

# CHERNOBYL: A REASSESSMENT

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## Introduction

This paper returns to a topic that has virtually disappeared from international discussion outside scientific circles: the Chernobyl disaster of 1986. It forms part of a new study that attempts a reassessment of the events at Chernobyl as we approach the 20<sup>th</sup> anniversary. That anniversary will come four years after the closure of the station by the Ukrainian authorities, but also at a time when nuclear power still forms an important component of the Ukrainian energy program. One reason for a new investigation is the release of over 120 primary documents by the Ukrainian branch of the KGB.<sup>2</sup> These documents serve several useful purposes: they allow the observer to differentiate between supposition and fact in several instances, corroborating events that earlier were based—at least in part—on speculation. They allow one to perceive at first hand the workings of the Soviet structure, and specifically the relationship between the KGB and the Government Commission appointed to deal with Chernobyl. But perhaps above all, the newly released materials provide a much clearer and more composite picture of the flaws of the Soviet nuclear power industry and the way these defects were concealed from the public by official images of the operation of nuclear power. This paper cites selective documents for the reason of lack of space.

The Chernobyl accident has been the subject of numerous accounts of varying quality since its occurrence. They include official reports conducted on behalf of the International Atomic Energy (IAEA, 1991, 1997) and World Health Organization (WHO, 1995); Soviet and post-Soviet accounts (Sklyarov, 1991, G. Medvedev, 1993, Poyarkov, 2000, Vorona, 1996, Alekseevich, 1998); and Western monographs that encompass

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<sup>2</sup> *The Secrets of Chernobyl Disaster* (Minneapolis, MN: East View Information Services, 2003). Hereafter I cite the original title of each document.

scientific, social, political, and economic issues (Marples, 1986, 1988), Z. Medvedev, 1990, Josephson, 1999, Mould, 2000, Petryna, 2003). The post-accident situation had several notable highlights: the report of the Soviet delegation to the IAEA in August 1986; the trial of the station's director, chief engineer, and other officials in the summer of 1987; the revelations about the extent of the contaminated area in *Pravda* and other newspapers in the spring of 1989; the collapse of the Soviet Union, which saw control over the nuclear power station and the contaminated zones devolve to independent Ukraine (and Belarus in the case of the affected areas); the moratorium on the commissioning of new nuclear power stations by Ukraine in 1990; and not least the official closure of the Chernobyl station by Ukrainian president Leonid Kuchma in 2000, after considerable international pressure. The accident today is not a focus of world media. However, in Ukraine and Belarus, the most affected republics, it continues to elicit concern and high emotions. In Kyiv there is a well-organized commemorative museum in the Podil region of the old town. On significant anniversaries—the last was the 15<sup>th</sup>—Chernobyl becomes again the object of articles and commemoration.

With the passage of almost two decades since the accident, there might be some question as to why analysts should return to the subject, and as to what the documents released by the Ukrainian KGB can possibly add to the picture already gleaned. Yet the fact is that there is still no consensus about the results of the accident, particularly its health impact, the casualties, and whether the Soviet authorities responded in an appropriate way. Chernobyl, for a time, ranked alongside the Great Patriotic War, as a symbol of a united people struggling against the elements (in the Chernobyl case, this was a literal meaning). Though the Ukrainian KGB collection has now been made public, to my knowledge no scholars have used the documents in an academic publication. Yet they merit close attention, both for corroboration of existing knowledge and the introduction of new information that elucidates our understanding of the confused and chaotic situation after the destruction of the fourth reactor at Chernobyl.

From a personal perspective, when I first visited Chernobyl in the summer of 1989, the authorities at Chernobyl (the leaders of the Pripyat Industrial Association, led at

the time by a leader from the local Komsomol, Pavel Pokutniy) had already obtained a copy of my first book, *Chernobyl & Nuclear Power in the USSR* which, they claimed, had been far too critical of the Soviet response to the unprecedented and unforeseen accident (Marples, 1986). The criticism of what I had written was offered in friendly fashion, but soon belied by the scenes that I could witness from the window of the official bus that took me from the town of Chernobyl, into the 30-kilometer zone, to the plant and to the abandoned city of Pripyat. Cleanup crews littered the roadside, none in protective clothing, many smoking by signs that read “Danger! Radiation!” In Pripyat, I was informed that the radiation levels after the accident never warranted an evacuation. I was advised that food grown in hothouses there was safe to eat. Dogs and other animals roamed freely (despite the order to destroy dogs, see below). The overall impression gleaned was that Chernobyl was an accident that was troublesome, but had been overcome by the efforts of the entire Soviet people, through bravery and self-sacrifice. Second, however, the official attitude was that the accident became unavoidable because of a remarkable combination of human errors.

Gradually the root causes of the Chernobyl accident became more evident. This is not the place to delve into them in detail as by now they are well known. More important to this study is the functioning of the industry at the time of the accident. This paper seeks answers to several questions: was safety the paramount question in the operation of Soviet nuclear power stations? Were there indications that a major accident was likely prior to Chernobyl? Were there previous accidents? What differences were there between official reports released in the early weeks and months after the accident and the reality as encapsulated in the KGB reports? Can one evaluate better today the efforts of the Soviet government to deal with the consequences of something of such magnitude? How was the evacuation handled? Did the government inform people of the dangers of high-level radiation? In answering such questions, it is important also to avoid being retrospective, or suggesting that because the Soviet government was to fall less than six years later, that signs of fallibility and inherent weakness were all too evident. The use of such hindsight would be to neglect the fact that the Soviet government actually gained considerable international prestige and sympathy through its response to the Chernobyl

disaster, and this despite the fact that for the most part it rejected foreign assistance. Finally, there is a national dimension to this question in that the documents depict the responses of republican officials to the central authorities in Moscow, with the latter always having control. The KGB headquarters in the town of Chernobyl was in fact directly subordinated to Moscow. Nuclear power was the prerogative of the central authorities, and the Chernobyl plant, which had been part of the military program, fell within the domain of the USSR Medium of Machine Building. Very little in the Chernobyl story belongs to the Ukrainian leadership, with the notable exception of the republican KGB, and the task of the latter was to report rather than make decisions. The local Ukrainian leaders, V.V. Shcherbytsky and O.P. Lyashko (party leader and premier respectively), to my knowledge only visited the environs of the accident on one occasion (on August 29, 1986). Thus the present study also highlights the servile relationship of the republic to the Moscow center in the spring of 1986: the one was impotent, the other—it transpires—was fundamentally incompetent.

#### Early Problems at the Chernobyl Plant Site

The location of Chernobyl as a site for future nuclear reactors was decided upon in 1970. Located on the left bank of the Pripyat River in Kyiv Oblast, northern Ukraine, 137 kilometers north of the capital city of Kyiv, it was anticipated to expand to 4,000 megawatts, i.e. to four reactors, with personnel housed in a new city, Pripyat, about 2 miles to the north of the station. An early model of the canal-type nuclear reactor—the Beloyarsk nuclear power station—demonstrated that canal-type nuclear reactors (the RBMK or graphite-moderated reactor type) provided minimal release of radiation because of the relatively short delivery time of coolant to the reactor core.<sup>3</sup> In March 1970, the Minister of Energy traveled to the site to take part in a ceremony of laying the foundation stone. The operation of the first unit at Chernobyl was delayed by approximately a year because of poor supply of equipment to the site from various factories. During an inspection of several pipes in 1976, several cracks were found, and

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<sup>3</sup> “Dovidka pro osnovni inzhernerno-tekhnichni kharakteristiki proektu Chornobyl’s’koi AES,” [Report note about the basic engineering technical characteristics of the plan for Chornobyl nuclear power station], September 19, 1971, DA, SBU, F.65m Spr. 1, T.5, Ark. 2-9.

the plant's director (Bryukhanov) and chief construction engineer (Lukov) were criticized for the failure to return defective pipes to the factory. A pump factory at Sumy and brick works in Kyiv region were singled out for failure to supply pumps in the first instance and low quality tile and brick, inadequate to withstand the sort of pressure expected during the operation of a nuclear plant.<sup>4</sup>

In October 1977, nonetheless, the first reactor came into operation, with a second unit—built a twin using the same building—on line the following year. On 17 January 1979, V.V. Fedorchuk, chairman of the Ukrainian SSR KGB, sent a confidential report of violations in the construction of the Chernobyl station to the Central Committee of the Communist Party of Ukraine (CC CPU). The report pertained to the construction of the second unit, and to defects in the building of the machine hall, as well as problems with the laying of concrete, and a critical situation with regard to the doorway passages of the power station. In the first nine months of 1978, as a result of the lack of control over technical safety, 170 workers were injured in accidents. In September and October of this same year, fires broke out in the ventilation shaft of the third reactor unit, then just starting construction.<sup>5</sup> One of the difficulties was the acute labor shortage during this period, as well as a dearth of skilled labor. Head of the building department, V.T. Kizima, pointed out the gap between the level of construction and its quality. However, he had been given a rigid timetable, which necessitated the almost total neglect of the regular infrastructure of a nuclear power station. Further, workers at Chernobyl were engaged in 'socialist competition' with their counterparts at the Kursk station in south Russia. Prior to the first reactor coming on stream, about 10,000 workers were employed on the

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<sup>4</sup> "Spetsial'ne povidomlennya UKDB pry RM URSSR po m. Kyievu ta Kyivs'kii oblasti do KDB pry RM URSSR pro systematychni porushennya tekhnolohii provadzhennya budivel'no-montazhnykh robot na okremykh dilyankakh budivnytstva Chornobyl's'koi AES" [Special information of the Ukrainian KGB with the Council of Ministers Ukrainian SSR for the city of Kyiv and Kyiv region to the KGB with the Council of Minister Ukrainian SSR about systematic violations of the technological regimen of construction-assembly work on certain sections of the construction of Chornobyl AES," August 17, 1976, DA SBU, F.65, Spr. 1, T.5, Ark. 12-15.

<sup>5</sup> "Dopovyidna zapyska KDB URSSR do TsK KPU po systematychni porushennya tekhnolohii provadzhennya budivel'no-montazhnykh robot na okremykh dilyankakh budivnytstva Chornobyl's'koi AES" [Report note of the KGB Ukrainian SSR to the Central Committee of the Communist Party of Ukraine about systematic violations of the technological regimen of construction-assembly work on certain sections of the construction of Chornobyl nuclear power station], January 17, 1979, DA SBU, F.16, Op. 17 (1985), Spr. 42, Ark. 247-248.

Chernobyl project, 50% of which were young people, with little to occupy their leisure hours outside the working day (*Literaturna Ukraina*, July 23, 1976)..

Between 1979 and 1980, the Pripyat and Chernobyl party organizations noted 136 individual and 3 collective letters and statements complaining about poor conditions of residence. The complaints had been sent to various locations, but the majority was directed to the USSR Ministry of Energy and Electrification, which carried the responsibility for supervising the operation of nuclear power stations in the country. One collective letter signed by 195 women demanded the construction of a kindergarten in the city of Pripyat. In 1980, the plan was to build over 51,000 cubic meters of residence, but less than one-third of that amount was actually built. A key concern was housing for workers of the “Yupita” factory, whose work timetable centered on the need to complete the third Chernobyl unit by the time the 26<sup>th</sup> Congress of the CC CPSU opened. Paradoxically, as more workers were hired to ensure that the schedule was maintained, the standards of accommodation dropped alarmingly, resulting in overcrowding and unsanitary conditions.<sup>6</sup> Thus both in terms of quality of equipment at the station, and the living quarters of the builders, much was left to be desired and quality was sacrificed in the interests of speed. However, the youthful workers reportedly lacked discipline, often consumed alcohol and took excessive breaks during the day. Many were said to arrive late for work (*Literaturna Ukraina*, July 23, 1976).

The early operation of the station was fraught with emergency shutdowns that were attributed to the poor quality or malfunctioning of equipment. In the period 1977-1981, for example, there were 29 emergency shutdowns, 8 of which were attributed to human error, and the remainder due to technical flaws. Often, the problem occurred with power supply, and the dangers that were apparent with sudden reductions of power of the RBMK reactor. There were also flaws in the turbines manufactured at the Kharkiv Turbo-generator factory, affiliated to the Ministry of Energy Machine Construction, and these

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<sup>6</sup> “Dovidka UKDB URSR po m. Kyievu ta Kyivs’kii oblasti pro nezadovil’nyi stan zhytlovoho ta inshoho zabezpechennya budivel’noho i ekspluatatsiinoho personalu Chornobyl’s’koho AES” [Report note of the Ukrainian KGB for the city of Kyiv and Kyiv oblast about the unsatisfactory state of residential and other provisions for the building and operating personnel of Chornobyl nuclear power station,” August 26, 1980, DA SBU, F.65, Spr. 1, T.5, Ark. 38-40.

alone led to three emergency shutdowns in the year 1981.<sup>7</sup> A builder involved in the project and subsequently a resident of Israel, noted after the 1986 accident that the turbines and the piping at Soviet nuclear stations were no different from those at coal-fired power stations and were lacking in sophistication (Associated Press, May 1, 1986). Similarly, the first energy unit had experienced an emergency shutdown in September 1981 because of the failure of the main safety valve. The authorities singled out the Chekhov factory (Moscow region), as the producer of the valve, as carrying the main responsibility for this problem.<sup>8</sup>

On September 9, 1982, a serious accident occurred during a test on the first reactor prior to a scheduled shutdown. When the power of the reactor was raised to 20% of its peak level, one of the canals ruptured. Initially, the KGB chief of Kyiv city and region, N.K. Vakulenko, saw little reason for alarm. On the following day, he noted that the emergency situation had not led to contamination and that five days would be required for repairs.<sup>9</sup> By 14 September, in a document signed by the chairman of the Ukrainian KGB, S. Mukha, this term was raised to 10 days and the Ukrainian KGB was seeking those responsible, with some suspicion that there may have been “hostile intent” on the part of the perpetrators.<sup>10</sup> Gradually the authorities recognized that the radiation situation was out of control. In the reactor compartment on this same day, the radiation level was reported to be 100 times above normal, and virtually uninhabitable. The Soyuzatomenergo industrial association, responsible for the operation of the Chernobyl

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<sup>7</sup> “Dopovidna zapyska UKDB URSSR po m. Kyievu ta Kyivs’kii oblasti do KDB URSSR pro nedostatnii riven’ nadiinosti kontrol’no-vymiryval’nykh pryladiv system zakhystu Chornobyl’s’koi AES” [Report note of the Ukrainian KGB for the city of Kyiv and Kyiv Oblast to the KGB Ukrainian SSR about the insufficient level of reliability of the control-measurement devices for the protective system of Chornobyl nuclear power station,” October 16, 1981, DA SBU, F.65, T.5, Ark. 126-129.

<sup>8</sup> Ibid.

<sup>9</sup> “Povidomlennya UKDB URSSR po m. Kyievu ta Kyivs’kii oblasti do Druhoho Holovnoho upravlinnya KDB SRSR ta 2-ho Upravlinnya KDB URSSR pro avariinu zupynku 9 veresnya 1982 r. energobloka No. 1 Chornobyl’s’koi AES” [Information of the Ukrainian KGB for the city of Kyiv and Kyiv Oblast to the Second Chief Department of the KGB USSR about the accident hold-up of 9 September 1982 at the first reactor unit of Chornobyl nuclear power station,” September 10, 1982, DA SBU, F.65, Spr. 1, T.5, Ark. 164.

<sup>10</sup> “Informatsiine povidomlennya KDB URSSR do TsK KPU pro avariinu zupynku 9 veresnya 1982 r. enerhobloka No. 1 Chornobyl’s’koi AES” (Information of the Ukrainian SSR KGB to the Central Committee of the Communist Party of Ukraine about the accident stoppage of 9 September 1982 at the first reactor unit of Chornobyl nuclear power station), 14 September 1982, DA SBU, F.65, Spr. 1, T.5, Ark. 164.

nuclear plant, ordered the creation of a government commission to investigate the causes of the accident, chaired by the head of the association, Gennadiy Veretennikov.<sup>11</sup>

By late October 1982, a top secret report from Vakulenko to Mukha acknowledged that an area up to 14 kilometers north-east from the station had been contaminated, as well as one 5 kilometers to the southwest. Vegetation and topsoil had been polluted while hot particles containing uranium had been discovered in the latter region. At this time the authorities did not know how much radiation had been released.<sup>12</sup> Only on 5 November, two months after the accident was a report filed to Ukrainian party chief and Soviet Politburo member, V.V. Shcherbytsky and marked ‘top secret’. By this time, the quality of the air was said to be normal again, but radioactive particles and hotspots of Cerium-144, Cesium-134, Cesium-137, and other radio-nuclides had been found in the farming community of Chystohalivka, 5 kilometers from the station. Here radioactivity in the soil was “hundreds of times over the permitted norms” and posed the greatest danger of penetration into the human organism and causing serious illness. Rainfall at the time had led to radioactivity in the station’s coolant reservoir, an area used widely for fishing by locals. The local KGB expressed its satisfaction that no panic had occurred in local communities. KGB workers had been dispatched from Kyiv city and region to help deal with the crisis. The greatest danger to the population, it was reported, is posed by the “hot particles, which might penetrate the respiratory glands, or get inside the organism by various means and cause serious consequences, including death (no deaths are cited).<sup>13</sup>

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<sup>11</sup> “Povidomlennya UKDR URSR po Kyievu ta Kyivs’kii oblasti do KDB SRSR ta KDB URSR pro radioaktyvne zabrudennya vyrobnychnoi dilyany Chornobyl’s’koi AES vlasidok avarii 9 veresnya 1982r.” [Information of the Ukrainian KGB for the city of Kyiv and Kyiv Oblast to the KGB USSR and KGB Ukrainian SSR about the radioactive contamination of the production section of the Chornobyl nuclear power station as a result of the accident of September 9, 1982,” DA SBU, F.65, Spr. 1, T.5, Ark. 197-198.

<sup>12</sup> “Dopovidna zapyska nachal’nyka UKDB URSR po m. Kyievu ta Kyivs’kii oblasti holovi KDB URSR po radiatsiinu obstanovku shcho sklalasya u raioni roztashuvannya Chornobyl’s’koi AES vnaslidok avarii 9 veresnya 1982 r.” [Report note of the head of the Ukrainian KGB for the city of Kyiv and Kyiv oblast to the head of the KGB Ukrainian SSR on the radiation situation that has occurred in the region around the Chornobyl nuclear power station as a result of the accident of September 9, 1982], October 30, 1982, DA SBU, F.65, Spr. 1, T.5, Ark. 239-242.

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The documents are silent thereafter on the aftermath of the early accident, other than a report of October 1984 declaring that the first and second units were unsafe because they could not provide adequate protection from leaks of radiation. Paradoxically, the report then assured the recipient that units 3 and 4—built as twin reactors that shared a turbine hall—did have such protection and were thus more reliable.<sup>14</sup> Information about the accident on September 9, 1982, never reached the Soviet public or the international media. Like other accidents of the period, it was carefully concealed. The reports, nevertheless, provide remarkable testimony. They indicate that the tragic accident in April 1986 was essentially a repeat performance: once again a test on equipment during a scheduled shutdown; once again an attempted cover-up; and this time resulting in the enforced removal of a population oblivious to the earlier contamination of land around the reactor unit. If the area to the north-east of the station had been irradiated, then the fallout could hardly have missed the town of Pripyat, home to an estimated 20,000 plant personnel at this time (45,000 by 1986). The reports bemoan the lack of adequate equipment to deal with the situation. It seems unlikely that Chystohalivka (which is today inside the evacuated 30-kilometer zone around the now defunct Chernobyl station) was an isolated area of fallout. Leaders of the Laboratory of Radiation Biophysics at the Ukrainian Institute of Nuclear Research and specialists from the nuclear plant declared the need for a “competent commission” to make a more thorough study of radiation conditions. It is not clear whether such a commission was ever assembled in 1982, but it was the first step taken in late April 1986.

By the mid-1980s, with four reactors on line, the attention of the authorities began to focus on completion of construction of the fifth reactor, thus extending the station beyond its original proposed capacity in order to build two more reactors as a twin unit, i.e. Chernobyl-5 and Chernobyl-6. Unit five was scheduled to come into service in the

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<sup>14</sup> “Spetsial’ne povidomlennya UKDB URSR po m. Kyievu ta Kyivs’kii oblasti do 6-ho Upravlinnya KDB URSR pro vyavleni nedoliky proektuvannya 3-ho ta 4-ho enerhoblokiv Chornobyl’s’koi AES” [Special information of the Ukrainian KGB for the city of Kyiv and Kyiv Oblast to the 6<sup>th</sup> Department of the KGB Ukrainian SSR about perceived defects in the plans for the third and fourth reactor units at the Chornobyl nuclear power station], March 17, 1984, DA SBU, F.65, Spr. 1, T.32, Ark. 5-6.

fourth quarter of 1986, but none of the problems that had beset the earlier units—poor equipment, cracks in tiles and rails, poor thermo-isolation design, and numerous defects in fire-prevention standards—had been eradicated.<sup>15</sup> What irked the authorities the most was the fact that the constant stoppages due to equipment failures led to a drop in the overall production of electricity. Compounding the problem was the unpredictability of supply and demand of the united power grid, which made heavy demands on the station in the winter months. In the view of the leading specialists of the station, every fall in reactor power had a negative impact on the reactor's reliability and longevity of operation. It also resulted in a partial “burnout” of reactor fuel.<sup>16</sup> By early 1986, the authorities began to focus on problems at the fifth reactor unit, now so close to coming into service, and specifically those linked to construction work in the final stages.

This emphasis and concern appears to have leaked to the local media. The now famous article by journalist Lyubov Kovalevskaya in *Literaturna Ukraina* (March 27, 1986) is very similar to a secret document issued by the 6<sup>th</sup> Department of the Ukrainian KGB for the city of Kyiv and Kyiv Oblast on technical violations during the construction of the fifth reactor unit, issued on February 27 of this same year. The Kovalevska article has often been regarded as prophetic, coming one month before the major accident at Chernobyl. However, the more complete picture offered by the KGB documents demonstrates that the concern was longstanding, and possibly ritualistic, in that the same complaints had been echoed for the previous decade, evidently with little real possibility of rendering nuclear power stations safer and better constructed. The KGB document

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<sup>15</sup> “Spetsial’ne povidomlennya 6-ho Upravlinnya KDB URSSR do 5-ho viddilu 6-ho Upravlinnya KDB SRSR pro osnovni nedoliky proektuvannya 3-ho, 4-ho, ta 5-ho enerhoblokiv Chornobyl’s’koi AES” [Special information of the 6<sup>th</sup> Department of the KGB Ukrainian SSR to the 5<sup>th</sup> Section of the 6<sup>th</sup> Department of the KGB USSR about fundamental errors in the planning of the third, fourth, and fifth reactor units of the Chornobyl nuclear power station,” July 18, 1985, DA SBU, F.65, Spr. 1, T.32, Ark. 96-97.

<sup>16</sup> “Spetsial’ne povidomlennya 6-ho viddilu UKDB URSSR po m. Kyievu ta Kyivs’kii oblasti do 3-ho viddilu 6-ho Upravlinnya KDB URSSR pro mozhlivi nehatyvni znyzhen’ potuzhnosti enerhoblokiv Chornobyl’s’koi AES” [Special information of the 6<sup>th</sup> Section of the KGB Ukrainian SSR for the city of Kyiv and Kyiv Oblast to the 3<sup>rd</sup> Section of the 6<sup>th</sup> Department of the KGB Ukrainian SSR about possible negative capacity reduction of the reactor units of Chornobyl nuclear power station,” February 4, 1986, DA SBU, F.65, Spr. 1, T.32, Ark. 167-168.

speaks of “crude violations” during the construction of the fifth unit<sup>17</sup> and a familiar litany of defects of equipment and technology. It forms the prelude to the accident of April 26, 1986 and the immediate response to it within the Soviet Union; actions that even two decades later are still the subject of lengthy debate and conjecture. What do the KGB documents tell us that adds to our knowledge of the Chernobyl accident?

## The Chernobyl Accident and Aftermath

In order to convey the provision of information about the disaster that occurred on the night of April 25-26, 1986, the accounts of the KGB will be contrasted with Soviet media reports. For the first two days of the accident, the latter were completely absent, but the Ukrainian KGB informed its Moscow counterpart immediately about the event to the extent of its knowledge. The first report, on April 26, declared that an explosion had occurred during the execution of tests on two turbo-generators during a planned repair period, and that a fire had spread to the roof of the third reactor unit. The roof cover of the fourth reactor and of the machinery hall had been destroyed. During the tests, 17 shift workers were present, 9 of which were hospitalized, and 4 of which were in critical condition, including one on life support. Radiation levels were reported at 20-25 micro-roentgens per second on the territory of the station and 4-14 mr/sec in the city of Pripjat. The third unit had been shut down, but units 1 and 2 remained in service, and a Ukrainian KGB operative group had arrived at the accident scene.<sup>18</sup>

A second report on the same day provided further details, describing the rise of the radiation levels to 100 mr/sec in the region of the nuclear plant. The first two

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<sup>17</sup> “Spetsial’ne povidomlennya 6-ho viddilu UKDB URSR po m. Kyievu ta Kyivs’kii oblasti do 3-ho viddilu 6-ho Upravlinnya KDB URSR pro porushennya tekhnolohii provadzhennya budivel’nykh robit pry sporudzhenni 5-ho enerhobloka Chornobyl’s’koi AES” [Special information of the 6<sup>th</sup> Section of the KGB Ukrainian SSR for the city of Kyiv and Kyiv Oblast to the 3<sup>rd</sup> Sevtion of the 6<sup>th</sup> Department of the KGB Ukrainian SSR about the violations of the technological regimen of construction work with the building of the 5<sup>th</sup> reactor unit at Chornobyl nuclear power station,” February 26, 1986, DA SBU, F.65, Spr. 1, T.32, Ark. 169-170.

<sup>18</sup> “Povidomlennya UKDB URSR po m. Kyievu ta Kyivs’kii oblasti do KDB SRSR ta KDB URSR po vybukh 4-ho enerhobloka Chornobyl’s’koi AES” [Information of the KGB Ukrainian SSR for the city of Kyiv and Kyiv Oblast to the KGB USSR and KGB Ukrainian SSR on the explosion at the fourth reactor unit of Chornobyl nuclear power station,” April 26, 1986,” DA SBU, F.65, Spr. 1, T.34, Ark. 2-3.

casualties were cited: V.N. Shashenok (born 1951) was dead, and the senior operator of the reactor department, V.I. Khodemchuk (born 1951) was missing. The KGB units at other nuclear power stations in Ukraine (Zaporizhzhya, Rivne, Mykolaiv stations) were put on high alert. The situation in Pripyat and other population settlements was said to be “under control.” The CC CPU had been informed about the accident. The report repeated the information about the 9 casualties, saying that 3 of them were in critical condition (presumably the reduction by one was accounted for by the death of Shashenok). Construction work on units 5 and 6 had been “stopped temporarily” and Saturday, April 26 declared a day off (!). The report was signed by the Chairman Mukha.<sup>19</sup> There are no more reports until May 1. However, in the interim, information appeared both in the official media and in ruling circles in Moscow.

On April 28, Radio Moscow made the very brief announcement:

An accident has occurred at the Chernobyl nuclear power plant—one of the atomic reactors has been damaged. Measures are being undertaken to liquidate the consequences of the accident. Those affected are being given aid, and a government commission has been created.

This statement occurred after Swedish authorities discovered radiation on the shoes of workers entering a nuclear power station near Stockholm, and concluded that the origin must have been a station within the USSR. In Moscow meanwhile, an Operative Group of the Politburo CC CPSU on questions connected with the liquidation of the consequences of the accident at Chernobyl nuclear power station held a meeting in Moscow. It included Politburo members N.I. Ryzkov, E.K. Ligachev, V.I. Vorochnikov, and V.M. Chebrikov, Candidate members V.I. Dolgikh and S.L. Sokolov, and Minister of Internal Affairs, A.V. Vlasov. Those gathered issued a Protocol on April 29 to accept reports already offered by relevant agencies regarding the accident situation, including those of Dolgikh on the situation arising from the explosion, Yury Izrael, chairman of the State Committee for Hydrometeorology on radiation levels, and S.P. Burenkov, USSR

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<sup>19</sup> “Povidomlennya KDB URSR do KDB SRSR pro vybukh 4-ho enerhobloka Chornobyl’s’koi AES” [Information of the KGB Ukrainian SSR to the KGB USSR about the explosion at the fourth reactor unit of Chernobyl nuclear power station,” April 26, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 2-4.

Health Minister, on medical services. Reports had also been issued on the application of civil defense forces by the Chairman of Civil Defense of the USSR, A.G. Altunin and about the evacuation of the city of Prip'yat, by Vlasov. Other concerns included passengers who had alighted from a train in the zone around the nuclear reactor, dispatching a brigade of chemical troops to the area, as well as the supply of food packages for the population living in the fallout zone.<sup>20</sup> In a follow-up Protocol issued the next day, there was a cryptic message about the need to remove foreign students from England, France, and Italy that were studying in Kyiv and Minsk, on the advice of G.A. Yagodin, the Minister of Higher and Middle Specialized Education of the USSR.<sup>21</sup>

The authorities had evidently reacted quickly to the news of a major accident. It was hardly surprising given their previous experience of a serious mishap at Chernobyl. At the same time news filtered to the public only in small segments. The date April 29 saw the first mention of the Chernobyl accident in the official media, including in Kyiv-based newspapers such as *Pravda Ukrainy*, where it was to be found at the lower part of page 3, as the editors allotted priority to an article about two pensioners who needed to install a telephone in their home. Elsewhere it was to be found below news about a chess contest and the soccer league tables. On this same day, TASS announced that an accident had occurred, and that a Government Commission had been established, headed by Deputy Chairman of the USSR Council of Ministers, Boris Shcherbina, and including heads of ministries and departments. Two people had been killed, the remaining three reactors had been shut down, and residents of Prip'yat and other nearby settlements had been evacuated. Radio Moscow offered a commentary the same day on the 1979 accident at the Three Mile Island plant in Pennsylvania, which had been caused by “criminal neglect” of the plant owners for proper safety measures and had resulted in the leakage of radiation into the atmosphere. The program continued with an attack on the escalation of nuclear weapons in Western countries. This was to be a familiar tactic in the days following Chernobyl.

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<sup>20</sup> “Protokol No. 1: zasedaniya Operativnoy gruppy Politbyuro TsK KPSS po voprosam svyazannym s likvidatsiyei posledstviy avarii na Chernobyl'skoy AES” [Protocol No. 1: meeting of the Operative Group of the Politburo CC CPSU on questions connected with the liquidation of the consequences of the accident at Chernobyl nuclear power station,” April 29, 1986, cited in Yaroshinskaya, 1992, pp. 250-252.

<sup>21</sup> *Ibid.*, p. 252.

Prior to the visit of Politburo leaders Ryzhkov and Ligachev to Chernobyl on May 2, the local authorities had focused on the evacuation of an area 10 kilometers in radius around the destroyed reactor unit. The fourth Protocol of the Operative Group with CC CPSU Politburo heard the report of the two leaders, and made further recommendations, including the use of Moscow's No. 6 Clinic for people who had received high radiation doses. Special concern was given to the radiation situation in the city of Moscow, and First Deputy Chairman of the State Committee for Hydrometeorology, Yu.S. Sedunov, was ordered to provide a daily report, and together with the Minister of Health and Civic Defense of the USSR to ensure strict radiation control at airports, railway stations, on roads, and at all points of entry to Moscow.<sup>22</sup> This statement precedes a brief comment on the need to monitor the radiation situation in Ukraine and Belarus! By May 4, the Politburo meetings reveal that 1,882 people had been hospitalized following the examination of some 38,000 people. Radiation sickness had affected 204 people, including 64 children, and 18 people were seriously ill. The Ukrainian SSR medical establishments had made ready 1,900 beds for patients suffering from the effects of Chernobyl.<sup>23</sup> We also know from several sources that Ryzhkov and Ligachev recommended the extension of the 10-kilometer zone to one of 30 kilometers.

While these measures were being adopted in Moscow, the republican KGB concentrated its attention on several issues. First and foremost it was occupied with how such an accident could have occurred. It formed an investigative group that interrogated 38 people, confiscated documents and photocopied them, as well as tape recordings made by the station operators. On May 1, it was noted that the fourth reactor operated in an unusual regime because of tests on the turbo-generator, carried out "without official consent from the design organization." The test had been authorized by the plant's chief

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<sup>22</sup> "Protocol No. 4: zasedaniya Operativnoy gruppy Politbyuro TsK KPSS po voprosam, svyazannym s likvidatsiyey posledstviy avarii na Chernobyl's'koy AES" [Protocol No. 4: meeting of the Operative Group of the Politburo CC CPSU on questions connected with the liquidation of the consequences of the accident at Chernobyl nuclear power station], May 3, 1986, cited in Yaroshinskaya, 1992, p. 260.

<sup>23</sup> "Protocol No. 5: zasedaniya Operativnoy gruppy Politbyuro TsK KPSS po voprosam, svyazannym s likvidatsiyey posledstviy avarii na Chernobyl's'koy AES" [Protocol No. 5: meeting of the Operative Group of the Politburo CC CPSU on questions connected with the liquidation of the consequences of the accident at Chernobyl nuclear power station], May 4, 1986, cited in Yaroshinskaya, 1992, p. 264.

engineer N.M. Fomin and approved by his deputy A.S. Dyatlov, who took part in the test and was hospitalized in the Moscow clinic after the accident. The test supervisor was not a nuclear specialist: G.P. Metlenko was a brigade engineer from the Dontekhenergo association.<sup>24</sup> It also observed the evacuation campaign, noting that 9,864 people, along with 12,180 head of cattle had been removed from the 10-kilometer zone by May 3, and that the dates May 4 and 5 had been set aside for the complete evacuation of the 30-kilometer zone. Forty-six people had been hospitalized in Kyiv, including 40 from Ivankiv district, 3 from Polis'ke, and 3 from Chernobyl.<sup>25</sup>

The KGB also reported on radiation levels at the accident site, noting that over the reactor face, radiation levels on May 1 reached 80 roentgens per hour, in Pripyat 200 micro-roentgens per hour, and in the town of Chernobyl, up to 70 micro-roentgens (the average background level is reported as 0.013 micro-roentgens per hour).<sup>26</sup> By May 4, there was little change in the levels over the reactor, while the levels at Chernobyl town had fallen to 17 mr/hour. A dramatic rise in radiation levels had taken place over the city of Kyiv, with a level that reached 700 mr/hour.<sup>27</sup> The reason would have been the change in the wind direction that occurred in early May. On May 8, 12 days after the accident, the levels were still rising, and reached 800 mr/hr in Pripyat. On this same day, at the entrance to the station's industrial zone, the level was monitored at 2 roentgens per hour; at the third unit, 60 roentgens per hour; and at the approach to the fourth reactor, 400 roentgens per hour. At certain places on the roads around the destroyed unit, levels of 1,000 roentgens per hour were recorded, a level that was almost 77,000 times higher than

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<sup>24</sup> "Povidomlennya Operhrup KDB SRSR ta KDB URSSR pro khid robit z likvidatsii naslidkiv avarii na Chornobyl's'kii AES" [Information of the Operative Group KGB USSR and the KGB Ukrainian SSR about the course of work for liquidation of the consequences of the accident at Chornobyl nuclear power station], May 1, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 23-27.

<sup>25</sup> "Dovidka 6-ho Upravlinnya KDB URSSR pro khid robit z likvidatsii naslidkiv avarii Chornobyl's'kii AES" [Report note of the 6<sup>th</sup> department of the KGB Ukrainian SSR about the course of work for liquidating the consequences of the accident at Chornobyl nuclear power station," May 4, 1986, DA SBU, F.65, Spr. 1, T.34, Ark. 80-81.

<sup>26</sup> "Povidomlennya Operhrup," May 1, 1986.

<sup>27</sup> "Dovidka 6-ho Upravlinnya," May 4, 1986.

the average background norm! The document makes it clear that May 4 saw the first detailed inspection of the territory around the reactor by dosimetric personnel.<sup>28</sup>

By May 11, the Operative Group of the Ukrainian KGB at Chernobyl was able to send a top secret report to the chairman of the republican KGB, Comrade Mukha that provided an interesting synopsis of the situation. It pointed out that an analysis of materials obtained during the investigation both by operative means and through private conversations with specialists allowed for the following conclusions. The accident had occurred as a result of a series of crude violations of operative and technical rules, and the lack of attention to security procedures during the operation of Chernobyl's fourth reactor. Even as an explosion occurred, workers from the Kharkiv union "Turboatom" and the Horlivka enterprise "Dontekhenergo" were conducting experiments on the reactor and turbine in operation. The explosion destroyed the roof and likely the walls of the reactor, and radioactive fragments had been scattered up to the city of Pripyat and its railway station. The investigation revealed that two explosions took place, and the second was one of enormous power, accompanied by a bright flash and a noise like thunder. The fire extinguishing equipment was destroyed by the accident, hampering the attempts to put out the fire. A radioactive cloud formed above the reactor, but the station lacked automatic dosimetric devices with which to measure its radioactivity. This omission resulted in a failure to evaluate the situation in timely fashion and to take urgent emergency measures. Noting the critical radiation levels in the city of Pripyat, the authorities decided to inspect several hundred people, who were offered aid, with some being sent to the specialist No. 6 clinic in Moscow and others to Kyiv.<sup>29</sup>

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<sup>28</sup> "Povidomlennya 6-ho Upravlinnya KDB URSS do KDB SRSR pro radiatsiinu obstanovku ta khid rozsliduvannya avarii na Chornobyl's'kii AES" [Information of the 6<sup>th</sup> Department of the KGB Ukrainian SSR to the KGB USSR about the radiation situation and course of investigation of the accident at the Chernobyl nuclear power station," May 8, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 44-47.

<sup>29</sup> "Spetsial'ne povidomlennya nachal'nyka OG KDB URSS u m. Chornobyli holovi KDB URSS" [Special information of the head of the Operative Group of the KGB Ukrainian SSR in the city of Chernobyl to the chairman of the KGB Ukrainian SSR," May 11, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 208-211.

The same source also outlined the preventive measures taken during the immediate crisis. On April 27, workers had been evacuated from the Chernobyl station. Though no chain reaction had been observed in the uranium fuel, graphite continued to burn and radioactive particles were being released into the atmosphere. Since the reactor contained up to 1,500 tons of graphite that could conceivably continue burning for over two months, a decision was made to cover the core with a special mixture of sand, clay, lead, and dolomite. Subsequently, 4,000 tons of this mixture were deposited from helicopters by May 8, and on May 7-8 gaseous nitrogen was pumped into the lower part of the reactor hall. These operations reportedly led to a drop in temperature from 2,000C to 300C. The report also noted that iodine isotopes predominated among the released radioactive particles. The remainder of the document focused on decontamination work, noting after citation of the well-known protective measures, the dangers caused by vehicles entering the zone, and the need to identify every vehicle that had visited the Chernobyl zone from April 26 to May 10 (likely an impossible demand). All roads to Kyiv had to be carefully controlled, as well as the state of reservoirs, especially emanating from the Dnipro River. The report demanded a special monitoring of children who were most sensitive to radioactive iodine.<sup>30</sup> Dogs in the zone—many of which were without owners—were to be exterminated.<sup>31</sup>

By May 19, the chief deputy of Department 6 of the Ukrainian KGB, General-Major G.V. Kuznetsov, cited five major priorities for work of the Government Commission:

- 1) The design of a protective shell—sarcophagus—over the destroyed reactor unit;
- 2) The construction of a cable pathway for the delivery of construction materials;
- 3) Measures to prevent the passage of contaminated water into the Pripyat and Dnipro rivers;
- 4) The gathering of highly radioactive substances into containers, and their storage in specially equipped tombs;

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<sup>30</sup> This provision came far too late, as Iodine-131 has a half-life of 8 days. Thus the bulk of the damage to the thyroid glands of children would have occurred between April 26 and May 4, one week before this report was issued.

<sup>31</sup> “Spetsial’ne povidomlennya nachal’nyka OH KDB URSR,” May 11, 1986.

- 5) The decontamination of polluted areas, and especially the highly contaminated forest zone situated close to the nuclear station.<sup>32</sup>

Within three days, it was reported that engineers from the USSR Ministry of Defense were chopping trees on the road that passes through the area with a highly contaminated forest. However, in other respects, the causes for concern were mounting. One village in Polis'ke region, Koshylivka, located 70 kilometers from the Chernobyl station, had reported increased levels of radiation (4 mr/hr in the air and 6 mr/hr in the soil) that led to the relocation of 64 families.

For the evacuees, the move turned out to be troubling and of a temporary nature in the initial instance. A study of over 1,800 evacuees from Pripyat found them occupying five settlements in Polis'ke region (Kyiv Oblast). The biggest problem they had was accommodation, and the situation was to worsen when women and children returned from their vacations. By late June 1986 they had begun to demand the return of their valuables in Pripyat, such as furniture and home utensils. Although many of them were high qualified specialists, most could not be provided with appropriate jobs at factories in the Polis'ke region. Several of them were dissatisfied with their low salaries and demanded careers more in line with their qualifications. An inspection had revealed "crude violations" of rules pertaining to equipment and maintenance of water supply sources. Many artesian wells were not provided with protective areas, and polluted transport was being cleaned directly next to the walls. In some cases the foundations of the water tanks had not been sealed hermetically. Many residents, noting that they were working in a zone of increased radiation, had demanded that their wages be doubled.<sup>33</sup>

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<sup>32</sup> "Povidomlennya OH KDB URSSR ta KDB SRSR u m. Chornobyli do KDB SRSR pro radiatsiinu obstanovku ta khid rozsliduvannya avarii na Chornobyl's'kii AES" [Information of the Operative Group KGB Ukrainian SSR and the KGB USSR in the city of Chernobyl to the KGB USSR about the radiation situation and the course of the investigation of the accident at Chernobyl nuclear power station," May 19, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 144-146.

<sup>33</sup> "Dovidka OH KDB URSSR ta KDB SRSR pro stan sotsial'noho-pobutovoho zabezpechennya osib, evakuiovanykh iz 30-km zony vidchuzhennya Chornobyl's'koi AES do Polis'koho raionu Kyivs'koi oblasti" [Report note of the Operative Group of the KGB Ukrainian SSR and the KGB USSR about the state of social-communal procurement of people evacuated from the 30-kilometer contamination zone of Chernobyl nuclear power station to Polis'ke Raion of Kyiv Oblast], June 26, 1986, DA SBU, F.65, Spr. 1, T.36, Ark. 125.

The report corroborates other accounts of discontent among evacuees as well as the claim that the initial evacuation simply moved the victims from one evacuated region to another (Marples, 1988, p. 31 ).

Major problems arose because of the carelessness and “violations of personal safety rules” that occurred among those involved in the cleanup operation. These latter included specifically coal miners and military reservists, both from failure to protect themselves with adequate clothing and from deficiencies in personal hygiene. There were also encroachments by unauthorized persons into the zone—256 in “recent times”—and a special barrier was being erected to prevent future entries.<sup>34</sup> The lack of attention to cleanup crews by the authorities is evident. A report from June 1, 1986, is fairly typical. It notes that the USSR Ministry of Health officials had expressed serious concern about the safety of people working in the station area, principally because of the prevalence of isotopes of plutonium, which exceeded the permitted norms by up to 1,000 times in the region of the nuclear plant. The use of gas masks was considered mandatory, but the ministries responsible for personnel working in the area—Defense, Energy, Coal, and others—had failed to provide their workers with this basic form of protection. Also reported were lack of observance of proper sanitation norms in dining rooms, lack of disinfectant and hot water, incorrect storage and transport of food products, all of which were exacerbated by hot weather, carried a realistic threat of food poisoning and infectious diseases. On some collective farms, the authorities had made a decision to revive agricultural production, including in the villages of Opachychy and Zalissyia, but the farmers were refusing to work in the fields. Twelve people were arrested and interrogated in the Chernobyl zone: nine had reportedly spread “false rumors” regarding the causes of the accident; two had violated safety standards for sanitation and fire regulations; and one had violated the secrecy regimen in the zone.<sup>35</sup>

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<sup>34</sup> “Povidomlennya OH KDB URSS ta KDB SRSR u m. Chornobyli do KDB SRSR pro radiatsiinu obstanovku ta khid rozsliduvannya avarii na Chornobyl’s’kii AES” [Information of the Operative Group of the KGB Ukrainian SSR and the KGB USSR in the town of Chernobyl to the KGB USSR about the radiation situation and the course of investigation of the accident at the Chernobyl nuclear power station], May 22, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 165-167.

<sup>35</sup> “Povidomlennya OH KDB URSS ta KDB SRSR u m. Chornobyli do KDB SRSR pro radiatsiinu obstanovku ta khid robit z likvidatsii naslidkiv avarii na Chornobyl’s’kii AES” [Information of the Operative Group of the KGB Ukrainian SSR and the KGB USSR of the town of Chernobyl to the KGB

The welfare of the cleanup crews had become a critical concern by August 1986, particularly that of the military teams. Jurisdiction over the military personnel had been delegated to two ministries: the USSR Ministry of Power and Electrification and the USSR Ministry of Medium Machine Building. In August, there were reportedly over 8,000 people working in “military-construction”, but they lacked Geiger counters, they had no reports of radiation conditions in which they were working (these locales included the areas of storage of spent fuel and the “Sarcophagus,” the roof being built over the destroyed reactor), and did not know to how much radiation they had been exposed. The authorities bemoaned the frequent stoppages of work due to such factors as a lack of lights for the night shift, the failure to deliver supplies of cement, or the lack of any instructions. On August 17, near the village of Kopachi, where workers were to be transferred from “clean” to “dirty” busses (to enter the zone), 56 employees of the military unit of Medium Machine Building filled one bus, and the other workers were obliged to walk to the work site. On August 19, construction workers at the Sarcophagus had not been provide with soap, and sponges were not disinfected. Because of the lack of hot water, workers refused to shower and thus remained contaminated and were refused entry into the dining room.<sup>36</sup>

Two days later, the level of radiation in the bath-house in the location of spent nuclear fuel amounted to 2.5 roentgens/hour as a result of workers wearing contaminated clothing, a situation that persisted for 2-3 weeks. Military personnel were also standing in line for over an hour for their bed linen. Workers from three divisions had worked for three months without any protective clothing. Even more alarming was the redeployment of workers who had already accumulated the maximum emergency dose of radiation—25

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USSR about the radiation situation and the course of work for the liquidation of the consequences of the accident at Chornobyl nuclear power station], June 1, 1986, DA SBU, F.65, Spr. 1, T.33, Ark. 196-198.

<sup>36</sup> “Dovidka OH KDB URSS u m. Chornobyli pro nedoliky v orhanizatsii vykorystannya viis’kovo-budivel’nykh zahoniv MO SRSR u zakhodakh z likvidatsii naslidkiv avarii na Chornobyl’s’kii AES” [Report note of the Operative Group of the KGB Ukrainian SSR in the city of Chernobyl about mistakes in the organization of the use of military construction units, Ministry of Defense USSR and measures for the liquidation of the accident at Chornobyl nuclear power station, September 3, 1986, DA SBU, F.65, Spr. 1, T.35, Ark. 269-274.

roentgens. On August 20-21, some 60 people were rehired, all of whom had prior radiation levels between 25 and 30 roentgens. Few preparations had been made for the coming winter—private staffs of military-construction divisions were living in tents, and dining rooms, drying rooms and bath houses lacked roofs. These workers were said to be willing to work in the zone, but demanded regular and adequate payment for their labor, information about radiation levels to which they were being exposed, as well as attention to their living conditions during the fall-winter period.<sup>37</sup> The gap between official accounts of heroism and enthusiasm for the complex tasks and the stark reality of life in the zone could hardly have been greater. Also the long-term health problems arising from Chernobyl were undoubtedly exacerbated by the shocking lack of attention to such basic details as radiation exposure, showers, wages, and accommodation.

The location of Chernobyl at the juncture of several river systems was a natural source of concern. The USSR Ministry of Water Management was particularly anxious that contaminated waters did not flow into the Dnipro River that divides Ukraine virtually down the middle of the country and supplied in 1986 a total of 36 million people, or approximately 72% of the republican population. To “save” the Dnipro River, the ministry offered several suggestions. They included the shutting down of the Kyiv Hydroelectric plant pending the construction of a dam in the upper pool that would prevent large particles from entering the water system and, especially, restrict the spread of radioactive water below the Kyiv water storage system. Second, the ministry proposed to block the Pripjat River by damming its creek in the region of a pontoon bridge at the town of Chernobyl, and with the use of military reservists. A similar dam was anticipated near the village Strakholissya on the Kyiv Sea, as well as in the Kremenchuh reservoir in the district of Pereyaslav-Khmelnysky. Academician B.E. Paton had recommended that special absorbents should be deposited into the Kyiv reservoir.<sup>38</sup>

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<sup>37</sup> Ibid.

<sup>38</sup> “Dovidka 4-ho viddilu 6-ho Upravlinnya KDB URSS pro zakhody Ministerstva melioratsii ta vodnoho hospodarstva URSS z likvidatsii naslidkiv avarii na Chornobyl's'kii AES” [Report note of the 4<sup>th</sup> Section of the 6<sup>th</sup> Department of the KGB Ukrainian SSR about measures of the Ministry of Amelioration and Water Management Ukrainian SSR for the liquidation of the consequences of the accident at Chornobyl nuclear power station], June 3, 1986, DA SBU, F.65, Spr. 1, T.35, Ark. 139-140.

One of the major problems concerning the water supply was that an active source of contamination was the cooling pond of the Chernobyl nuclear plant. Notably, as early as 1979, it was reported that the cooling pond, an area of 15 square kilometers, was to be used for the industrial production of fish. In that year, 300 kilograms of fish had been caught and, based on an analysis of their radiation content, the authorities had approved the sale of fish from the cooling pond to the population providing that their radionuclide content be monitored beforehand. However, between 1979 and 1981, fish caught at the pond and processed at the Ivankiv fish packing plant had been sold to the station without any inspection and without approval from the local sanitary-epidemic station.<sup>39</sup> V.N. Tkach, Minister of Amelioration and the Water Industry of the Ukrainian SSR, noted in June 1986 that during the construction of the cooling pond, it was planned to build an underground clay wall around the pond to prevent filtration of impurities into the Pripjat River and subsoil waters. However, this task was rejected as too expensive. The minister noted that even before the Chernobyl accident, the level of radiation in the Pripjat River was likely higher because of the lack of hydro-isolation. He noted that similar ponds without a protective underground wall existed also at Zaporizhzhya and the incomplete Chyhyryn nuclear power stations.<sup>40</sup>

## Conclusion

Several conclusions can be made from the perusal of these additional documents on the accident at Chernobyl:

- 1) They indicate that there was a longstanding pattern of construction problems at Soviet nuclear power stations and at Chernobyl specifically, as well as accident

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<sup>39</sup> “Dopovidna zapyska UKDB URSR po m. Kyievu ta Kyivs’kii oblasti do KDB URSR pro porushennya vymoh radiatsiinoi bezpeky pid chas provedennya doslidzhen’ z otsinky mozhyvostei vykorystannya stavka-okholodzhuvacha Chornobyl’s’koi AES dlya promyslovoho ryborozvedennya” [Report note of the KGB Ukrainian SSR for the city of Kyiv and Kyiv Oblast to the KGB Ukrainian SSR about violations of the requirements of radiation safety at the time of conducting research on the appraisal of possibilities of the use of the cooling pond at Chornobyl nuclear power station for industrial fish culture], March 12, 1981, DA SBU, F.65, Spr.1, T.5, Ark. 71-74.

<sup>40</sup> “Dovidka 4-ho viddilu,” June 3, 1986.

situations that had seen the occurrence of at least one major accident that contaminated the settlements in the vicinity. The documents expand considerably the existing knowledge about these dilemmas, cited originally in only one major republican newspaper—*Literaturna Ukraina*, which was perhaps the least scientific outlook in the republic. Arguably, the accident was linked more to the unstable nature of the RBMK reactor than to construction defects of the reactor units. Nonetheless, the documents highlight and elucidate the careless and lackadaisical attitude to the construction of nuclear power stations in the former Soviet Union.

- 2) They corroborate the supposition that the authorities were aware of the scale of the accident from the first days, and carefully concealed this information from the Soviet public, as well as the international media. This point has already been emphasized by several analysts (Z. Medvedev, 1990, Marples, 1986, G. Medvedev, 1993, Yaroshinskaya, 1992), but the new materials provide much more detail and clarification about what was actually known by the local authorities. In particular, they add appreciably to the documents found in Yaroshinskaya's book (1992), which focused on discussions at the level of the Politburo.
- 3) They demonstrate that the evacuation procedure took place initially from Pripyat and nearby settlements, but that a visitation by the all-Union authorities in the shape of Ligachev and Ryzhkov was required before a more extensive evacuation took place. The evacuees were moved initially to the west, directly to equally dangerous locations. The high-level meetings of the Politburo of this period suggest that the concern was less with the population in the Chernobyl region than with Moscow, and foreigners residing in Minsk and Kyiv. The evacuees, along with the cleanup crews, make up most of the long-term medical casualties and victims of the accident.

- 4) At the reactor itself, a lack of safety equipment compounded the problems of the fire crews, first-aid workers, and clean-up crews. The new documents highlight a fundamental inattention to basic safety procedures and rules of hygiene, and these were exacerbated by a lack of Geiger counters and other equipment, which necessitated a delay in making an assessment of the radiation situation until May 4, more than a week after the disaster occurred. The documents provide a detailed look at the problems faced by cleanup crews, which were potentially life threatening, because of their inability to monitor their radiation levels, and the return to zone work of workers who had already accumulated a maximum lifetime dose of radiation.
  
- 5) Radiation levels reached extreme levels not only in the reactor zone, but in Chernobyl, Kyiv and other centers. Moreover, the levels of radiation tended to rise in the period May 4-11, and radioactive particles entered both the water supply and food chain, compounding the dangers to the local population. Thus in late June, it was observed that the city of Kyiv was affected by several long-lived isotopes, including Cesium-134, Cesium-137, Zirconium-Niobium-95, Cerium-141, Cerium-144, Barium-140, and others.<sup>41</sup> There was never any official corroboration that citizens of Kyiv faced such dangers, indeed reports commented frequently that although background levels of radiation had risen in Kyiv, they did not constitute a threat to the population. Reasons of space have prevented a discussion of the distribution of food products from contaminated areas, but such a situation persisted for some time and represented a further danger to the populace of Ukraine's capital city.
  
- 6) Though the republican KGB paid special attention to monitoring these difficulties, it was not in a position to take active measures. Such actions were in the hands of the Government Commission, which in turn reported to the Politburo

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<sup>41</sup> "Dovidka 6-ho Upravlinnya KDB URSR pro radiatsiinu obstanovku, shcho sklalasya v respubliksi vnaslidok avarii na Chornobyl's'kii AES" [Report note of the 6<sup>th</sup> Department of the KGB Ukrainian SSR about the radiation situation, which has developed in the republic as a result of the accident at the Chornobyl nuclear power station], June 27, 1986, DA SBU, F.65, Spr. 1, T.37, Ark. 2-5.

of the CC CPSU, in which Ryzhkov and Ligachev played the key role, as well as individual figures in various sectors, such as Izrael, Dolgikh, Il'in and others. The lack of republican control was to foster discontent and frustration among the local authorities in dealing with all-embracing government ministries and state committees based in Moscow. Nonetheless, the extent of republican knowledge, through the Ukrainian KGB, was considerable. What is impressive about the documents is the detailed depiction of events and problems from the republic to the central authorities in Moscow.

- 7) Lastly and notwithstanding any of the above, it could also be argued that the centralized nature of the Soviet system could be an asset in the case of a major emergency like Chernobyl. Though we have paid close attention to the failures of the response, it should be appended that the coordination of decision-making in Moscow undoubtedly helped in some instances. But the incapacitation at the local level hindered appropriate responses at times, as did the need to accommodate a dissatisfied and volatile workforce, often terrified by the environment in which it was working, and frustrated with the evident failure to achieve that elusive goal: “to liquidate the consequences of the accident at Chernobyl nuclear power station.”

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