optimism about the future of the plant. Trying to anticipate the expectations of the senior officials, Maiorets concluded his presentation by stating: "We will take all necessary measures and have Unit 4 in working order by October, and Unit 5 by December!" The director of the plant, Viktor Briukhanov, who was no longer in any position to make decisions but still present at the meeting, was shocked. Later, he recalled his thoughts on listening to Maiorets: "And nobody said to him, 'Why are you talking nonsense? The unit can't be restored!' The atomic experts remained silent. And I couldn't say a word so as not to be expelled from the meeting." One participant who did not remain silent but also did not speak out was Liashko, the head of the Ukrainian government. "What is he talking about?" he quietly asked Ryzhkov. "How can any units be brought onstream when a ten-kilometer zone is contaminated with radiation above the normal limit?" Ryzhkov did not respond. The meeting went on.

It was a hot day in May. The windows were open, and next to one of them sat Volodymyr Shcherbytsky, chain-smoking cigarettes. He wiped tears from his eyes with a handkerchief. He was probably suffering from a spring allergy, but the situation was grim enough to justify real tears. Not all the speakers were as optimistic as Maiorets. General Vladimir Pikalov, the commander of chemical units in the region, reported on radiation levels, and leading scientists left no doubt that radioactivity was high and increasing every day. The head of the all-Union meteorological agency, Yurii Izrael, produced a map of the contaminated areas around the power plant. They extended up to 30 kilometers, with the locations of radioactive "tongues" and "dirty" spots depending on the direction and strength of winds at the time of the explosion and in the following days. Many members of the state commission believed that the 10-kilometer exclusion zone on which they had agreed earlier would have to be extended.

Ryzhkov, who was slowly grasping the extent of the problem caused by the spreading radiation, asked how large the new exclusion zone should be. Those present suggested a radius of 30 kilo- meters, although there were some "clean" spots within that area. Ryzhkov later recalled, "We had several sources of information: ecologists, geologists, meteorologists, the military, and civil defense. We compared all those maps, analyzing why some of the data

was inconsistent. We placed all the maps one on top of another and got a 'blot' encompassing the contaminated areas of Ukraine, Belarus, and Russia. . . . I sat thinking for a long time: a decision had to be made." After some hesitation, Ryzhkov went along with the recommendation to create a 30-kilometer zone. The zone would cover more than 2,000 square kilometers of territory, include more than 80 settlements, and result in the additional evacuation of more than 40,000 people.

Liashko recalled the moment of decision somewhat differently. After the meeting in Chernobyl, the senior officials drove to nearby villages to check on the evacuees from Prypiat. Liashko was in the middle of a conversation with one of the women evacuated from the city when the commander of the civil defense units approached him with the map of contaminated areas produced by General Pikalov and his officers. Liashko looked at the map and realized that the village they were visiting, to which Prypiat citizens had been evacuated a few days earlier, was itself in the radioactive zone. It was located 20 kilometers from the nuclear plant. Liashko showed the map to Ryzhkov, who made the final decision on the evacuation of all settlements within the 30-kilometer zone.

Liashko then returned to his conversations with evacuees. The woman with whom he had just spoken complained that the physics teacher in the local school, in whose home she had been billeted with her family, had asked them to move to the summer shack on the premises because they were "bearers of radiation." "And I had a fleeting thought," recalled Liashko later. "What would that teacher, who had treated the family of evacuees in unfriendly fashion, say if he were ordered to evacuate his dwelling the next day?"

The members of the state commission were pleased with the visit of senior Soviet officials to Chernobyl and the discussions they had there. "That was an important meeting," recalled Valerii Legasov. "First of all, they understood from our reports, and it fell to me to be one of the reporters, they understood the situation, grasping that this was not just a local accident but one of great significance that would have long-term consequences, and that huge efforts would be required to continue localizing [the consequences of] the damaged unit; that preparations had to be made for large-scale deactivation measures; that a cover for the damaged Unit 4 would have to be designed and built." There was no more talk of restoring Unit 4 to working order or bringing it back onstream by the end of the year. The highest officials in Moscow were beginning to comprehend the consequences of the disaster.

Note: For ease of reading, the footnotes have been removed from this section.

Excerpted from "Chernobyl: History of a Tragedy"

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