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Chernyaev's Notes from the Politburo Session.

About Chernobyl.

GORBACHEV: Who approved building Nuclear Power Stations (NPS) in densely populated areas? Do you remember the discussion about it in *Kommunist* (no. 14, 1979)? But then they gagged Academician Dollezhal. We should not let people scorn us, the Politburo [later]. Now the main priority is the safety of nuclear power stations.

I also remember another thing: the article in Pravda on the 30<sup>th</sup> anniversary of the first NPS. It said: "nuclear energy industry can serve as a benchmark of safety." Academician Legasov signed it.

And what do we have when push came to shove? Chernobyl exploded and nothing was ready: not civil defense, not medical services—they did not even have an adequate supply of dosimeters; the fire services did not know what to do. Everybody shat in their pants.

Weddings were celebrated in the vicinity. Kids were playing outdoors. The [emergency] alert system is no good at all. And no emergency shutdown either.

A cloud formed after the explosion. Did anybody track it along its path? Did anybody take any measures? Nothing.

Station Director Bryukhanov was convinced that nothing could have happened. He and his deputy did not know that scheduled tests would be taking place on the bloc. Meanwhile, just in the  $11^{\text{th}}$  five-year stretch, there were 104 accidents at the Chernobyl NPS. Did this concern you at all?!

Your main engineer is an electrician, his main concern is to produce as much energy as possible.

Here is Meshkov (deputy of Slavsky), he still assures us that the reactor is reliable. Why then did you sign a proposal recently to stop building this kind of reactor?

SLAVSKY: I did not sign it.

GORBACHEV: So we can use them and build them then?

MESHKOV: Yes, if all the regulations are strictly adhered to.

GORBACHEV: You just amaze me. Everything we have collected now on Chernobyl leads to only one conclusion—these reactors should be banned. They are dangerous. And you are trying to defend your parochial reputation.

MESHKOV: No, I am trying to defend the nuclear energy industry.

GORBACHEV: And whose interests are more important? We have to respond to this question. Millions of people in our country and abroad are demanding it from us. We have to put an end to the situation where NPS's are built at the level of thinking of the [19]20s or [19]30s. We must think at the level of Chernobyl. In the United States, after the big accident, they have not built a single new bloc!

We have been hearing from you (scientists, specialists, ministers—A. Ch.) that everything is under control here. And you expect us to look up to you as if you were gods. This is where it all started. Because the ministries and all the scientific centers got out of control. And it all ended in failure. And even now I do not see that you are contemplating any conclusions. You are all just stating facts, or even trying to smooth over some of them.

The [station] personnel are to blame for the accident; but the scale of the accident is due to the design of the reactor.

We live in a democratic society. And everybody can express their opinion.

Where centralization is needed, we don't have it; however, where a simple nail needs to be hammered in, thousands of agencies get involved. There is not a more dangerous object than a NPS, there is energy to the millionth power; they are more dangerous than any military object. Academician Dollezhal raised concerns in his time, but he was judged as incompetent and publicly humiliated at a press conference in front of foreign journalists.

This is where the monopoly in science and in industry leads. The problem of energy production in every aspect—scientific, experimental —turned out to be out of control.

[Reads expert opinion] The reactor was unreliable. And you did not do anything about it. It did not raise your concern. Why weren't theoretical studies funded? Where have you been? Academician Aleksandrov himself said that. But he also missed something. Today he is agonizing over it, although he bears great blame.

But Meshkov is blaming everything on those who worked on the reactor. How do you look such a tragedy in the face? If we were to agree with you, then what? Continue as before? Sounds like everybody is wrong, only Meshkov is right. Then it is better to get rid of Meshkov.

On the question of the location of nuclear power stations. You were so stubborn when it was deliberated. What conclusions do you have after Chernobyl? What did you bring to the Politburo?

MESHKOV: (confused) We have to look at the accident once again. The personnel were well-trained. Discipline was at a high level. But you cannot build a bloc a year. Otherwise you work in rushed conditions. This explains the quality of the equipment and the safety. Protective gear must be reconsidered. Machines. Evacuation procedures.

I went there in the middle of the night, I saw everything.

SHASHARIN (ministry of Energy, head of department): In the Ministry, Chernobyl was considered exemplary. Appointed the best Director. And got too "familiar" with the NPS. But it demands respect.

The personnel did not know that the reactor could "speed up energy," and we did not know it. Blame for the accident is on the personnel. But the scale of the accident—I agree—is due to the design of the reactor. We were excited about this design even though we were not sure of its safety. There was a single system for managing the protection. And everybody believed that in principle it was no good. But on the other hand, everybody worked in a state of anxiety. The Leningrad and Kursk station do not have a system of accident containment either.

It is obvious that the first stages of the Smolensk, Kursk, and the two Leningrad NPS's will have to be shut down. We cannot guarantee there will be no cracks in the energy supply pipe. Other blocs of the power stations mentioned could be fixed, but it would take a year. And it will be very expensive.

We should change the structure of the Ministry, because it is impossible to work like this and to manage a NPS.

Equipment for a NPS is bought at cost, not according to nomenklatura, it is a thousand rubles per item.

SOLOMENTSEV: Did you know before that the reactor was unreliable?

SHASHARIN: Yes, but you will not find it in the papers. There was great resistance. Aleksandrov was opposed. The Academy of Sciences was also. The Ministry of Medium Machine Building demanded that we increase production of energy at NPS's by the year 2000 ...

Representative of State Nuclear Energy Oversight Agency: It is impossible to guarantee the absolute safety of working blocks of a NPS (due to their technical nature). But if one follows all the instructions, all the regulations, they can work.

When the design of this particular reactor was approved, it was known that it had "positive steam" and "positive temperature" effects.

Forty percent of NPS's [in the USSR] use the Chernobyl-type reactor. But the oversight [agency] never inspected, never went back and analyzed its deficiencies in design and level of danger. And the new reactors are even worse and more dangerous; they are generally poorly managed.

GORBACHEV: It sounds like we have to shut down those reactors? And those in the CMEA [COMECON] countries—they are also not up to the norms?

SLAVSKY: A man-made explosion was created. Why did they need this idiotic experiment? ... Firefighters died because of the incompetence.

...The reactor is good, durable. But what have they done?! A regional engineer, who had no right to do it, attempted the experiment.

The turbine at the Leningrad NPS is defective, the base of the turbine is cracked. 6,000 rotations per minute. If there is an explosion everything would be blown to smithereens.

They needed 26 graphite rods, but there were only 5. All kinds of academicians and professors are writing all kinds of nonsense about the causes of the accident.

GORBACHEV: Shasharin's statement that we should shut down the blocks of NPS's is not serious ... A hood? They say that if there had been a hood at Chernobyl, the dispersal would have been even greater.

MAJORETS (minister of Energy and Electrification of the USSR): At the beginning of the fire, I was informed that the fire had been extinguished. It seems like the cooling system had worked.

GORBACHEV: Why such erroneous information? It means that they don't know, they cannot determine what kind of consequences there could be from such a fire. What are they—such fools there?

MAJORETS: I saw from a helicopter what I had read before in the literature about such accidents. After Chernobyl, the Academy of Sciences and others proposed a kind of reconstruction that would mean constructing a new reactor. But that also confirms that this model of reactor is no good. In 1975, there was an accident at the Leningrad NPS. We did not study it. In 1982 the same happened at Chernobyl. We did not study that either.

This reactor is not up to standards and will never satisfy the requirements of safe operation, even if you provide ideal maintenance. Sooner or later, something like this will happen. Aleksandrov is saying you can improve it. And what are we to do in the meantime? And what if we have a Herostratus? The new reactor is good but it does not have the required automated systems. The cause? The gap between scientific design and production.

We should bring everything related to NPS's under one ministry. And militarize this service.

From foreign (public) publications it is obvious that they have already modeled the Chernobyl accident. So what should we do now—present lies to the IAEA?

... We must not build normal towns next to NPS for the sake of saving money. There will be consequences, and we already have very bad ones. We should not leave what happened without punishing the perpetrators.

Academician LEGASOV: The reactor does not satisfy safety requirements for most important parameters.

In 1985, in Finland, physicists "on the Hamburg file" gave high marks to our NPS. But before [the tests] they removed the automation system and technology from it and replaced them with Swedish-American [components].

BOBKOV: Sabotage is ruled out. But the carelessness, incompetence and lack of unpreparedness are striking. People did not know what they were faced with. We must not put the fate of the nuclear power industry into the hands of one person. The danger of NPS's lies also in the fact that at those stations they also have to "fulfill" the plan at any cost, to the detriment of safety, at the cost of safety ... just like at any

our normal plants. And the race in building NPS's, and the problem with waste disposal is not solved—some NPS's store "above normal" reserves. They bury [waste] in a concentrated fashion. There is a contaminated lake near Chelyabinsk. If a hurricane or a tornado hits, it will be a tragedy for the entire region.

DOLGIKH: Our conclusions are our responsibility to the generations to come. We did not act in the spirit of the XXVII Congress, we ran into the super-secretiveness of the Ministry of Medium Machine Building.

If the cause of the accident is criminal negligence, the catastrophe that followed is the result of the physical design. A comprehensive reconstruction of the reactor makes it uneconomical.

For many years we did not comprehend what could happen. And we stubbornly walked toward this accident. It was inevitable as the result of such behavior. We created a legend about the absolute safety of the NPS ... An entire philosophy emerged around this topic. Dollezhal was raising the alarm, but he was labeled incompetent.

NPS's are located next to cities! They point to Western countries. But we have this kind of territorial expanse. Nuclear thermo-electric lines—these are, by the way also a means of delivery of radiation to homes.

... Each nuclear storage facility costs 30 million rubles.

... We are faced with a huge loss of energy because ten reactors (like Chernobyl) are in the CMEA [COMECON] countries, and ten in our country. They all are outdated and dangerous. We should reconsider energy proportions.

RYZHKOV: How could something like this happen here [in our country]? What are the causes of this biggest accident in the world? We have been walking toward it for a long time. And we accumulated the danger. By chance? But there are too many coincidences. No, this is a causal chain, which emerged in our energy industry. And lack of discipline. Had it not happened here and now, it would have happened in a different place. At the dawn of NPS's, everything was built strictly and reliably. Gradually, the nuclear power industry spread beyond Slavsky (i.e. beyond the boundaries of responsibility of the head of the Ministry of Medium Machine-Building), but the discipline did not follow with it. And besides, we pumped up the reputation of Slavsky and Aleksandrov too high. We lowered oversight at all levels, and our vigilance got dull. There has not been a single year without accidents at NPS's. The accident at the Leningrad [NPS]—no conclusions were drawn. The Ministry of Medium Machine-Building, science, the Ministry

of Energy—they are not at the level that is required by nuclear energy. And [there was] a lack of communication between agencies.

Conclusions should be strictly objective. A lot depends on it.

The fate of the country is being decided, and here, in front of our eyes, at the Politburo, like a wall against a wall [like a street fight--colloquial]: the Ministry of Medium Machine Building, Ministry of Energy, the Academy of Sciences ... And what is there below [the Politburo level]?!

There were deficiencies ... and everything was concealed, put away somewhere to prevent revelations. The bosses' sense of responsibility got dull. We cannot guarantee that it will not happen again without taking serious organizational and technological measures.

## What should be decided:

- define the type of the reactor. Cancel the Chernobyl type.
- create a Ministry of Atomic Energy. Give it part of Medium Machine Building.
- create a Charter—like Aeroflot and the Ministry of the Maritime Fleet has.
- give absolute right of access to the State Oversight [Agency].
  Now they are not allowed anywhere, even to [civilian] aviation and the fleet.
- create an Interagency Council, but not under Slavsky, at the Academy of Sciences or the State Committee on Science and Technology, or even better at the Council of Ministers.
- involve the Ukrainian party organs to analyze the consequences.

LIGACHEV: Falling behind in science and technology overall, and in particular in the nuclear business, in automation, in materials science, is one of the reasons. And the lesson [is] this is where monopolization of science and production gets us! We need to change the structure of the nuclear energy [industry] completely. Today, the absence of responsibility is built-in into that structure itself. We need to look for alternative sources. Emphasis on [natural] gas!

... Nonetheless ... We have shown to the world that we are capable of dealing with this on our own. We prevented panic. The West wanted to use this to discredit our leadership.

We need to ensure party leadership of the energy [industry]: in science, operation, and design. All this was outside of party control. All this refers to the ministries in general, and to the Ministry of

Medium Machine Building, and to scientific and design organizations ... and to ourselves.

Not everything is good in reactors, Efim Pavlovich (Slavsky). And in the military sphere not everything is good in this area, and it needs party involvement.

There is excessive self-assurance at the Ministry of Energy, at the Academy of Sciences. And what about party committees, and the Central Committee? They show up there **after** accidents! This refers to the Central Committee of Ukraine, and to the regional committees.

What are we hearing here, at the Politburo? Parochial approaches and arguments. It is good to disagree but one also needs self-criticism ... And when they, debaters, leave this session here, they will probably instantly agree with one another, but by no means on a principled basis.

SOKOLOV: Chernobyl—this is like a weapon of mass destruction ... People should fear the State Atomic Oversight [Agency]! And in this country? An inspection revealed a bad situation with radiation on submarines. The storage of nuclear warheads in not in a good state either.

SHCHERBITSKY: What should be done with the children? In Kiev alone we have 600,000 [children]. Right now they are evacuated ... But we will have to bring them back in the fall. What's happening with water? Weeks are going by, but there is no progress. Construction of the Kiev NPS should be stopped ...

GORBACHEV: We suffered huge losses, not only economic, not only human. The political damage is great: now people are doubting whether our energy program is at an adequate level. They are throwing in the idea about discrediting the USSR, Soviet science, technology, alleging that our nuclear energy [industry] is deformed.

The situation is very serious. By no means will we agree to any kind of appearance of easy victory: as if to say, it's ok, it happens ...

What happened was an extraordinary event, close to the use of a weapon of mass destruction. Considering the fact that we have working NPS's, that they are part of our energy program, we bear great responsibility for the assessments, the conclusions, and for further actions.

Judging by everything, this is not the last Politburo session on this issue, even though it is not the first one either; we will have to return to this subject. We suffered great losses, and not just economic ones. There have been and will be victims. We have suffered political damage. The level of all our work in the sphere of energy has been put in doubt. What happened discredits our science and technology. The situation is very serious. And by no means will we agree to hide the truth—neither when solving practical issues, nor when explaining things to the public. We bear responsibility both for the analysis of what happened and for the correctness of our conclusions. Our work now is in full view of all our people and of the entire world. And it is impermissible to think that we can get away with half-measures and tricky solutions. We need [to provide] full information about what happened. A cowardly position is not worthy of a politician.

It pains me, and concerns me that the comrades argued back and forth, got into a fight here at the Politburo. This must be denounced.

The accident could have been prevented. If there had been correct and timely information, the Central Committee could have taken measures and there would not have been an accident. But we were faced with a manifestation of extreme absence of responsibility.

There are no interests that should force us to hide the truth. The fullness of our conclusions—this is what we owe all of mankind.

We should adopt proposals about punishments.

Bryukhanov committed grave mistakes, criminal negligence ... Expel him from the party.

The Ministry of Energy works poorly ... Shasharin should get a strict reprimand.

Deputy Director of the Institute of Energy Machine Building Yemelyanov —a reprimand and fire him.

Majorets, the minister—a reprimand. But actually, he should be fired.

The Nuclear Energy Oversight [Agency] showed itself poorly. The chairman should be fired.

Bring to Slavsky's attention that he ignored the scientists' warnings.

Meshkov (Slavsky's deputy), who showed up at the Politburo with absolutely irresponsible stuff—I would not keep him in this position.

Academician Aleksandrov—bring to his attention that he is also to blame for all this.

Specific cases at other levels should be passed on to the Party Control Commission. And let the Procuracy have its say.

We bear responsibility to those to died, to the entire people!

The resolution should be revised, both in the sense of conclusions and in terms of developing a balance: NPS-gas-oil, hydroelectric stations, coal ...

The government should go back to the energy industry program from before the year 2000.

To consider: what is more dangerous—to continue using nuclear power stations or to shut them down.

About locations of nuclear power stations. Let the Presidium of the Supreme Soviet decide about the Crimean, Minsk, and the Armenian NPS. And then [they should] introduce proposals to the Central Committee.

Create an oversight organ with a semi-military regime.

Vladimir Vasilievich (Shcherbitsky) poses the right question—what to do with the children? Burenkov (USSR Minister of Public Health) must give an answer.

The draft resolution is missing the international aspect. [We should] add it, and inform the socialist countries, the IAEA, all the world public honestly. Whatever is not a specifically military issue should not be kept secret. All peoples should know about the consequences and about our measures. We cannot be cunning here. Here, secrets would be to our own detriment.

Openness would be a great victory for us. We will lose if we don't tell everything fully. [We should] give maximum information to the world, especially since they know the factual state of affairs in the West.

Do not rush to publish information about this Politburo session. My statement on TV will be in three days—on the results of this Politburo.

Praise the heroes, reward everybody who distinguished themselves in a proper manner.

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