Memorandum on the expediency of using the facilities of the third stage of the Chernobyl NPP

July 15, 1989
Secret

Regarding the third stage of the Chernobyl Nuclear Power Plant

During the course of undercover operations, the Department of the Ukrainian State Security Committee for the City of Kiev and Kiev Region for the Chernobyl Nuclear Power Plant received information regarding statements by individual specialists from the Combinate Production Association and third-party organisations regarding the possibility of using the plant's third stage facilities to continue the construction of power units with nuclear power plants fundamentally different from the RBMK-1000 reactors.

The main argument expressed is the opinion of a significant increase in the generating capacity deficit in the event of a negative decision on the reconstruction of the existing Chernobyl Nuclear Power Plant units.

Based on the above, we conducted an in-depth study of the situation at the Chernobyl Nuclear Power Plant's Phase 3 using operational and official sources from leading specialists at organisations and institutions located in the zone.

As a result of these studies, the following was established.

Construction of the Chernobyl Nuclear Power Plant's Phase 3 began in 1981, and as of April 1986, 226.7 million roubles of allocated capital investment had been spent on construction and installation work, including 40.7 million roubles worth of equipment installed.

At the same time, the readiness of individual buildings and structures at Unit 5 averaged approximately 70%, including the main building, radioactive waste storage facility, open switchgear, and hydraulic structures, 70–75%; and auxiliary facilities, 40–55%. A significant number of various types of equipment was installed at the unit, primarily in the main office (pipelines, shutoff valves, electric motors, main circulation pumps, etc.).

Following the accident at Unit 4, all construction and installation work on the third stage was suspended due to the challenging radiation situation.

On January 28 of this year, the USSR Council of Ministers adopted Resolution No. 105-40 on the termination of construction of Units 5 and 6 of the Chernobyl Nuclear Power Plant. Following this decision, the USSR Ministry of Atomic Energy ordered the relevant construction organisations to implement the cold-schedule mothballing of the third stage of the reactor. 27.0 million roubles were allocated for these measures.

The mothballing technology and equipment were developed by the Moscow branch of the Atomenergoproekt Institute, and the direct execution of the work was entrusted to

Construction and Management Department No. 3 of the Chernobyl Nuclear Power Plant Construction Directorate of the USSR Ministry of Energy.

As of July of this year, construction workers have spent approximately 14 million roubles, and the mothballing of the main building, the radioactive waste storage facility, and several auxiliary facilities has been fully completed. Certain production facilities have been re-purposed (mostly converted into storage facilities).

However, as the mothballing project progressed, a number of leading specialists began to believe that this work was inadvisable.

According to operational sources working in the construction industry, the cold preservation method used provides virtually no guarantees for the long-term safety of erected structures, primarily due to the fact that welded seams are not sealed, none of the rooms are heated, etc. At the same time, in their opinion, in order to obtain permission from regulatory authorities for the industrial exploitation of these structures, comprehensive expert assessments are necessary.

The implementation of the latter, given the existing equipment and technology, firstly, offers no guarantees, and secondly, the costs may be comparable to the cost of individual structures at the facility.

The opinions expressed by specialists in 1986–89 about the possible use of the constructed buildings to continue construction of a power unit fundamentally different and more reliable than the RBMK-1000 are not supported by any real evidence.

Under these circumstances, the question of the advisability of cold storage and the unjustified expenditure of financial and material resources logically arises.

According to a number of operational sources, the fate of the so-called third stage should be decided comprehensively, based on the findings of comprehensive, competent expert assessments involving all interested parties.

Conducting such a comprehensive assessment should pursue the following goals:
– Determine the feasibility of dismantling existing building structures and using them for the needs of the zone. In particular, one option proposed is to consider using individual components for the construction of long-term repositories. Removing prefabricated reinforced concrete outside the zone is prohibited due to its significant radioactive contamination;
– Decide whether to use equipment installed at the construction site for its intended purpose or as scrap metal. It is also noted that, as a result of mismanagement that occurred in the first days of the accident clean-up, technical documentation (certificates, passports, etc.) for most of the installed and stored equipment was lost. Therefore, even if radiation-clean and serviceable components and assemblies are available, they cannot be transferred to Chernobyl's sister plants. However, a full assessment of the equipment installed at the units and its fate was not determined by the commission. This work would have allowed the state to recover certain funds.

The radiation situation in the 3rd stage area deserves special attention. Due to the fact that no large-scale decontamination work has been conducted in this zone since 1986, changes in the radiation situation have occurred primarily due to natural factors.

Currently, contamination in this zone is significantly heterogeneous. Gamma radiation levels in some areas range from hundreds of microSieverts per hour to thousands of microSieverts per hour.
The main contributors to the current unfavourable situation are:
– a radioactive waste disposal site, covering an area of approximately 0.5 hectares, the surface dose rate of which ranges from 2 to 600 µSv/hr;
– unauthorized waste dumps, primarily removed from the plant's territory, with radiation ranging from 100 to 5,000 µSv/hr;
– localised high-activity spots that emerged in 1986.

Equipment located within the 3rd stage and individual building structures, primarily those stored outdoors, are significantly contaminated with beta-emitting radionuclides.
This situation means that the 3rd stage serves as an additional secondary source of contamination in the area around the plant, primarily due to anthropogenic factors, wind, and water transport.

In view of the above, according to a number of operational sources, in order to avoid the unjustified expenditure of public funds, as well as to partially restore the material losses incurred, it is advisable to conduct an expert assessment of the situation in the third stage, on the basis of which a scientifically and economically sound decision will be made.

If individual buildings and structures in the designated area continue to be used for the needs of organisations located in the zone, a decontamination program must be developed and implemented.

In reporting the above, we request that you consider informing the relevant agencies for appropriate decisions.

Head of the Department of the Ukrainian State Security Committee for the city of Kiev and Kiev region for the Chernobyl Nuclear Power Plant
Lieutenant Colonel V.V. Lamonov