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BY THOMAS POWERS

If not for the humor of the wind, the worst nuclear accident in history might have remained a Soviet secret for an appallingly long and dangerous time. But as it happened, on April 28 Swedish technicians reported atmospheric traces of radioactive gases, mostly xenon and krypton, carried by the wind from a point of origin clearly inside the Soviet Union. Their inquiries couldn't be ignored. That night Moscow grudgingly confessed, in four terse sentences, that "an accident has occurred" in one of the four 1,000-megawatt nuclear power reactors at Chernobyl, 80 miles north of Kiev in the Ukraine.

But what sort of accident? How? When? With what consequences and how many casualties? What danger remained? To whom? For how long? It's what we don't know that stirs the deepest fears. Since official answers were slow in coming, fear blossomed in the vacuum. Secrecy is at once both a Soviet policy and a Russian obsession. The rest of the world, with middling initial success, tried to figure out what had happened by reading backward from the evidence. Swedish monitoring efforts identified traces of at least 14 radioactive isotopes and concluded that a meltdown had occurred. In parts of Poland much closer to Chernobyl some of these trace elements were picked up in concentrations ten times as great. A simple mathematical calculation suggested that radioactivity must have exceeded lethal levels in the area immediately surrounding the reactor itself. How lethal and how big an area would probably not be known for months. Domestic and international pressure, and the force of circumstances, obliged Moscow to release more information with every passing day, but as we went to press the most important facts, actual radiation readings, continued to be withheld.

Nonetheless, two things seemed clear: the worst nuclear accident in history still fell short of the nightmare meltdown of *The China Syndrome*, and Mikhail Sergeevich Gorbachev's much trumpeted policy of openness as the new leader of the Soviet Union had foundered on the rock of Russian national character. During the first few days after the Soviets acknowledged the accident, their news media appeared to be more interested in nuclear accidents elsewhere—like the disastrous fire at the Windscale reactor in Britain in 1957, the partial meltdown and near-disaster at Three Mile Island in Pennsylvania in 1979. Soviet officials denounced the West for a lack of "tact" and for "almost gloating" in its exaggerated speculations about the scope of the disaster. The note of touchy panic reached its height perhaps in the response—

Thomas Powers, who is the author of The Man Who Kept the Secrets, is working on a history of strategic weapons.

it was hardly an answer—of Vitali Churkin, a Soviet embassy official in Washington, who agreed to appear at a congressional hearing where he was asked to explain "in laymen's terms" just what happened at Chernobyl. "Can you tell me in those same laymen's terms," he responded, "why the *Challenger* disaster happened?"

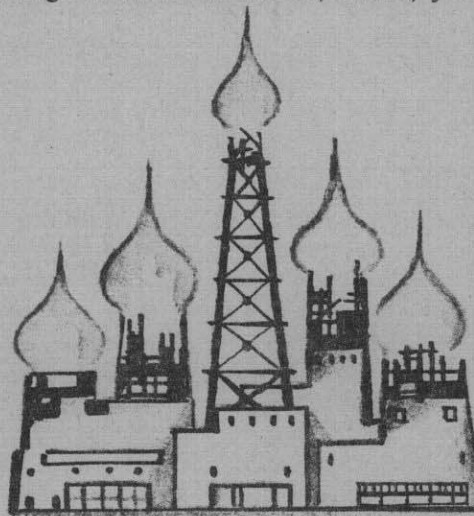
No regime, in a pinch, claims up tighter than the Soviet Union. It amounts to a kind of stage fright raised to the level of neurosis, a sense of being singled out and picked on, an "everybody's against us" attitude revealed in March 1985 by Andre Gromyko, the long-time Soviet Foreign Minister, when he complained that the rest of the world trained unfriendly telescopes on Moscow. "They watch," he said, "just waiting for some sort of crack to appear in

the Soviet leadership." Where others might shrug, the Soviets insist on taking it personally. Secrecy is the natural child of this defensiveness. The paltry communiqués issued in the wake of Chernobyl inevitably reminded observers of Moscow's silence for days after shooting down a South Korean airliner in September 1983, followed by claims—as if they mattered—that the plane, carrying hundreds of innocent travelers, had been on some sort of spy mission.

Nothing was ever said about another Soviet nuclear disaster—an apparent explosion of accumulated high-level radioactive waste from a plutonium-producing plant near Kyshtym in the southern Ural mountains in 1957 or '58. Evidence of the disaster was so scanty at the time that even the CIA came up with only a garbled version of what happened, and kept that to itself. The Western public learned nothing of it until Zhores Med-

vedev, an emigré Soviet scientist, published a sketchy account in the British weekly *New Scientist* in 1976 and then—irritated by skepticism of the very existence of an event which was common (if hazy) knowledge in Soviet scientific circles—followed his initial article with a second, and in 1979 with a book, *Nuclear Disaster in the Urals*. In it he proved that Soviet scientists had published a number of thinly disguised articles and books about the environmental effects of the disaster, which had contaminated forests and lakes covering a thousand square kilometers or more with high levels of strontium 90 and cesium 137—relatively long-lived isotopes that would make the affected area uninhabitable for decades. A sign along a 30-kilometer stretch of the Chelyabinsk-Sverdlovsk road warned travelers to hurry through, but to the world at large Moscow had nothing to say, just as it has often had nothing to say of airplane and railway crashes, industrial accidents, outbreaks of disease or famine, and even of earthquakes and other natural disasters.

This compulsive prettifying of the record is more than a harmless quirk. Silence about failure inevitably cripples the self-correcting



The Soviet nuclear accident reminds us that man will risk all—except the loss of abundance

capacity of the state. The problem is so severe the Soviet Union can barely talk to itself. On one notorious occasion during the first SALT talks, Soviet military officials privately urged the Americans not to tell their civilian colleagues about Soviet strategic forces. Even economic planners must consult Western publications for statistics the Soviet Union dares not collect, much less publish, on its own. Infant mortality, alcoholism, and grain harvests in the Soviet Union are all studied more easily in the West. Presumably it was this—rather than openness as a sign of spiritual health—which prompted Gorbachev to break the silence about silence, an ancient Russian habit of mind which the Soviet government inherited along with suspicion of foreigners and an absence of natural frontiers. As far back as 1839, the French traveler Astolphe Louis Leonord, better known as the Marquis de Custine, said of the Russia he'd found, "Secrecy presides over everything, administrative secrecy, political, social secrecy; discretion useful and discretion useless." The marquis was a royalist, and had gone to Russia in search of a champion of the monarchial principle. What he found was suspicion and concealment. "Here everything is difficult," he wrote in his diary. "Everybody wishes to please his master by contributing toward the concealment of some corner of the truth from foreigners . . . Everyone here, you see, thinks about what no one says."

So it is still. Some years ago the Soviet official A. I. Berg, an engineer serving as a deputy minister of defense, doubtless startled his colleagues when he dared say what all must have known—"We are stuck fast in secrecy like a fly in treacle." The single biggest event in Soviet history—Khrushchev's speech to the 20th Party Congress denouncing Stalin in 1956—was the biggest because it broke the deepest silence. Typically, it remains unpublished in the Soviet Union. Chernobyl marks no such turning of an era. Whatever the disaster reveals about the wrong way to run a reactor—doubtless plenty—it proves even more clearly that Russia is still Russia, where the wind, but not the state—so long as it retains a choice in the matter—may betray a secret.

Well, so what? The point can be pushed too far. Is Russia the only state to keep a secret when it can, and muddle the details when flat denial won't work? Ask the downwind citizens of Nevada and Utah whether Washington was candid about the hazards of nuclear testing in the 1950s. Do the U.S. soldiers who handled Agent Orange in Vietnam feel their questions have been answered openly? Governments don't tell the truth about such matters unless they have to, although in this country an occasionally sluggish press can sometimes push them into candor.

So the Russians are demonstrably embarrassed and unhappy about the disaster at Chernobyl, wish the problem would go away, and are sitting on answers in the hope of speeding its departure—what else is new? The monitors say what the monitors say: either the level of radiation in Sweden is a menace to health or it's not, and the Swedes say it's not. What does Soviet secrecy have to do with it?

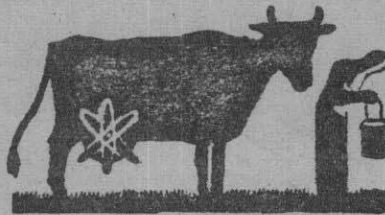
Here we must attempt to peel away an entire layer of public argument about Chernobyl, the outer skin of politics which is always the first order of business for governments and the compulsive politicians who run them. Beneath it we find the collective

fear that ran wild for a day or two when the immediate scale of the Chernobyl disaster was still unknown. An early story distributed by United Press International, based on a single report from an unidentified but usually reliable woman in Kiev, claimed an initial death toll of 2,000 or more—a figure that seemed almost loonily exaggerated a week later.

Despite official reassurances, worried Swedes soon depleted drug store stocks of potassium iodide pills—a useful specific in the presence of radioactive iodine at genuinely dangerous levels. Governments insisted nothing of the sort was really required, but bowed to popular fears and suggested a switch to powdered milk, bottled water, and canned vegetables anyway. The British government brought dependents home from Kiev, the Americans advised against travel in Poland, the West Germans withheld milk until levels of enriched iodine 131 had decayed, the Italians ordered the destruction of thousands of tons of fresh leafy vegetables. Why? The answer can only be a healthy official respect for the popular fear of radiation, which governments have learned to dismiss at their peril. One imagines, rationally, that they're thinking of the returns: better to have been safe than sorry when it comes time to go to the polls. But who would deny an uneasy substratum of doubt—that governments are trying to keep a lid on the bad news, since it's too late for anything but palliatives? Why else

would the Poles insist that radiation readings offered no cause for alarm while keeping the actual figures secret "to avoid hysteria"?

Ordinary citizens are helplessly dependent on the experts when it comes to radiation. Other dangers we can judge for ourselves, but radiation is a secret thing—we can't see it or smell it or taste it. Simple nausea can be the first sign of a lethal dose, but



weeks or months without apparent sign of injury are no guarantee of health. Psychologists who've studied the popular fear of the atom say it's the secrecy of injury that stirs anxiety. No one can predict with certainty the consequences of exposure. A single damaged cell may develop years later into cancer, or kill a future fetus, or poison progeny generations removed. The poisons themselves are both tenacious and insidious. The worst of them—plutonium, one of the most toxic substances known to man—remains lethal for scores of thousands of years. High-level radioactive wastes are notoriously difficult to dispose of. The Department of Energy is currently trying to identify two underground sites in stable geological structures where such wastes, accumulated over a projected 35-year period, may be stored safely for 10,000 years—guarded by warnings that must make sense to passers-by when the markers are twice as old as writing is now. The Great Sphinx at Gizeh, by way of comparison, is only 3,500 years old, and no one knows why it was built.

But radioactive poisons don't only linger. They migrate as well, down through the earth to the water table and thence heaven only knows where. Some tend to accumulate as they work their way up through the food chain—like strontium 90, chemically similar to calcium, ingested by cows at pasture and passed on to humans through milk, coming to rest finally in bones and teeth. During the controversy over atmospheric testing in the 1950s it was discovered that mothers' milk contained strontium 90 levels far in excess

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of federal standards. One protest group organized the mailing of thousands of baby teeth to authorities in Washington, a dramatic expression of the popular fear which eventually led to the Soviet-British-American ban on open-air nuclear tests signed in 1963.

Small wonder that the fear of radiation—of a world contaminated with subtle poisons, silently accumulating in the bones and fatty tissue—blossomed with greenhouse luxuriance after the disaster at Chernobyl, encouraged by rumor and hollow official reassurance. The Soviets were justified in protesting the wilder Western speculations, but foolish to have imagined any other result from their own cautious and defensive silence. Experts say that a population exposed to even a single rem—roentgen equivalent man, a standard measure of radiation—can be expected to produce, years or decades later, about one “excess” fatal cancer per 10,000 people. About 33 deaths of this sort have been officially attributed to the Windscale disaster. What the final toll of Chernobyl will be is anybody’s guess—a fact bound to encourage fear.

But fear of radiation is far from being the only threat our civilization has created for itself. We live in a kind of sea of chemicals—gases and solids that turn the air brown over cities, and catch the light at dusk, streaking the horizon with gorgeous purple, violet, and mauve. Oil- and coal-burning power plants in the American Midwest pump millions of tons of sulphur dioxide into the air annually, some of it through 1,000-foot-high smokestacks to protect the local air quality. Carried by the wind, transformed into sulphuric acid by precipitation, it poisons a downwind swathe, killing trees, earthworms in the topsoil, fishlife in mountain streams. Some lakes in the Adirondacks, Northern Europe, and Scandinavia are as acidic as lemonade, and just as lifeless. Other chemicals have been dumped in bulk in old mine shafts, abandoned missile silos, landfills where towns have later been built. In five years the Environmental Protection Agency has spent \$250 million to clean up six toxic waste dumps; by its own count 850 more require full-scale clean-up. The Congressional Office of Technology Assessment says a truer figure would be close to 10,000. Dioxins in the food chain, ozone-depleting fluorocarbons in the atmosphere, PCBs in rivers, and chlorinated benzenes in the water table—the list of poisons we’ve produced is endless. One in five Americans can expect to die of cancer. Is this simply nature at work, the price we pay for long lives? Or the inevitable result of a planet poisoned in the pursuit of abundance?

The fear of radiation, reawakened by Chernobyl, is simply the fear of a Faustian bargain. Technical genius gave us fire, tools, and agriculture, which in turn made life easy and long—a deal impossible to turn down. But success at the same time made us numerous, too. The abundance of one generation inevitably meant poverty for the next, unless production expanded to match the growth in population. For 10,000 years, more or less,

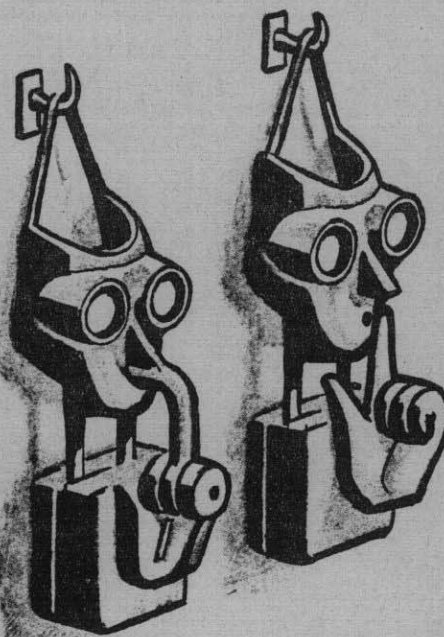
we’ve managed to keep up, but the price has been high. The land of milk and honey God promised the Israelites probably was a land of milk and honey, but it didn’t stay that way long. Classical Greece and Rome each reached its height in an environmentally exhausted world. The forests of the Mediterranean had been cut down for fuel and ship timbers. Goat- and sheep-herding sped the process of erosion. Topsoils were depleted by monoculture and washed away as the result of plowing. Rome fed itself first from the *Campagna* surrounding the city, then from Sicily, next from North Africa, finally from Egypt, as one granary after another was worn out. The scale of Roman endeavors is suggested by one of the city’s strangest monuments—a mountain of broken pottery called *Monte Testaccio*. For a brief period under the Caesars, clay amphorae filled with grain, wine, and olive oil were unloaded in Rome itself. The broken pots were cast onto a pile

without thought—until the pile grew into a mountain hundreds of feet high and the better part of a mile long. The Romans threatened to bury themselves in their own detritus, while we, having mastered the alchemist’s art, threaten to poison ourselves with ours.

The four gigawatt (billion watt) reactors at Chernobyl have capacity enough to light a city of four million. The Soviet Union built them, along with others, to keep Lenin’s promise that socialism meant electrification. Plans call for increasing electric power produced by nuclear plants from 28 gigawatts now to 70 by 1990, a steep climb made necessary by diminishing reserves of the fossil fuels used to generate more than 75 per cent of the 1.5 billion kilowatt hours of electricity produced last year. This ambitious program is the result of Soviet efforts to keep up—not with the West but with their own growing population and its desire for a better life.

Stripped of persiflage, the underlying promise of industrial civilization can be summed up in a word—more. That means factories, mines, oil wells, roads and railroads, chemical plants and refineries with goods pouring out of one door, waste from another. Sometimes the system breaks down, as it did in Bhopal, India in December 1984, when tons of methyl isocyanate gas burst from a tank in a chemical plant and killed 2,000 people. The disaster at Chernobyl was on a much smaller scale—perhaps. Both proved that accidents which “can’t happen” can.

In 1929 Freud published *Civilization and its Discontents*. In it he wrote: “Men have brought their powers of subduing the forces of nature to such a pitch that by using them they could now very easily exterminate one another to the last man. They know this—hence arises a great part of their current unrest, their dejection, their mood of apprehension.” Chernobyl is a reminder of the two great fears of the age. One is the fear we will destroy ourselves. It comes and it goes. But the other fear is with us always. It’s what keeps the factories going—the fear of a civilization addicted to abundance, willing to risk anything except running out.



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