

## Staffing and Recruiting in the USSR Nuclear Project\*

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**Evgeny Artemov**

Institute of History and Archaeology,  
Ural Branch of the Russian Academy of Sciences,  
Yekaterinburg, Russia

**Evgeny Vodichev**

<sup>1</sup>Novosibirsk State Technical University,  
Novosibirsk, Russia;

<sup>2</sup>National Research Tomsk State University,  
Tomsk, Russia

This review considers a monograph by N. V. Melnikova dedicated to the reconstruction of the most significant aspects of staffing in the atomic project in the context of the Soviet economic system. Despite the abundance of publications discussing the history of the creation of nuclear weapons in the USSR, this topic has not yet received adequate coverage, and the monograph under review fills this gap with a wide range of problems examined. More specifically, it addresses the issues of who determined the personnel policy in the nuclear project, what its specificity was, how staffing and recruiting occurred in practice, and due to which factors it was possible to quickly create a powerful and qualified team of the nuclear weapons complex and encourage people to work intensively and responsibly. The research makes a significant contribution to the historiography of the atomic project. However, its value is not limited to this. Some generalizations and conclusions in the monograph make it possible to understand the strengths and weaknesses of the “socialist economic system” and to clarify how it was possible to succeed in solving tasks significant for the country.

**Keywords:** USSR atomic bomb project, personnel policy, nuclear weapons complex, Soviet economic system

В рецензии анализируется содержание монографии Н. В. Мельниковой. Она посвящена реконструкции наиболее существенных сторон процесса становления и развития кадрового потенциала атомного проекта в контек-

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сте советской экономической системы. Отмечается, что несмотря на обилие публикаций, в которых рассматривается история создания ядерного оружия в СССР, эта тема не получила должного освещения. Рецензируемая монография в значительной мере восполняет этот пробел. В ней рассматривается широкий круг проблем: кто определял кадровую политику в атомном проекте, в чем заключалась ее специфика, как она осуществлялась на практике, за счет чего удалось в кратчайшие сроки сформировать мощный квалифицированный коллектив ядерно-оружейного комплекса и побудить людей интенсивно трудиться, ответственно относиться к выполнению своих обязанностей. Проведенное исследование вносит весомый вклад в историографию атомного проекта. Но этим, по мнению рецензентов, его значение не ограничивается. Содержащиеся в монографии обобщения и выводы позволяют лучше понять сильные и слабые стороны «социалистической системы хозяйствования», прояснить, за счет чего ей удавалось добиваться успеха в решении важных для страны задач.

*Ключевые слова:* атомный проект СССР, кадровая политика, ядерно-оружейный комплекс, советская экономическая система

The implementation of the Soviet atomic project is one of the most exciting pages in Soviet history. In the Russian public consciousness, it is strongly associated with outstanding breakthroughs in the development of science, technology, and production. It is surprising how the Soviet Union, which suffered huge losses in the recent World War II, managed to solve such a difficult task as the creation of nuclear weapons in a short time. It is not a coincidence that so many publications of various genres are devoted to the history of the atomic project starting from popular essays and to solid scientific monographs. The works of a research nature touch upon various aspects of mastering nuclear energy, such as the development of Soviet atomic science and technology; the creation of the nuclear industry and its individual enterprises, design bureaus and institutes; construction of the “closed” cities; contribution of intelligence services and the USSR’s own efforts to solve scientific and technical problems; biographical sketches of the leaders and main executors of the atomic project; its impact on the economy, social sphere, development of international relations, etc. [Толстиков; Мельникова, Джозефсон].

Among them, an important place is occupied by collective works devoted to the formation of enterprises and organisations of the nuclear weapons complex in Ural Region [Атомные города Урала. Город Лесной; Атомные города Урала. Город Снежинск; Во главе науки ядерного центра на Урале, etc.]. They were prepared by the joint efforts of leading experts in the nuclear industry and historians. These works are supplemented by monographs of Ural researchers, which also became possible thanks to such cooperation [Новоселов, Толстиков; Артемов, Беделъ; Новоселов, Носач, Ентяков; Артемов; Кузнецов]. They combine the analysis of the institutional, scientific, technological, and production aspects of mastering

nuclear energy. As a result, the reliability of historical reconstructions of the process of creation and development of the nuclear industry increased. At the same time, prospects are opening for broader generalisations towards the key problem of Soviet economic history, namely, assessing the viability, potential and real possibilities of the “socialist economic system”.

The matter is that many researchers point out its “innate” inefficiency and fundamental irresponsibility. It is argued that, at best, the Soviet economy was able to satisfactorily solve the problems of increasing production of homogeneous types of products that were easy to measure but “failures” were constantly observed in the development of high-tech industries, which were uncompetitive by world standards. In part, their lagging behind was compensated by the excessive application of labour and additional costs of material resources. Import of Western equipment and technology supplied in exchange for commodities played an important role in raising the technical level of production. Such measures, however, could change nothing fundamentally. The Soviet economy was inefficient and unstable “by its nature” that ultimately resulted in its collapse [see: Гайдар, с. 322–360; Olson, p. 111–156; Ericson, p. 52–76, etc.].

Numerous facts are referred to in support of these judgments. However, they have not managed to indicate the fatal inability of the Soviet economy to self-development yet. At least, this conclusion is true in relation to the nuclear industry. Obviously, to create a high-tech industry and maintain its competitiveness with foreign analogues for decades, it was not enough to mobilise resources alone supplemented by imitations of Western technologies, access to which was also limited. Accordingly, the question can be posed somewhat differently: why did the Soviet economic system, being able to quickly create new high-tech industries related to the solution of priority military-technical tasks, turned out to be incapable of transferring innovative technologies to the consumer economy? And the second point related to the first one: to which extent did the tools used in organisation and management, as well as social practices developed in connection with this have chances to be adapted to the needs of the socialist economy as a whole? In other words, there is the question of whether it is possible, based on the positive experience of certain high-tech branches, such as the nuclear industry, to talk about their reliance on the “hidden reserves” of the Soviet economic model, which made it possible to go beyond the limitations of the “shortage economy” [see: Корнаи]? Or are such examples just rare exceptions that only confirm its “inherent” inefficiency and fundamental resistance to changes, since, within the framework of the mobilisation model, the atomic (and related) industries were artificially removed from the scope of the general principles, on which the Soviet economy was based in its other, non-priority segments.

In any case, for an optimal functioning of the high-tech sectors of the USSR economy which belonged to the military-industrial complex Soviet economic institutions required special “tuning”. N. V. Melnikova’s book under review demonstrates how this happened in practice during the for-

mation of scientific and production teams in the nuclear industry [Мельникова]. The author of the book represents the Ural academic school of historians. The monograph reconstructs the “most significant aspects of formation and development” of the personnel potential of the nuclear project “in the context of the Soviet economic system”. The book considers a wide range of issues, from the institutionalisation of the appropriate personnel policy to “internal social practices of the atomic community” (p. 7, 8)<sup>1</sup>. In other words, the author aimed to show how and by what means it was possible to provide the nuclear project with necessary personnel, what the specificity of the organisation of the work of the teams was, and what encouraged people to work intensively and take their duties responsibly.

The following features of the study are worthy of noting. First, the author considers the atomic project as a priority state programme that had a clearly defined target. It consisted in solving the scientific and technical issues of mastering nuclear energy, creating a material support base, expanding the reproduction of nuclear warheads, and equipping the armed forces with them. Hence, the chronological framework of the study includes the years from the “launch” of the atomic project during World War II until the nuclear weapons complex received a sustainable development path in the second half of the 1950s (p. 8). Secondly, the author focuses on the formation of teams of the scientific and production parts of the nuclear weapons complex and the construction organisations involved in building its facilities, as well as the “strengthening capacities” of the personnel of the allied enterprises. Consequently, the reconstruction of ways of staffing in the military component of the nuclear weapons complex (test sites, structures that accepted, stored, and ensured the proper readiness of “products” for combat use, etc.) remains “behind the scenes”. This is a separate topic that requires a special study.

The structure of the monograph is logical following the intention of the author. It consists of an introduction, seven chapters, and a conclusion. As is customary, the introduction, outlines the goals and objectives of the work, providing a brief overview of the historiography, methods of analysing particular historical material, and presenting the source base of the study. The introduction indicates that the work contains all the components necessary for large-scale historical reconstructions.

The first chapter discusses the process of institutionalisation of the personnel policy in the nuclear project. Of course, N. V. Melnikova is not the first scholar to address this issue. But relying on the historiographic background, she managed to give a systematic idea of how everything was carried out in practice. The key issue was the formation of specialised personnel services responsible for the selection, promotion, and placement of the “necessary” workers. Since the nuclear industry was created from scratch, it caused an unprecedented growth in its personnel potential. In the mid-

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<sup>1</sup> Here and below, references to the reviewed publication are given in parentheses with page numbers.

1950s, the number of people employed in the nuclear industry exceeded seven hundred thousand employees (including builders) not counting the enterprises and organisations of the allied industries that performed one-time tasks for the atomic project (p. 42, 43). At the same time, the procedure for recruiting teams in the nuclear industry was changing. In the period of its formation, it was carried out in the “manual mode” and was of an individual character. Even the highest political leadership including Stalin himself participated in the process of appointing the chief administrators of the atomic project, directors of the parent enterprises, and heads of the main scientific and technical areas.

Indeed, such an order was not suitable for mass mobilisations, and only specialised personnel services could cope with it. The monograph provides a detailed description of their formation, composition, competence, and hierarchy. Particular attention is paid to the interaction of personnel services of the First Main Directorate under the Council of Ministers of the USSR (the executive body of the nuclear project). In the selection and “promotion” of personnel, it closely interacted with party institutions and security agencies. They jointly assessed the “business and political” qualities of employees and their reliability but in case of a disagreement between them, the leadership of the atomic project had the final say. After Stalin’s death and the liquidation of the Special Committee, measures were taken to increase the “leading role of the party”: with the institution of so-called authorised representatives of the Council of Ministers of the USSR, which “observed” the structures, involved in the implementation of the personnel policy in the nuclear project and coordinated their activities being abolished. At the same time, “political work” with personnel in the nuclear industry, the right to coordinate their “nomination” and “relocation” was given to the newly formed Political Administration of Minsredmash (the Ministry of Medium Machine Building), which replaced the Special Committee. However, the leadership of the nuclear industry sought to pursue the same policy. According to the author’s conclusion, “for some time, the inertia of the previous procedure for appointments was still in effect” (p. 49, 50). In fact, it remained unchanged until the completion of the nuclear programme.

If the first chapter says which structures were involved in the recruitment of personnel in the nuclear industry, the second one analyses the mechanism and tools of the personnel policy. Attention is focused on the requirements for employees, sources, and forms of replenishment of the teams, the procedure for coordinating transfers of the intended candidates from their previous place of work to the industry, and the effectiveness of sanctions for those who evaded the “call”. The relevant rules were within the legal framework of the time but allowed for extensive “improvisation” in the enforcement of the established norms of the law. This was widely used to achieve the general goal of the personnel policy, namely, to provide the main production of the nuclear industry with qualified workers capable of successfully solving the tasks allocated (p. 52–56). Certainly, regarding recruiting various categories of workers, the chapter provides a detailed

description of some specifics. The key role in the successful implementation of the nuclear project was assigned to responsible executors and leading specialists. Therefore, in their selection, an "individual approach" was used. Various means and methods were utilised to obtain the consent of the intended candidates for the transition to the structures of the atomic project: from "explanatory conversations" to administrative pressure. To a large extent, the principle of voluntariness was observed in relation to scientists, and many of them immediately agreed with the offers they received. But there were some who were not attracted to work for the nuclear programme. They were being convinced by the promises of various preferences, but the persuasion had some limits. It ended in case of the unconditional need for a particular worker and such a person received a mobilisation order, which he/ she was obliged to fulfil.

In the post-Stalin era, this practice of "administrative pressure" became limited and those who were previously "mobilised" received a certain degree of choice. First, it was used by a number of prominent scientists. They were able to leave the "closed" facilities of the nuclear industry, where they had lived and worked for a long time. Such an outflow of specialists created certain difficulties in the scientific and technical support of the nuclear project (p. 91, 92). The issue was tackled in two ways: by creating conditions for the accelerated professional growth for younger employees and by expanding the recruitment of university graduates.

Ordinary workers and employees, as well as middle managers were recruited to work in the nuclear industry mainly through periodic mass mobilisations. During the "conscription", methods of positive and negative motivation ("carrot and stick" approach) were used. The mobilised were promised various material benefits, and for the most of them, this was an important argument. However, some people, despite seemingly tempting prospects, did not want to move to new obscure places of work that, as a rule, were associated with a change of residence. But the author polemizes with the assertion widespread in the literature that tough "administrative pressure" did not allow the intended candidates to evade mobilisation. In fact, there were many cases where this occurred, and for the "evaders" it did not incur negative consequences. In general, enterprises and organisations of the nuclear industry were interested in recruiting people who voluntarily agreed to work for them. It was rightly believed that such people were more predisposed to productive and hard work. It explains the "liberal" attitude towards those who did not want to obey the mobilisation orders, especially if it was easy to find a replacement (p. 71–73).

Starting from the mid-1950s, the recruitment of the "atomic" teams based on orders of enterprises of the related industries gave way to public call. It was also a kind of mobilisation, only instead of orders, the authorities used the enthusiasm of young people who, at the call of the "party and government", "expressed their desire" to work "at the most important construction sites and enterprises of the country" (p. 81). The author also closely examines the circumstances associated with the recruitment of Ger-



man specialists attracted to work in the atomic project after the defeat of Germany in WWII, as well as prisoners of war, although their contribution to the atomic project was minimal (p. 74–77). It explains why the management of the nuclear project sought to replace the “special contingent” among the builders and how it worked in practice (p. 122–126).

The third and fourth chapters give an answer to the question of who was selected to work in the atomic project. In the study, all participants are divided into various groups, such as chief administrators, heads of scientific and industrial organisations, engineering and technical specialists, workers, employees engaged in the main and auxiliary production, military builders, prisoners, German specialists, and prisoners of war. Data are provided that make it possible to judge the level of their qualifications, production experience, and demographic characteristics. Melnikova does not pretend to create any kind of generalised social “portrait” of the participant of the events. In fact, this is impossible to do, both due to the large number of employees and the heterogeneity of their composition, and the incompleteness of sources, access to which is very limited for researchers (p. 12, 13).

At the same time, the analysis of socio-demographic characteristics of those employed in the nuclear industry makes it possible to clarify important features of the personnel policy. The author notes that when recruiting staff, preference was given to younger age categories. It was easier to induce them “to do their best”, to interest them in the prospects for professional and career growth, in improving their financial situation, etc. (p. 133). This rule applied to everyone: from the chief administrators of the nuclear project to the ordinary personnel of the main production. Of course, in the selection and promotion of personnel not only the age criteria were used. In the late 1940s – early 1950s, great attention was paid to the ethnicity of a candidate. That was the time of the “struggle with rootless cosmopolitans”, and “persons of Jewish ethnicity” were mainly referred to such a stratum. For many representatives of personnel services, state security agencies, and party authorities, the Jewish ethnicity was a marker, *a priori* indicating political unreliability. Hence originates the desire to limit the inflow of Jews into the structures of the nuclear project. This primarily applied to scientific and technical personnel.

However, for the top management of the nuclear programme, completely different qualities were of key importance, such as their qualification, initiative, efficiency, responsibility, etc. This smoothed out the manifestation of anti-Semitism in the personnel policy. Similar problems arose in the recruitment of non-partisans. It was believed that the CPSU and Komsomol members were more suitable for the atomic industry as more “politically seasoned” and trustworthy, and the atomic personnel officers tried to act in accordance with this criterion. But if a specific person was needed for the production, then the lack of party membership and/or “certain ethnicity” was not an obstacle for employment. In this case, “a blind eye approach” was used when recruiting those who had repressed relatives or relatives living abroad, and even those who had a criminal record. Such a pragmatic

approach provided the nuclear project with qualified and capable personnel. And, according to the author's fair conclusion, this became the key to its successful implementation (p. 134–140).

The author pays special attention to the gender aspect of the personnel policy. Before Melnikova, this topic was not specifically studied in Russian historiography in relation to the atomic project. So, in this respect, she is a pioneer. The author managed to show the specifics of attracting women to the nuclear project, their contribution to the formation and activities of the enterprises and organisations of the nuclear industry. It is noted that the principle of gender equality was legally enforced in the Soviet Union. In accordance with it, the right of women to choose a profession, to receive education without any restrictions, to hold leading positions, etc. was declared. But in practice, it was not observed in all cases. So it was in the atomic project, especially when it came to promotion to positions implying high responsibility. In the governing bodies of the nuclear project – the Special Committee, the Scientific and Technical Council, the Board of the First Main Directorate and Minsredmash, among the directors of institutes, design bureaus, major industrial enterprises, and heads of construction organisations – there were no women at all. Nor were they among the main developers of nuclear weapons (p. 142–144). In other cases, there was no obvious discrimination. Despite regulatory restrictions, women worked even underground, in uranium ore mines, and in such hazardous industries as the separation of plutonium from irradiated uranium blocks they made up a majority (p. 146–156). In general, women accounted for up to a third of the personnel of the main enterprises of the nuclear industry. No prejudice existed, although historiography sometimes claims the opposite [see: Fitzpatrick, p. 139, etc.], in their employment as line managers and specialists (except for appointment to major administrative positions). Of course, this was a double burden for women, since they were, as a rule, “working mothers” (p. 169–172).

The nuclear industry was created anew. It was a science-intensive production, unparalleled in the Soviet industry. It also had special requirements to the observance of technological discipline. Therefore, employees of the newly organised enterprises and even newly appointed industry leaders had to be “equipped” with special knowledge. Their training was carried out in several ways, the role of which changed over time. At first, it all came down to the creation of special courses, which all workers transferred from related industries were to take. Also, they could pass internships at the institutes and design bureaus that carried out scientific and technical support for the nuclear project. As a result, in a short time, it was possible to form the core of the nuclear industry team. However, it became clear that only a multi-level educational system would be able to cope with the task of steadily replenishing the enterprises and organisations with qualified personnel (p. 183).

The formation of such a system began at the stage of launching the nuclear project. First, the Moscow Mechanical Institute (since 1953, the Moscow Engineering Physics Institute) was transferred to the jurisdiction of



the First Main Directorate. Then “closed” physical and technical faculties were created in several leading universities of the country. Formally, they belonged to the system of the Ministry of Higher Education but worked according to special curricula, were financed to the estimate of the First Main Directorate, and a significant part of their teaching staff was directly connected with the nuclear industry. For training of junior and middle technical personnel and skilled workers, a network of technical schools, vocational schools and schools for factory training subordinated to First Main Directorate was created. By the mid-1950s, the main part of the personnel replenishment was already represented by graduates of these educational institutions (p. 186, 193).

It is worth noting that not all aspects of this process are considered with due completeness in the book. Almost no attention is paid to the training of highly qualified specialists – Doctors and Candidates of sciences (Rus. *доктора и кандидаты наук*). But the validity of the main conclusion of the chapter is doubtless. The close relationship between the educational process, science, and production became the key to the success of the Soviet system of training “atomic” personnel. Thanks to this integration, the nuclear industry received workers capable of relying on the latest scientific and technological achievements in their practical activities (p. 224).

Mass mobilisations and a special personnel training system made it possible to provide the nuclear industry with qualified personnel in sufficient numbers. However, there was the issue of encouraging people to do their best and provide high-quality, intense, and productive performance, and a responsible attitude to work. The sixth chapter of the book is devoted to these aspects. Melnikova adheres to the notion developed in historiography that the labour motivation in the atomic project combined the methods standard for the Stalin era: material incentives and moral encouragement, education and persuasion, coercion and violence. But the extraordinary nature of the nuclear project made it possible to apply them “creatively”, without looking back at any regulatory legal acts or the generally accepted practice. “Deviation” from the established norms in the “carrot and stick” policy was extended to all categories of personnel without exception. This opened wide opportunities both for encouraging “distinguished workers” and for punishing “negligent” ones. Such a policy was not fixed in laws or written in any institutions. It was established during everyday practice. However, all participants in the atomic project were aware of the existence of informal rules that allowed any sanctions to be applied to them, as well as of the incentives that went far beyond the usual limits.

In historiography, when reconstructing the motivation system used in the atomic project, attention is often focused on just one of its aspects that distorts the overall picture. To overcome such one-sidedness, Melnikova divides motivation into external incentives and internal motivation. Based on the analysis of comprehensive material, she demonstrates that intrinsic motivation for productive work played a no less important role than coercion. All participants of the atomic project aspired to reach material

well-being, forge a career and improve their social status. The widespread perception of the importance of one's work for the destiny of the country and pride to contribute to such a noble cause should be added to make the picture complete. All tools of the external positive stimulation of labour were aimed at activating these personal attitudes. Of course, there was certain specificity in their application to various categories of workers, and the author describes it in detail in this chapter. Due attention is paid to the motivation of work of the "special contingent": prisoners, special settlers, etc. It is stated that their motivation was reduced as a result of tough administrative and repressive measures. Incentives were limited to food supplements in addition to the basic nutritional norm, and reductions in the term of imprisonment for those who fulfilled and overfulfilled production tasks. Since 1950, wages were paid to all prisoners (p. 253–255) but such measures could not fundamentally improve the attitude of the "special contingent" to work. It is not a coincidence that the leadership of the atomic project sought, when such an opportunity arose, to replace it with a "civilian contingent" and soldiers of military construction units.

The last, seventh chapter of the book is devoted to the analysis of the "atomic social space". Together with the conclusion, it largely determines the innovative nature of the study. The main conclusion the author makes is that thanks to the purposeful efforts "from above" and self-organisation of participants of the atomic project, it became possible to form a relatively autonomous socio-professional community. It possessed specific mental qualities and norms of behaviour, acutely felt its peculiarity and involvement in the system that carried out the most important state mission. Of course, the atomic community was not homogeneous. It was distinguished by multi-layered, very strong social differentiation, and all the features of the Soviet model of etatisation of labour were fully extended to it, determining the specifics of social relations. But, according to the author, "the circumstances that encouraged the project, its very nature (or content) and the regime and secrecy in which it was implemented became the system-forming grounds for the distinctive characteristics of the "atomic" personnel potential" (p. 332). Consequently, all participants in the nuclear programme – from its leaders and outstanding scientists to ordinary production personnel and builders – were united by similar living and labour conditions and a common responsibility for achieving the final result. This made it possible to use the human capital involved in the nuclear project to the maximum extent, and successfully solve tasks that were on the edge of possibility.

However, the question immediately arises of why the experience of the atomic project was not widely used. After all, the subculture of the "atomic community" was based on the same "Soviet" principles as in other professional communities. It seems that there should not have been unsolvable problems when transferring the positive experience of "working with personnel" accumulated in the atomic project to other industries. The study does not explain why this did not happen. Everything is limited to the assertion widespread in historiography that "the dissemination of the ad-

vanced methods” was not “a priority direction of the economic policy in the country” (p. 340, 341). The above, however, does not change the very positive assessment of the study. Its originality is beyond doubt. The information contained in the monograph, the generalisations and conclusions drawn by the author undoubtedly make a significant contribution to the study of post-war Soviet history.

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