

CHERNOBYL ①

Chernobyl': A Personal Look at the Thirty-Kilometer Zone

David Marples

On June 14 and 15, 1989, I visited Chernobyl' on the invitation of the Ukrainian Ministry of Foreign Affairs. In addition to conducting interviews with members of the staff of the Kombinat Production Association, with the director of the Chernobyl' nuclear power plant, Mikhail Umanets', and with the directors of the experimental hothouse run by "Kompleks" in Pripyat', I also had the opportunity to look around the thirty-kilometer zone, take radiation measurements with a geiger counter (supplied by Kombinat), and examine the operation of the Chernobyl' plant itself. My aim in doing so was to seek out answers to some disturbing questions that have arisen of late about the zone—not least about the continuing operation of the power plant despite acknowledged technical faults—and to ascertain whether any parts of the zone were likely to be habitable in the near future.

The Kombinat Production Association

Chernobyl' itself is a bustling town today, with some 6,500 shift workers, the majority of whom appear to be living at the shift settlement of Zelenyi Mys. At the approach to the town, military reservists—youngsters in brown overalls—were in evidence, often sitting in the undergrowth taking cigarette breaks despite the roadside signs warning of radioactivity in the ditches. Along with my guide, Yurii Risovanny, an engineer with the international department of Kombinat, I arrived at the headquarters of the Kombinat Production Association in Chernobyl' in a black Volga, to be greeted by Pavel G. Pokutnyi, the chairman of the Department of Information and Foreign Relations of Kombinat.

During our meeting, Pokutnyi explained the various units encompassed by Kombinat. It comprises, under General Manager Mikhail Sedov, nine sections: (1) the Chernobyl' nuclear power plant, which has three operating units; (2) the Kompleks specialized unit, which deals with decontamination work and the problem of radioactive waste; (3) the Radiation Monitoring Department; (4) the Heat and Power Supply Department; (5) the Dispatching and Process Control Department; (6) the Personnel Catering Department; (7) the Auto Transport Department; (8) the Housing and Communal Services Department; and (9) the Construction Project Department (for construction of the town of Slavutich, which houses workers employed at the Chernobyl' plant and today has a population of 10,000).

Because of the advancement of the work at Slavutich, the plant operatives at Chernobyl' were taken off shift work in December, 1988, and placed on a regular

schedule. These workers travel from Slavutich by rail, but they must change trains at the entrance to the thirty-kilometer zone so that radioactivity will not be spread outside the zone. Pokutnyi acknowledged that there has been discussion in the press of late as to whether Slavutich was built on "a radioactive patch," but he dismissed such speculations, declaring that from the point of view of the natural background radiation it has been constructed in one of the cleanest of areas.

In addition to the 9,000-strong Kombinat team, the zone is also populated during working hours by a growing number of scientists. Reactor Unit No. 4 (the damaged reactor) is now under the supervision of the Kurchatov Institute of Atomic Energy. In addition, scientists from twenty-six institutes of the USSR and Ukrainian Academies of Sciences are studying the influence of radiation on the surrounding plant life. In the near future, Pokutnyi explained, a scientific and technical center is to be opened in Chernobyl' with the cooperation and involvement of specialists from foreign countries. Foreign scientists are already coming regularly to examine "the sarcophagus" that covers the damaged reactor, he stated, but they have been critical of the safety of the RBMK (graphite-moderated) units. Although no further RBMKs are being built, Pokutnyi declared, those currently in operation will complete their terms before being dismantled.

Pokutnyi made it plain that, despite international cooperation in dealing with the problems arising from the nuclear accident, the tasks facing Kombinat will remain for decades. One immediate question is which ministry will be in charge of future operations. Because the USSR Ministry of Atomic Energy has been the object of much criticism, one of the tasks of the Congress of People's Deputies is to decide on a replacement and on a new structure of administration for the Soviet nuclear industry as a whole. It is expected that this matter will be resolved within the next two months.

In response to my question whether it would not be preferable simply to shut down the Chernobyl' plant in view of the strong opposition from ecological groups, Pokutnyi stated that there appear to be two possible future scenarios: either the "green" movement will force a complete shutdown of Soviet nuclear power plants, or the nuclear industry will have to take every conceivable measure to ensure safety. In Pokutnyi's opinion, however, the attitude of the antinuclear power lobby is unreasonable. Emotions are playing a larger role than wisdom, he maintained. In this connection, he pointed out that, in contrast to me, the Belorussian

writer Ales' Adamovich had not visited the zone: "He has never been here, and yet he writes constantly about these problems!"¹

Speaking of the recent decisions to evacuate villages in Belorussia and in the Narodichi Raion of Zhitomir Oblast in Ukraine,² Pokutnyi stated that the evacuation program will not begin until 1990. He also revealed that several villages within a ten-kilometer zone around the damaged reactor are being used as "graveyards" for the 2 million cubic meters of irradiated soil collected and "hundreds of thousands" of tons of steel and nonferrous metals. He named Povesne and Lubyanka as being among the villages used for this purpose.

Pokutnyi balked somewhat at a question about the military reservists from Estonia who are said to have complained, in 1986, that their term of work in the zone had been extended from one to two months and ultimately to six months. According to Pokutnyi, the emergency radiation norm per worker in 1986 was set at twenty-five rems, and these levels were checked daily. Although it is true that the reservists were called up for six months, he stated, if their accumulated dose approached the maximum in, say, two to three months, then they were at once removed from the zone. Former nuclear plant director Erik Pozdyshev, for example—the first post-accident director—accumulated twenty-five rems in a relatively short period and was obliged to leave the zone and take up work that did not entail exposure to excessive levels of radiation. By 1987-88, the maximum norm per worker was reduced to five rems (the present rate), and next year the pre-accident norm (presumably the international rate of 0.5 rems for those in the nuclear power industry) is to be reinstated.

The Chernobyl' Nuclear Power Plant

I also spoke with Mikhail Umanets', director of the Chernobyl' nuclear power plant. In his interview, he focused first on the technical improvements made to the RBMK-1000 reactors at Chernobyl'. Ninety fuel assemblies have been replaced with additional absorber rods, and much of the fuel is now enriched with 2.4 percent of Uranium-235, as opposed to 2.0 percent at the time of the accident. As a result of these measures, it has been possible to reduce the positive void coefficient. Currently, Umanets' declared, steps are also being taken to reduce the time for reactor shutdown on Unit No. 1 from twelve seconds to two—a speed comparable to that achieved in the graphite-moderated CANDU reactors in Canada. In April, 1986, the shutdown time was twenty seconds, whereas the power surge that resulted in the explosion occurred in four seconds. This work follows previous

¹ Adamovich has written extensively in *Moscow News* and *Novyi mir*. Although he has not visited Kombinat, he has in fact visited several towns and villages in the Gomel' Oblast of Belorussia, on the outskirts of the thirty-kilometer zone.

² See David Marples, "Narodichi: A Raion in Distress," *Report on the USSR*, No. 23, 1989, pp. 27-28.

experiments at the Leningrad and Ignalina RBMK reactors. In theory, if the current improvements are completed, it will be possible to prevent a similar type of catastrophe.

In addition, Umanets' reported, new safety systems are being instituted that include improved monitoring of the individual units under the supervision of the senior engineer. All the instructions on operation have been revised and republished, and the personnel have been retrained or replaced. Workers from Chernobyl' have been sent for training on the RBMK simulator at Smolensk, and a new, more advanced simulator is being constructed for the Chernobyl' plant workers at Slavutich. There is a simulator for the water-pressurized reactor (the VVER) at the Novovoronezh nuclear power plant.

Umanets' acknowledged that, in 1988, he had been an advocate of continuing construction at the Chernobyl' plant and bringing Units No. 5 and No. 6 on line. (Construction work on Unit No. 5 had been 85 percent completed at the time of the accident, and work on Unit No. 6 had been 15 percent completed. These two reactors are about 400 meters away from the rest of the power station.) Umanets' has now changed his mind, however. From a human point of view, he believes, it is simply unfair to bring people to Chernobyl' to construct these reactors. The pertinence of this remark was corroborated by the radiation levels recorded on June 14; at a distance of 300 meters from the damaged reactor, the recorded level was 1.6 millirems per hour, or about 160 times the natural background level. Closer to the reactor, the radiation was said to be 10 millirems per hour, or 1,000 times the background level.

Umanets' stated that about 4,000 people work at the Chernobyl' plant today, only 1,000 of whom worked there at the time of the accident. The operatives have a thirty-six-hour work week. Most of the newcomers were sent to Chernobyl' from other RBMK nuclear power plants, such as Ignalina and Smolensk. About 30 percent of these workers are from Ukraine; the remainder come from various other republics.

As for the future, Umanets' was more confident than Pokutnyi regarding attitudes towards nuclear power, believing that the public will be persuaded of the future importance of the industry. On the other hand, he commented that the days of the RBMK-1000 are numbered. A major problem has been the expansion of the graphite fuel through radioactivity, which necessitates replacement of the fuel channels at fifteen-year intervals. In order to alleviate this problem, a major technological modification is required. This would extend the operating span of the reactor to the regular thirty years. Such a modification is now being tested on the No. 1 RBMK Unit at Leningrad. Umanets' appeared to doubt, however, whether this modification would be introduced in all existing Soviet RBMKs, since he believes VVER reactors moderated by helium to be the trend of the immediate future.

Pripyat'

Following a tour of the plant, including a visit to the control room of Unit No. 2, I was taken to the experimental

hothouse in Pripjat', operated by Kompleks under the jurisdiction of the USSR Ministry of Atomic Energy (through Kombinat). My host was Chief Biologist Boris Solomanik. He explained that twenty people work at the hothouse while living permanently at Zelenyi Mys. They are examining the effect of radioactive isotopes produced by the Chernobyl' explosion on various types of seasonal plants. Particular interest is being taken, he stated, in ruthenium, zirconium, and cerium in addition to the familiar cesium, strontium, and iodine. Plants are grown hydroponically in the hothouse and then taken to the open soil. He pointed out two beds of pine trees in their second year of growth. The first bed was planted with "normal" trees, while the second contained trees grown from seeds taken from the "Red Forest" (now largely demolished), which had received some 600 rems of irradiation. The trees in the second bed displayed elongated shoots at strange angles and warped growth. The shoots were approximately three times the size of the nonirradiated shoots.

Pripjat' itself is deserted aside from the hothouse and a swimming pool run by four people operating on shifts. My guide, Yuri Risoanny, stated that in his view Pripjat' will never again be populated. Two auto-loader trucks were taking irradiated cars out of the town, and all the vacated apartments have now been emptied of their household effects. There was a notable contrast between the confident tones of those working at the hothouse—one of whom dismissed the notion that any deformities might have occurred among irradiated livestock—and the bleakness of the empty city, now overgrown with weeds. Also striking was the disinclination of Chernobyl' plant personnel to wear protective clothing outside the station itself. Upon my return to the town of Chernobyl', I was interviewed about my reactions to the day. My comment that I could see no reason for keeping the station in operation in such surroundings was received surprisingly well.

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MINORITIES

North American-Style Native Reservations in the Soviet North?

Kathleen Mihalisko

One of North America's least liked institutions may well be imitated in Siberia. On June 15, *Komsomol'skaya pravda*¹ disclosed that the Commission for Arctic Affairs headed by the first deputy chairman of the USSR Council of Ministers, Yuri Maslyukov, is urging that "zones of restricted economic activity" be created for the native peoples of the Soviet North, who—as is now widely admitted—are facing disastrous cultural, ecological, and socioeconomic conditions. The State Commission for Arctic Affairs of the USSR Council of Ministers is circulating a preliminary report that supports the idea of establishing specially designated areas in the Soviet North to be inhabited and used by the indigenous peoples, with industrial development to be prohibited within these zones. The *Komsomol* newspaper asked, rhetorically, whether the term *rezervatsii* would be appropriate to describe what the Commission for Arctic Affairs has in mind. The answer it gave was yes, but, presumably in an attempt to minimize possible negative connotations of the term, it also noted that the direct Russian translation of the Latinate word "reservation" is *sokhranenie*, or preservation.

Bridges Over the Arctic

The State Commission for Arctic Affairs, whose formation was announced last September,² has a mandate to coordinate government policies in the Arctic region. This includes exploring the possibilities of setting up joint Soviet-foreign enterprises to prospect for gas and oil on the Arctic shelf and organizing conferences with specialists from Scandinavia, North America, and the USSR. Maslyukov's commission is also concerned with the social infrastructure of Russia's vast northern region and the quality of life of the area's indigenous and nonindigenous populations.

The Arctic commission is part and parcel of a Soviet drive to put relations with countries bordering the Arctic region on a good and constructive footing with an eye to attracting foreign investment in the Soviet North. Arctic diplomacy is proceeding apace: the "ice curtain" has melted between Magadan and Alaska; international scientific expeditions to the Arctic and sub-Arctic regions are being arranged by Soviet institutes in conjunction with scholars in Canada, the United States, Scandinavia, and Japan; international efforts are being coordinated to tackle the region's ecological problems; and, in November, the Council of Ministers of the RSFSR signed an unprece-

¹ F. Sizyi, "Drama bez okhoty," *Komsomol'skaya pravda*, June 15, 1989.

² *Nedelya*, September 9, 1988.

mented treaty of cooperation with the government of Québec, at which time high-ranking officials from the RSFSR took a close look at Eskimo schools in New Québec—and were apparently quite impressed by what they saw.³ By the end of last year, an important Soviet-Canadian conference devoted to the social and cultural problems of the northern peoples had already taken place in Québec.

Who Wants Native Reservations?

Although the native peoples of Siberia and the Far East number less than 180,000, they are the subject of intense concern in the Soviet Union. In the absence of substantial policy changes, it is argued, these peoples will enter "the Red Book" of vanished cultures. Virtually all major Russian-language newspapers have provided facts about such problems as widespread poverty, unemployment, high rates of suicide and infant mortality, short life expectancies, severe health problems, and the disappearance of these people's native languages.⁴

The idea of setting up reservations in the Soviet North did not originate with Maslyukov or the Commission for Arctic Affairs. In the past year, such a policy has been suggested on several occasions by both Russian and native Siberian commentators as the best way to prevent further exploitation of the formerly nomadic peoples by industrial ministries and to prevent the extinction of their way of life, which, for centuries, has centered on reindeer husbandry, fishing, and hunting. *Komsomol'skaya pravda* wrote that a recent scientific symposium in Tyumen, organized by the Institute of Northern Development Problems, discussed three models for the future of these peoples: nonintervention, cultural assimilation, and restricted zones. The last-named proposal appears to be carrying the day.

Many specialists and Siberian writers favor a radical alteration of current policies. They advocate giving exclusive rights over land use to a self-governing body of representatives of the native peoples. In June, a special correspondent for *Izvestia* wrote that

the peoples of the North live so differently from other nations in the country that it is not enough to guarantee them equal rights through the Constitution. They need stronger safeguards over their areas of habitation, their chosen way of life, and their rights to exercise control over their own economic development.⁵

Izvestia went on to quote and comment on a statement made by Anna Nerkagi, a writer who also pastures reindeer in the Yamalo-Nenets Autonomous Okrug:

³ *Sovetskaya Rossiya*, June 18, 1989.

⁴ For background, see Kathleen Mihalisko: RL 296/88, "Discontent in Taiga and Tundra," July 7, 1988 and "SOS for Native Peoples of Soviet North," *Report on the USSR*, No. 5, 1989, pp. 3-6.

⁵ *Izvestia*, June 15, 1989.

"I would rather live on a reservation, with police at the gates to defend our land from encroachment by the administrative departments!" . . . Her cry of despair does not imply that she wishes to cut off her people from the rest of the world. She only wants to find a way to halt her people's degradation.

Observers from among the native peoples agree that the Siberian and Far Eastern industrial boom is responsible for gradually depriving their tribesmen of traditional sources of livelihood without attracting them to highly paid new jobs in industries such as oil and gas production. Radically different arrangements are therefore needed to improve the lot of these peoples. The Khanti writer Eremei Aipin—who used a snowmobile to get around the Khanti-Mansi electoral district during his successful campaign for election to the Congress of People's Deputies⁶—is in favor of establishing closed zones for the Siberian and Far Eastern tribes and giving them a fixed percentage of the profits made by the oil, gas, fur, and timber industries.⁷ Not all indigenous northern intellectuals, however, relish the idea of reservations. The celebrated Chukchi writer Yurii Rytkeu (who has traveled in Alaska) has said that this particular method of handling nationality problems has too many negative connotations.⁸

Support for creating ecologically clean "zones of restricted economic activity" for the northern peoples is widespread among Russian ecologists and ethnographers, who point out that the destruction of the natural Siberian environment amounts to cutting off the lifeline of the Evenks, Khanti, Nentsy, and other tribes. It is impossible to understand why the idea of reservations is catching on without putting the issue in the broader context of the highly active Russian environmental movement. An earlier campaign against the Siberian water diversion project is being echoed in current efforts to save the way of life of the northern hunter and reindeer herdsman.

Some Ideological and Practical Problems

The notion of reservations along North American lines poses ideological problems even for supporters of the idea. Unlike the demands being voiced by the larger nationalities in the Soviet republics, little if anything from the legacy of Lenin can be drawn upon to justify the creation of reservations. Accordingly, although calls to set up an organization like the long-disbanded Committee of the North have been multiplying, quotations from Lenin are noticeably lacking in arguments in favor of the restricted zones—a sure sign that their proponents are in uncharted ideological waters.

Indeed, until a short while ago, any suggestion to set up reservations would have been indignantly rejected by Soviet officials as a concept utterly alien to socialism. The

⁶ Peter Conradi, "Siberian Tribes Fight for Survival Under Slogan of *Perestroika*," *Reuters*, March 15, 1989.

⁷ *Moskovskie novosti*, March 19, 1989.

⁸ As quoted in *Komsomol'skaya pravda*, June 15, 1989.