

January 31, 1955

**Address by Zhou Enlai at the Plenary Session of the
Fourth Meeting of the State Council (Excerpt)**

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Summary:

Zhou Enlai addresses the State Council citing a need for China to "master atomic energy." The Chinese program is far behind in this area, but plans to catch up with the help of Soviet technical assistance.

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进行动员。另外，二月份开始在农村进行征集新兵的工作，这是从志愿兵制转变为义务兵役制的开始，也需要动员。可以把这些工作结合在一起进行。这个签名运动，由中国和平大会领导。

(二)进行原子能教育。这是过去没有的，我们许多领导干部都不懂，请科学院主持这项工作。首先是科学院开会统一自己的认识，现在已经开了小会，还要开大会。第一，组织原子能和平利用讲座。先从高级干部组织起，发表的文件中，我们有些名词都不懂，又怎能和平利用原子能。请钱三强、周培源、钱伟长、赵仲尧讲讲，讲时把它录下音来，在全国进行这方面的教育。第二，编些通俗的小册子，苏联有这些书，翻译过来不一定都能用，人家水平高。刚才有同志问我，编的时候要不要分高级和初级，我看可以不分，我们现在对原子能的知识还没有什么高级和初级之分。第四，写些文章登在报上，表示欢迎苏联对我国和平利用原子能的帮助，反对美国叫嚣使用原子武器。对照起来是大有材料，苏联把原子堆用于发电，而美国就不搞这个，美国资本家就不同意。他们电站很多，如果用原子能发电，资本家的利润就要受到很大影响，所以他们在军事方面，这样军火资本家就可得到很大的利润。最近艾森豪威尔对国会的咨文中说，要把原子能用于小型潜航艇上。这不是很好的对照吗？第五，要集中一批学生，转到学习物理方面的专业。我们的过去是配在世界水平上不算高，但有几位不容易，中国搞这方面研究的人少了。过去给些好学生，过去给的，学生不懂科学质量不好，政治质量也不好。和平利用原子能虽然公开地进行宣传，但工作还是秘密的，所以科学质量和政治质量都要好。各系、数学系也要选好的去，过去没有提倡，今天要提倡。没有足够数量的人是不成的。苏联发表的声明中说，帮助我们建设并提供广泛的帮助，这样至少需要二百年到五年的专门人才，只现有的人数是不够的，必须培养。今年送进学校虽然过四年五年才能用，这也好。在大学的工科方面也要增加这方面的科系。高等教育部应批准清华增设应用物理系。杨秀峰部长，你懂不懂原子能(杨秀峰部长答：不懂。)不懂也得去听听课，不懂原子能就不会很热爱。第六，要把现在的原子物理专家逐渐从行政工作中抽出来。物理专家的组织才能都很强，钱三强是科学院的秘书长，又是青联的副主席，钱伟长是清华大学的教务长，周培源是北京大学的教务长，在浙江大学有个物理专家，叫胡启明，担任副教务长，调了好久调不来，这次要下令调来，从行政部门把他们“解放”出来。如果找不到适当的人选做教务长，当个名誉教务长也可以嘛。总之要号召专家归队，各位如果知道有专长的人可以推荐，不要瞒起来。

(三)认真地进行工作。要促进和平利用原子能，就要严肃、认真地工作，这是要保密的，现在国家已正在进行中。如果不进行广泛的教育，就不可能取得成绩。铀矿是要保密的，但什么样的才是铀矿，这是需要大家知道的，要慢慢学起来，不然采矿的见到了铀矿不懂得，那是不行的。钻探队，地质部有两万多人，燃料工业部有四万人，重工业部有两万人，他们遇到铀矿的石头都应知道。这是常识，不在人民区中进行教育是不对的，要使大家的眼光都亮一些，发现以后，当然就要保密，要区别一般和保密的界限。认真研究业务是少数人的工作，但要反对使用原子武器那是几万万人的事情，要扩大原子能的教育也是几万万人的事情。

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31 January 1955

You all have seen the statement released by the Soviet Council of Ministers on the issue of Soviet assistance concerning Chinese peaceful use of atomic energy published in the press on January 18. This issue has previously been discussed internally many times, and now just recently the Soviet government has issued a statement making this public. Until now, we had not reported to the State Council plenary, since we had wanted to firm up this issue.

This is a very good thing. In the past we had no foundation in this area. The Academy of Sciences had some understanding, but we had none. We invited Minister Li Siguang and Institute Director Qian Sanqiang to discuss this with us several times, only being able to recognize terms in documents. Now, we have a fair understanding from the Soviet Council of Ministers' statement and academician [D. K.] Skobel'styn's replies to reporters. This is a new issue for China. We are now in the atomic age. We have to understand atomic energy whether used for peace or war. We have to master atomic energy. We are far behind in this area, but, with Soviet help, we have the confidence and determination that we can catch up. Minister Li Siguang and Institute Director Qian Sanqiang tell us that it is possible to catch up, especially with the enthusiastic support of the Soviet Union. The Soviet Council of Ministers has already made its statement public and this kind of publicity is essential. Atomic energy now is already general knowledge and is being discussed all over the world. Imperialism is clamoring about atomic war; we have to expose this. We have to make the world's people understand that if atomic energy is used to serve peaceful construction, it can benefit mankind, but, if used to serve of war, it will destroy mankind. The Soviet Council of Ministers' statement includes its decision to provide scientific, technical and industrial help to other countries and [notes] that it is now considering the scope of the countries to which it can provide assistance. This focuses the attention of all the people of world on the issue of atomic energy and forces them to pay the same level of attention as they once did to the steam engine. If even knowledge about atomic energy is lacking, how will there be the will and the courage to prevent atomic war and spur the peaceful use of atomic energy? What after all is the power of atomic weapons? Many people are not clear. As a consequence, this has given rise to two types of attitudes in the world: one is ignorance and the other is terror. Our Chinese people believe there is nothing special about the atomic bomb and ignore it, looking down at it with derision. [But] It is incorrect to ignore it, and most of the world's people are terrified by it. The United States produces atomic weapons and hydrogen weapons, but itself is extremely terrified [of them]. American imperialism clamors about atomic war, but the first to be scared was not us, but they themselves. When Secretary of Defense Forrestal, who was in charge of this issue, heard in 1949 that the Soviets had mastered atomic weapons, he was distraught, committing suicide by leaping from a building. In Western countries, most are terrified of atomic weapons. Last Friday, when Chairman Mao received a foreign ambassador, that ambassador said that atomic weapons were very fearsome, and that if several hydrogen bombs were dropped on China, China would be almost completely wiped out. I said, just think about it, the very greatest harm would come to countries with concentrated industry and populations. Mao said that the very greatest harm would merely be that a hole would be blown clean through the earth, and, if there was a hole blown through the earth, and one entered from China, the other side would be none other than the United States. In all, fewer than 100 million people were killed and wounded during the Second World War. If there were another war, and, let us say that China suffered casualties equivalent to the number of people killed and wounded in the Second World War, we would still have 500 million people. America is trying to use terror to scare us, but it cannot scare us. On the Taiwan issue, it is trying to employ the threat of war to scare us, but it hasn't scared us.

Speaking positively, we have to make the broad masses of the people understand atomic energy, and [to that end] carry out extensive education and serious work. Last

year a friend said to me: Why don't we announce that we have also mastered atomic weapons? I said: Why should we do this? We have to be practical and realistic, if we haven't mastered [them], then we haven't mastered [them]. It is not very hard to master atomic weapons. We have Soviet help, and if only we apply ourselves seriously, we will be able to master atomic weapons.

[...]

Speaking positively, we have to openly carry out education, seriously engage in work, and actively pursue the peaceful use of atomic energy. From the negative point of view, we have to appeal to the [world's] people to oppose the use of atomic weapons and oppose the carrying out of atomic warfare. Combining these positive and negative aspects, now we need to implement work on the following several fronts.

(1) Open a campaign. The Standing Committee of the World Peace Council, meeting in Vienna on the 19th [of January 1955], approved a letter to the people of the world calling on them to rise up to prevent the use of atomic weapons, and to prevent the production of atomic weapons. At the time, [Irene] Joliot-Curie, Guo Moruo and others signed [the letter], deciding to initiate a signature drive throughout the world. Our country must support this signature campaign. In two previous signature campaigns, there was a very good response from the people of our country, and in this signature campaign there will be an even greater response. The people demand peace and oppose atomic war. The people of the West are still oppressed, [but] in the Soviet Union and among the already liberated people in the people's democracies, this campaign will be pushed forward. We have a lot of people in our country, and there is always a large number of signees. They all hope that we will promote this campaign. Preparations are underway to hold the World Peace Conference this May in Helsinki. We plan to start a signature campaign from this February. Signatures can be gathered collectively. In villages, we can employ the procedure of voting by a show of hands at mass meetings, on the one hand supporting Soviet assistance to China's peaceful use of atomic energy and, on the other hand, opposing the production and use of atomic weapons. This signature campaign can be carried out together with other work. Now the Taiwan question is under fierce discussion on the agenda of the United Nations. We must liberate Taiwan and oppose U.S. armed intervention. We need to mobilize the people throughout the country on this. Furthermore, the work of recruiting new soldiers in the villages starts in February, and there needs to be a mobilization. This work can be combined and carried out together. The signature drive should be led by the China Peace Assembly.

(2) Carry out atomic energy education. We have not done this in the past, and many of our leadership cadres don't understand [this issue]. We have asked the Academy of Sciences to take charge of this work. First, the Academy of Sciences is meeting to unify its own understanding. It has already held small group meetings, and it will be holding a large meeting. Second, we are organizing a course of lectures on the peaceful use of atomic energy. Starting with [the lectures] organized for high-level cadres, in the distributed documents, we don't understand some of the terminology and how can we peacefully use atomic energy. We will invite Qian Sanqiang, Zhou Peiyuan, Qian Weichang, and Zhao Zhongrao to speak, record what they say and carry out this kind of education all over the country. Third, compile some pamphlets for popular consumption. Some Soviet books have been translated, but we may not be able to use them all, since [the Russian] cultural level is high. A comrade just asked me whether at the time of compilation we should divide them into high-level and elementary-level [material]. I think we should not make this distinction. With the present state of knowledge of atomic energy, there can be no distinction made between high-level and elementary-level [material]. Fourth, write some articles for publication in newspapers welcoming Soviet assistance for our country's peaceful use of atomic energy and opposing American clamoring about the use of nuclear weapons. There is a lot of material to make a comparison. The Soviet Union uses atomic piles to generate electricity, and the United States does not do this, because

American capitalists do not agree. They have a lot of electric power stations. If they use atomic energy to generate electricity, the profits of the capitalists will be severely affected. So they use [atomic power] on the military side and, in this way, military-industrial capitalists can reap great profits. Recently, in a report to Congress, [President] Eisenhower said that he wanted to use atomic power for small-scale submersible aircraft carriers. Is this not a good comparison? Fifth, we need to put together a group of students and direct them towards the study of physics. By international standards, the level of our experts cannot be considered as high. But, with even a few, things are not easy. There are just too few people to do this kind of research in China. In the past not enough attention has been paid to this in assigning students. Now we are paying attention and will undertake reforms. Yang Xiufeng and Gong Zirong should assign some good students in the future. In the past students assigned to study physics were of neither good scientific nor good political quality. Although we will openly publicize the peaceful use of atomic energy, work [on nuclear energy] will remain secret, so both scientific and political quality must both be good. When the students sent abroad for study by various ministries return to China, if the Academy of Sciences wants them, it has priority. We must assign good ones to university physics, chemistry and mathematics departments. We didn't promote this in the past, but now we must promote this; it just won't do not to have enough [talented] people. The Soviet statement says that it will help in our development and broadly assist us. For this, we will need at least 300 to 500 specialized personnel; the present number is insufficient, and we must train [more]. Though it will take four or five years from the time they start school, this will be alright. We also need to increase [the number of] college engineering departments. The Ministry of Higher Education should approve the establishment of an applied physics department at Tsinghua University. Minister Yang Xiufeng, do you understand atomic energy (Minister Yang Xiufeng replied: I don't). If you don't, you should go and audit courses. Without understanding atomic energy, you won't enjoy [your work]. Sixth, we must gradually extract the current experts in atomic physics from administrative work. Only then can we strengthen the organization of physics experts. Qian Sanqiang is Secretary General at the Academy of Sciences and also Vice Chairman of the Youth Federation; Qian Weichang is Dean of Studies at Tsinghua University; Zhou Peiyuan is Dean of Studies at Peking University; at Zhejiang University there is a specialist in physics named Hu Qiming who is serving as Deputy Dean of Studies, and who we have tried to transfer [to Beijing] for a long time without success; now we must issue an order to transfer him; we must "liberate" them from administrative units. If no one suitable can be found to be dean of students, just let there be an honorary dean of students. In sum, we need to call experts back to the ranks. If any of you know of specialists, recommend them, don't hide them.

(3) Carry out work conscientiously. In promoting the peaceful use of atomic energy, we must work seriously and conscientiously, and must protect secrecy, as the country is presently doing. If we do not carry out broad-based education, we will not be able to achieve results. Uranium mines must remain secret, but, what exactly a uranium mine is something that everyone needs to know, and must gradually learn. It just won't do if miners see a uranium mine and don't know it. The Ministry of Geology has more than 20,000 people working on drilling teams; the Ministry of Fuel Industry has 40,000; and the Ministry of Heavy Industry has 20,000. They all must know when they see uranium-bearing rock. This is common knowledge. We must promote education among the people. We must enlarge and enlighten everyone's vision, [but] after discovery [of uranium], of course, secrecy must be protected, and we must distinguish between general [knowledge] and secrets. The job of serious research is the work of a small number of people, but opposition to the use of atomic weapons is something for hundreds of millions, and the expansion of education in atomic energy is something for millions.