7 Building Norilsk

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NORILSK IS TODAY a city of some two hundred thousand residents located in the Krasnoiarsk Territory of Northern Siberia on the Taimyr Peninsula. It is the northernmost major city of Russia and the world's second largest city, after Murmansk, above the Arctic Circle. It is linked by rail to the Kara Sea, and its mineral products can be shipped by the Northern Sea route. In winter the temperature drops to minus 45 degrees Fahrenheit, and Norilsk is without sun for months at a time. The Norilsk region contains more than a third of the world's nickel reserves, and 40 percent of the world's reserves of platinum as well as significant amounts of cobalt and copper.[1] Between 1935 and 1953, Norilsk housed one-third of a million prisoners of the Soviet Gulag, who constructed its facilities and then mined and processed its minerals. This chapter describes the building of this remote and gigantic industrial complex by Gulag prisoners.

The Gulag economy can be studied through its history, its

1. http://econ.1a.psu.edu/~bickes/norilsk.htm.

administrative structure, or its economic functions.[2] Yet if we focus on the working arrangements of the Gulag, we may learn more about them by studying the parts of the Gulag than by studying the whole. This chapter provides a case study of a Gulag camp and its associated industrial complexes, located in Norilsk and its environs. Chapter 5 described the Norilsk labor force. The current chapter deals with the construction of the Norilsk metallurgical complex, its transportation infrastructure, and the Norilsk Correctional-Labor Camp, called Norillag (meaning Norilsk camp), which was created in 1935 and operated until 1956. This chapter examines the decision to build Norilsk, the subsequent decision to turn the project over to the NKVD and its Gulag administration for development, and finally, Norilsk's difficult construction starting in 1935. This account is based on original Norilsk archival documents from the Soviet state and party archives.

EXPLORATION AND DESIGN

The geological study of the Norilsk area began in earnest in the early 1920s,[3] but the first large expedition, consisting of 250 experts, was dispatched to Norilsk only in 1930. This expedition was under the auspices of the Main Administration for Nonferrous Metal and Gold of the Supreme Council of the National Economy, which took on the initial responsibility for developing Norilsk's reserves. The expedition concluded that the Norilsk deposits were rich enough to warrant the start-up of development. In 1933 about 500 workers, employees, engineers, and technicians were already working on this

2. M. Dzhekobson and M. B. Smirnov, "Sistema Mest Zakluchenia v RSFSR i SSSR. 1917–1930," *Sistema Ispravitel'no-Trudovyh Lagerey v SSSR. Spravochnik* (Moscow, 1998), p. 10–24; M. B. Smirnov, S. P. Sigachaev, and D. V. Shkapov, *Sistema Mest Zakluchenia v SSSR. 1929–1960* (Ukaz. soch.) pp. 25–74; O. V. Khlevnyuk, "Prinuditel'niy Trud v Ekonomike SSSR, 1929–1941," *Svobodnaia Mysl'*, 1992. No. 13. pp. 73–84.

3. N. N. Urvantsev, *Otkrytie Norilska* (Moscow, 1981).

task at Norilsk, but their number was too small for significant progress.[4] The exploration and development of Norilsk remained largely under the heavy industry ministry until 1935, when it was transferred to the NKVD and its Gulag administration. This transfer was legalized by the top-secret Council of People's Commissars Decree No. 1275-198ss., dated June 23, 1935, "About Norilsk nickel industrial complex construction,"[5] which documented that the infrastructure surrendered to the NKVD was minimal.[6] Thus, the Gulag administration had to start the construction of Norilsk practically from zero.

The minerals of the Norilsk area were significant for Soviet industry. The most valuable mineral was nickel, contained in local ores, which also had significant traces of copper, cobalt, and precious metals, such as platinum. Although platinum, copper, and cobalt later acquired considerable significance, nickel was at the time considered the basic product to be produced in Norilsk. As today, nickel in the 1930s was mainly used in the production of high-quality stainless steel, which was sought after by the military. In 1935 when the decision was made to proceed with development, only a small part of the actual deposits was known. Two years later, estimates of recoverable reserves were raised by a factor of six. According to 1939 data, Norilsk's deposits of nickel made up "48 percent of all deposits in the USSR and 22 percent of world deposits, not including the USSR." Copper deposits equaled "10 percent of USSR deposits and 2 percent of world deposits."[7] According to an October 1938 report, platinum deposits " . . . appear to equal 549,780 tons, which puts them in first place in USSR and accords

4. *Sovetskiy Taymyr*. May 30, 1933. Quotation from: A. L. L'vov, Noril'sk. Krasnoyarsk, 1985, p. 28.

5. State Archive of Russian Federation (hereafter—GARF). 5446.1.481: 194–199.

6. Ibid. See also GARF 9414.1.854: 4–28. Ibid. 968: 1–46.

7. GARF 9414.1.29: 54.

them status of world significance."[8] Natural conditions were favorable for the mining and processing of Norilsk ores because large deposits of rich coal were located in the region and served as a power supply both for smelting and for the transportation facilities operated by the Northern Sea Route Administration, the Merchant Marine Ministry, and the Yenisei Steam Navigation Company.[9]

Thus, the enormous economic and military significance of Norilsk was well established at the start of the second half of the 1930s when responsibility for exploiting these riches was placed squarely on the shoulders of the Gulag. The Council of People's Commissars decree of June 23, 1935, assigned the NKVD the responsibility of constructing the Norilsk nickel complex and obliged the NKVD "to organize a special camp for this purpose."[10] The June 1935 decree made Norilsk a top-priority construction project and provided the basic specifications and terms of its realization. The complex should be designed to produce "10,000 tons of nickel annually," and its launch was scheduled for 1938, after three years of construction. The NKVD was obliged to "begin an open field operation of Norilsk deposits starting January 1, 1936," "to complete its exploratory and research work in 1935," and "to ensure the completion of the fifteen-kilometer narrow-gauge rail link between Norilsk and Piasino and the 120-kilometer rail link between Norilsk and Dudinka by the end of 1936." The project design was assigned to a special design group of the Ministry of Heavy Industry, which was to be formed from the best experts of Union-Nickel-Project-Design (Soiuznikel'proekt). The deadline for completing the design was set for August 1, 1936.[11] Norilsk's pri-

8. Russian State Archive of the Economy (hereafter—GAE) 9022.3.1694: 16.
9. GARF 9414.1.29: 53.
10. SNK Decree No. 1275-198ss. of June 23, 1935, GARF 5446.1.481: 195.
11. Ibid. For a history of this design group, see A. A. Mironov, "25 Let Nikelevoy i Kobal'tovoy Promyshlennosti Sovetskogo Souza i Perspektiva ee Razvitiia,"

ority can be seen in the way in which the Ministry of Heavy Industry supplied Norilsk fully and ahead of schedule with experts, scientific and technical consultations, and studies of "correct management of construction operations."[12] The financing for the design and purchase of equipment and materials was to come directly from the Council of People's Commissars' own reserve funds. Ten million rubles were assigned to Norilsk in 1935 alone. The State Planning Commission was authorized to allocate additional funds for equipment and materials within ten days to take advantage of the short navigation period in summertime.

The decision to assign Norilsk to the Gulag administration of the NKVD was made gradually. The original intent was to assign construction and operation to civilian ministries while the Gulag supplied prison labor force. The Politburo issued its most important decisions as joint decrees with the Council of People's Commissars. According to this practice, the July 1932 joint decree of the Central Committee and the Council of People's Commissars, "About Norilsk deposits of platinum and other rare metals," was introduced and accepted at the July 10, 1932, meeting of the Politburo. Paragraph 8 called on the OGPU (the predecessor of the NKVD) to "ensure exploratory work with the required labor force." Since the OGPU managed only penal labor, it is clear that the Politburo had already decided in 1932, just as the White Sea–Baltic Canal was being completed, that Norilsk would be built by Gulag inmates. The first group of prisoners arrived in Norilsk three years later. The 1932 joint decree assigned Norilsk projects to different authorities. The surveying for railway construction between Norilsk and the Yenisei River was assigned to the Ministry of Transport; equipment and expert geologists were assigned to the Ministry of Heavy Indus-

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Nauchno-Tekhnicheskoe Obschestvo Tsvetnoy Metallurgii: Dvadtsat' Piat' Let Nikelevoy Promyshlennosti SSSR (Moscow, 1959), pp. 5–14.

12. SNK Decree No. 1275-198ss. of June 23, 1935, GARF 5446.1.481: 195.

try and the Committee for Labor and Defense; radio communications were assigned to the communications ministry; and geological exploration was assigned to "Eastern Gold" (Vostokzoloto). Geological exploration was supervised by the Main Administration for Nonferrous Metals and Gold (Glavtsvetmetzoloto). The OGPU was responsible only for the delivery of labor force.[13]

The leadership's conception of Norilsk changed in 1935, when Norilsk was assigned exclusively to the Gulag administration of the NKVD. The 1935 about-face is explained by the Gulag's growing reputation for managing large projects in remote regions and difficult conditions and by the civilian ministries' aversion to working under such hazardous conditions. The development of Norilsk deposits was extremely difficult because of its remote location beyond the Artic Circle. The Ministry of Heavy Industry, which was responsible for metallurgy, for all practical purposes refused to take on the Norilsk project. In fact, the heavy industry ministry lobbied to be relieved of responsibility for such a difficult project. The People's Commissar of Heavy Industry, G. K. Ordzhonikidze, wrote to Stalin the following: "Taking into account serious difficulties in the realization of exploratory and research operations, completion of construction and the development of production in polar conditions, and also the enormous experience of the OGPU in carrying out complex construction projects in extremely difficult conditions, we conclude it is expedient to entrust the OGPU with the organization of operations on the basis of a special camp."[14]

Geologist A. E. Vorontsov supervised the exploration of Norilsk deposits from the beginning of the 1930s, and in 1935 he was

13. Russian State Archive of Social and Political History (hereafter—RGASPI) 17.3.891: 41–42.

14. L. P. Rasskazov, I. V. Uporov, *Ispol'zovanie i Pravovoe Regulirovanie Truda Osuzhdennyh v Rossiyskoy Istorii* (Krasnodar, 1998), pp. 61–62—quotation from Ordzhonikidze's letter is taken from S. I. Kuz'min, "Ot GUMZA do GUINa," *Prestuplenie i Nakazanie*, 1997, No. 5, p. 11.

appointed the first chief engineer of "Norilsk-construction" (Norilstroi). In the spring of that year, he was present at a Politburo meeting in which the draft of the 1935 decree was discussed. Vorontsov gave the following brief account of the discussion: "Stalin recommended that the project be transferred not to Otto Ul'evich Shmidt [then the chief of the Administration for the Northern Sea Route]; he has enough to worry about. It should go to the construction organizations of the NKVD."[15] Although it was unusual for the Politburo to discuss basic decisions in the presence of outsiders, the reason for the decision to transfer responsibility for Norilsk to the NKVD was obvious. The Gulag administration had evolved in the minds of top Soviet leaders from an organization that supplied prison labor to an administration that could, on its own, carry out complex construction projects of the highest priority. As noted in Chapters 3, 8, and 9, the Gulag's potential had become apparent with the construction of the White Sea–Baltic Canal, the beginning of construction on the Baikal-Amur Railroad (BAM) in 1932, and the organization of camps formed to carry out other significant economic projects.[16] Hence, the assignment of the Norilsk complex to the Gulag administration in 1935 was yet another step in this logical progression.

ORGANIZING THE NORILSK PROJECT

Only two days after the approval of the Council of People's Commissars decree, the NKVD Commissar, G. G. Yagoda, signed top-secret order No. 00239 of June 25, 1935, "About the organization of Norilsk Nickel Complex construction."[17] The camp was named

15. V. N. Lebedinskiy, P. I. Mel'nikov, Ukaz. soch., pp. 13–14. See also A. L. L'vov, Ukaz. soch., pp. 28–29.

16. M. B. Smirnov, S. P. Sigachaev, D.V. Shkapov, Ukaz. soch., pp. 30–33.

17. A. I. Kokurin, N. V. Petrov, *GULAG: Struktura i Kadry* (Svobodnaia Mysl', 2000, No. 2), p. 113.

"Norilsk Correctional Labor Camp" (acronym Norilsk ITL) and was generally referred to as "Norillag." Yagoda's order assigned to the NKVD's Gulag administration more complex and detailed tasks than the Council of People's Commissars decree upon which it was based: Yagoda called for the permanent exploitation of mineral deposits and for the development of the whole area in accord with the now-customary practice of assigning large-scale projects in remote northern and eastern regions to the Gulag. The Gulag's labor camps were to provide labor and other services to the associated industrial projects, such as the Norilsk Construction (Norilstroi) and then to the mineral and metallurgical plants to be built.[18] A precursor of the Norilsk complex, the Northeastern Labor Camp, was organized in April 1932 to provide labor for the "Dalstroi" trust (see Chapter 6).[19] The amount of detail in Yagoda's order underscores the significance of Norilsk in comparison with other large Gulag projects. Norilsk had strategic importance, and its difficult geographical conditions made the project a technologically difficult and complex undertaking. Norilsk had long winters and violent snowstorms and was remote from all means of transport. Construction, which was carried out under conditions of permafrost, required new construction technologies. The difficult climate is mentioned directly in the ninth article of Yagoda's order: "Considering the importance of Norilsk and its location in extremely difficult conditions, I impose as a duty on all bodies of the NKVD to respond immediately to all inquiries of Gulag or Norilsk camp concerning this construction."[20] Another indication of Norilsk's importance is that Yagoda directly assigned Norilsk to the Gulag

18. M. Dzhekobson, M. B. Smirnov, Ukaz. soch., pp. 18–19; M. B. Smirnov, S. P. Sigachaev, D. V. Shkapov, Ukaz. soch., pp. 25–26.

19. *Sistema Ispravitel'no-Trudovykh Lagerey v SSSR. Spravochnik*, pp. 382–385.

20. NKVD top-secret order No. 00239 of June 25, 1935: A. I. Kokurin, N. V. Petrov, Ukaz. soch., p. 114.

administration. In May of 1935—one month before the order to organize the Norilsk camp—most camp administrations were subordinate to territorial NKVD administrations. Only five camps "occupied with construction of major economic projects," were directly subordinate to the Gulag administration.[21] Norilsk was added as the sixth by order of Yagoda.

During the first three years of the project, Norilsk development was based on two entities—the Norilsk camp (Norillag) and Norilsk construction (Norilstroi). The second was the agency in charge of building Norilsk's infrastructure using penal labor from Norillag. The director of Norilstroi was initially in charge of the overall project. The draft plan of 1935 called for a production capacity of ten thousand tons of nickel a year starting in 1938, a figure that was first achieved (approximately) only in 1945. As it became clear that start-up schedules could not be met, amendments to the original plan were made. A Council of People's Commissars decree of April 26, 1938, proposed to start exploitation of the first production line (with a productive capacity of five thousand tons a year) in 1940 and to complete construction in 1941.[22] Documents from 1939 and 1940 did not project dates for when the complex would reach its proposed productive capacity and targeted only insignificant quantities of nickel production for the near future.[23] Soviet accounts of the Norilsk project remained silent on the significant delays; instead, Norilsk was described as entering production after a period of speedy construction.[24]

21. These camps were the Baikal-Amur, White Sea–Baltic Canal, Dmitrovsky, Uhta-Pechora and Temnikovsky camps. M. B. Smirnov, S. P. Sigachaev, D. V. Shkapov, Ukaz. soch., p. 39.

22. This decree was published in *Ekonomika Gulaga i ee Rol' v Razvitii Strany, 30-e gody* (Sbornik dokumentov, RAN. Institut Rossiyskoy Istorii, sost. M.I. Khlusov, Moscow, 1998), pp. 88–89.

23. GARF 9414.1.2977: 231b. Ibid. 29: 57. Ibid. 30: 43.

24. E. Riabchikov, *Plamia nad Arktikoy* (Moscow, 1959); V. A. Dar'ial'skiy, *Noril'sku—25 let* (Noril'sk, 1960); V. N. Lebedinskiy, P. I. Mel'nikov, Ukaz.

Norilsk construction suffered from significant cost overruns. The draft plan of 1938 called for a capital expenditure of 515 million rubles. This cost estimate was raised to 1.1 billion rubles in 1939 and 1940 and was later set at 1.3 billion rubles. These cost overruns were partly related to the difficult climate and to transport difficulties, but they also reflected fundamental changes in the nature of the project. As geologists discovered ever-richer mineral deposits in the region, the design focus changed from a complex that would produce semifabricated metals to one that would finish metals. As geologists found unusually rich lodes with high nickel contents, the decision was made in 1939 to expand the Norilsk plant from an experimental plant to a significant industrial complex.[25] According to the original plans of 1935, Norilsk's major product was to be semiprocessed nickel, rather than anodic or electrolytic (cathode) nickel, which was supposed to be processed in Krasnoyarsk.[26] Yet the 1939 decision meant that facilities for the final part of the production process were to be installed at Norilsk. Correspondingly, by 1940 the capability of the complex was defined not in terms of semifinished material but by "10 tons of nickel and 17 tons of copper annually." The increase in the construction budget (noted above, from 515 million to 1.1 billion rubles) was due in

Soch.; V. N. Lebedinskiy, *V Serdtse Rudnogo Pritaymyr'ia*; V. N. Lebedinskiy, "Nikel' dlia Fronta," *Voprosy Istorii*, 1981 No. 5, pp. 181–185; B. I. Kolesnikov, *Forpost Industrii v Sibirskom Zapoliar'ie. 50 let Noril'skomu Gornomo-Metallurgicheskomu Kombinatu im. A. P. Zaveriagina* (Krasnoyarsk, 1985); A. L. L'vov, Ukaz. soch. For a short account of the plant's history see also M. Ya. Vazhnov, *Bol'shoy Noril'sk: Istoria Sotsial'no-Ekonomicheskogo Razvitia. 1960–1985* (Otechestvennaia Istoria, 1994, No. 6), pp. 74–75.

25. Yu. L. Edel'khanov, "Sovershenstvovanie Tekhnologii Proizvodstva Noril'skogo Gorno-Metallurgicheskogo Kombinata," Dvadtsat' Piat' Let Nikelevoy Promyshlennosti SSSR. Materialy nauchno-tekhnicheskogo soveschania, posviaschennogo 25-letiu nikelevoy promyshlennosti SSSR, August 4–5, 1958, Verkhniy Ufaley (Moscow, 1959), p. 74.

26. SNK Decree No. 1275-198ss. of June 23, 1935.

part to the change to final processing.[27] It is difficult to disentangle the cost overruns due to such fundamental design changes from those associated with normal construction difficulties. Nevertheless, we will examine endogenous reasons for cost overruns in the next section.

FAILURES, EXCUSES, AND PROGRESS

Norilstroi, the Gulag organization in charge of building Norilsk's infrastructure, had to fulfill plans imposed on it by the Council of People's Commissars and by the commissar of the NKVD. Like any other Soviet organization responsible for fulfilling plans, Norilstroi wished to present its work to its superiors in the most favorable light. Its failures had to be explained as caused by the failures of others or by forces outside of management's control. Until 1941, Norilsk's reports were sent to the Gulag administration for review by the NKVD; thereafter they were sent to a new central administrative board within the Gulag, the Central Administration of Mining Enterprise Camps.[28] Norilsk's reports included not only statistical results but also narratives describing the course of construction and special problems and difficulties encountered. The Norilsk administration used these reports to justify their claims on resources and to ensure that their superiors understood the difficult conditions under which they were operating. Norilsk was so remote that it was difficult for Moscow to check the reports, giving Norilsk a certain leeway to fudge them.

Reports from the first three years, beginning in 1935, when the first group of more than one thousand prisoners arrived in midyear, show the extreme difficulty and hardship associated with creating new infrastructure in such a hostile environment. During this

27. GARF 9414.1.30: 41.
28. *Sistema Ispravitel'no-Trudovykh Lagerey v SSSR*, pp. 108–109.

period, the mining of coal and ores began, but construction activities concentrated "almost exclusively on construction of subsidiary facilities,"[29] such as transportation systems. For this reason, reports from the scene are less detailed than in later periods.[30] The first three years coincide with Norilsk's first management team, led by Vladimir Matveev. It fell to Matveev to explain to Gulag authorities a series of plan "failures"; the 1936 report had to explain why the plan of capital construction had not been executed. Although 33 million rubles of investment had been planned (in constant plan prices), actual investment was only 78 percent of that planned. The physical construction plan was fulfilled by only 51 percent, and construction costs were 9 percent higher than scheduled. Despite shortfalls in construction results, expenditures on construction materials exceeded the planned amount by 21 percent.[31] The 1936 report also explained why some important projects were not started (such as an experimental concentrating mill and a second temporary power station).

The management explained some plan "deviations" by citing decisions to redirect resources because of unusual circumstances, such as "the necessity to promptly launch temporary railroad traffic." Other narratives explained deviations that were outside of management's control.[32] The delay of a forty-ship expedition loaded with materials and equipment was particularly catastrophic:[33] " . . . From the 22,700 tons of consignments expected, only 6,000 tons reached the settlement nearest to Norilsk; 1,700 tons were sent

29. GARF 9414.1.29: 55.

30. T. Vensenostseva, *Sozdanie Opornoy Bazy dlia Stroitel'stva NGMK. Noril'lag pri V.Z. Matveeve* (Noril'skiy Memorial, vypusk October 4, 1998), pp. 23–25.

31. GARF 9414.1.854: 73–76, 93.

32. Ibid., 74.

33. RGASPI 17.3.975: 16; G. Kublitskiy, "Khodili my na Piasinu . . .," *Sibirskie Ogni.* 1968, No.12, pp. 127–139.

back; and 15,000 tons were kept on Lake Piasino for the winter."[34] Not only was the delivery of building materials and equipment incomplete, but because of the congestion at the port of Dudinka, the overexpenditures on labor for loading and unloading cargo were significant. The 1936 report complained that the slow delivery of prisoners due to "supply and transport difficulties"[35] caused the loss of four hundred thousand man-days "during the best construction season."[36] The 1936 report also complained about the bad physical and "moral" state of arriving prisoners, about cost limits that were unrealistic for Arctic conditions, and about "conducting work without preliminary drafts and without effective management."[37]

The minutes of the industrial managers' meeting of Norilstroi and Norillag were added to the 1936 report as an extraordinary communication to superiors to summarize the immense difficulties under which Norilsk was operating:

> It should be noted that materials of the annual report and its narrative reflect insufficiently the circumstances of construction work under absolutely abnormal conditions: . . . In 1935 an advance group of workers was sent to undeveloped tundra without necessary materials to prepare for expanding construction in 1936. This contingent had to do difficult and time-consuming preparatory work under permafrost conditions, under the most severe snowstorms, which dissipated their energy and mental state. Only a person who had experienced it himself knows what it means to preserve the necessary vitality and working energy after months of constant winds with a force from 18 up to 37 meters per second that blow continuous clouds of snow, so that visibility is about 2 meters. Stray workers were lost due to loss of orientation. They had to work in temperatures reaching 53 degrees below zero. Workers were dispersed in the tundra to pre-

34. GARF 9414.1.854: 9.
35. GARF 9414.1.854: 2b.
36. GARF 9414.1.854: 74.
37. GARF 9414.1.854: 2b.

> pare new areas for habitation and to prepare the area to receive new labor force, create stocks of materials, and to equip work places. In these conditions, Norilstroi workers conducted the first operations in making tractor and cart roads from Dudinka to Norilsk. . . .[38]

The winter of 1936 was the first Arctic experience of Norilsk's first general manager, Matveev, who had grown up in Central Asia.[39] It was Matveev who included these graphic pictures of Norilsk working conditions for his superiors in the Gulag administration. The descriptions were designed to drive home the point that norms and plans drawn up in Moscow were unrealistic when applied to Arctic construction. Norilsk's superiors, however, did not accept Matveev's "excuses" at face value. "The commentary to the report of Norilstroi," signed jointly by the Gulag's chief of the mining sector and by the deputy head of the finance-planning sector, complains of "inept maneuvering of the labor force" [underlined in red pencil] and of significant overexpenditure of funds, where the "available data do not clarify reasons for the large gap between the supply plan and its fulfillment."[40] Despite Matveev's attempt to explain to the Gulag administration why the work was over budget and behind schedule, these comments show that the Gulag administration considered Norilsk as a construction project that, although complex, should be finished on time and with the allocated resources. Although they recognized that emergency situations influenced the 1936 results, they supposed that subsequent work could be completed according to schedule. The Gulag administration brushed off Matveev's doubts—that Norilsk could be finished according to plan—by offering increased mechanization, improvements in the qualifications of prisoners and workers, and the estab-

38. GARF 9414.1.854: 2–3.
39. V. N. Lebedinskiy, P. I. Melnikov, Ukaz. soch., p. 22.
40. GARF 9414.1.854: 74, 76.

lishment of more strict control over Norilstroi by the Gulag administration.[41]

We have even richer documentation for the economic activities of 1937 because this year produced two reports, one by the soon-to-be-fired management team of Matveev, and the second by the incoming administration led by A. P. Zaveniagin.[42] Matveev's report contains a litany of plan failures: "1937 was supposed to be the year of completion of preparatory work. In 1937 it was necessary, first of all, to solve the issue of the main supply base located on the coast of the Yenisei River in Dudinka village" by completing a narrow-gauge railway line connecting Dudinka and Norilsk. Matveev reports that "this basic task of 1937 was not completed; the railway was opened only at the end of October in a condition unsuitable for exploitation in the severe climatic conditions of the Arctic Circle."[43] As a result, "the whole construction plan was foiled." The secondary power station and the experimental-enrichment factory "were not only incomplete; they were still in a rudimentary state at the end of the year."[44] These important failures are reflected in the lag of construction behind schedule: only 40 percent of scheduled investment was carried out,[45] although 212 percent of the scheduled costs were expended. The totals for 1937 were disastrous from the point of view of central economic administrators. Yet nothing suggests that the 1937 annual plan was changed when it became clear that its execution was impossible. As in 1936, Matveev continued to blame the plan failure on insufficient construction materials: "In the first half-year and in the third quarter there was no extensive construction in Norilsk, a fact explained by the lack

41. GARF 9414.1.854: 83.
42. GARF 9414.1.968: 1–46; GARF 9414.1.969: 2–17.
43. V. A. Dar'ial'skiy, Ukaz. soch., p. 16; RGAE 8704.1.948: 14.
44. GARF 9414.1.968: 2, 4–5.
45. GARF 9414.1.968: 14; GARF 9414.1.969: 4-6; GARF 8361.1.10: 19.

of construction materials."[46] The missing construction materials were then explained by the failure of the 1936 supply mission and by problems in railway construction. Matveev had the temerity to place some of the blame for supply problems on Moscow: "All major supply questions are resolved in Moscow, but Norilsk is remote from Moscow and the frequently severe conditions of Norilstroi are not taken into account," such as the difficulty of navigating the Yenisei River and the "carelessness and mismatch of the scheduled and estimated norms that regulate the operations of Norilstroi."[47] Matveev also complained about the application of "single all-union norms to Arctic Circle conditions," which had to be applied because there were no others. "Such high norms mean the underestimation of budget rates of work."[48]

The Gulag administration's reaction to Matveev's tales of failure is found in the protocol of a 1937 meeting of the Gulag balance commission chaired by the Gulag chief, I. I. Pliner. The Gulag administration's assessment of Norilsk management was merciless:

> The improper use of labor has caused a failure to fulfill the plan of construction of the narrow-gauge railroad from Dudinka to Norilsk. . . . Not only was the directive on cost reduction not executed, but a large over-expenditure over the cost estimate was allowed. . . . In view of the massive failure to fulfill the construction plan and the vast over-expenditures, we declare the industrial and economic activity of Norilsk construction to be completely unsatisfactory and uneconomical.[49]

In light of its disastrous assessment of Matveev's performance, it comes as no surprise that the Gulag protocol mentions the appointment of a new general manager for Norilsk, A. P. Zavenia-

46. GARF 9414.1.968: 19.
47. GARF 9414.1.968: 2–3.
48. GARF 9414.1.968: 45.
49. GARF 9414.1.969: 108.

gin, who took over Norilsk operations in early April 1938.[50] The reasons for Matveev's firing are related in the classified NKVD Order No. 044, "About operation of NKVD Norillag," which was approved literally on the eve of these events, March 9, 1938. It cites the massive failure of the 1937 construction plan due to "poor organization of work," the "absence of work discipline," and "cronyism" and "drunkenness" among the camp management. The management of the Gulag was ordered to develop a plan to complete the railroad construction before the end of 1938, to introduce a system of monthly operation schedules and strictly monitor their fulfillment, to finance Norilsk on the basis of work accomplished to prevent cost overruns, and to strengthen its management and engineering staff. Ominously (since this report was issued during the Great Purges), the Gulag administration issued a "stern reprimand" to Matveev and warned him "that in case of non-fulfillment of the plan for the first six months of 1938 he will be prosecuted." These warnings appeared too late. Matveev, the first general director of Norilsk, was arrested one month later.[51] On April 9, 1939, the military tribunal of the Moscow NKVD sentenced him to death, a sentence later commuted to a fifteen-year prison term.[52] In 1955 he was rehabilitated post mortem.

The new general manager, Zaveniagin, in his first report concerning the 1937 Norilsk performance, places the blame on his predecessor. After an exposition of the huge cost overruns, Zaveniagin concludes that "the 1937 over-expenditure was not justified

50. Zaveniagin was appointed chief of Norilstroi by order No. 840ls NKVD SSSR of April 8, 1938 (A. I. Kokurin, N. V. Petrov, "Gulag: Struktura i Kadry." Statia Sed'maia. *Svobodnaia Mysl'*. 2000, No. 3, p. 106). His assignment was approved during the Politburo meeting of April 25, 1938 (RGASPI 17.3.998:15).

51. *Sistema Ispravitel'no-Trudovykh Lagerey v SSSR*, p. 339.

52. A. I. Kokurin, N. V. Petrov, Uraz. Soch., *Svobodnaia Mysl'*, 2000, No. 3, pp. 107–117; Pritcha o Noril'ske. B.m., b.g. p. 7. (Post-Soviet publication of the Museum of Development and Evolution of Norilsk Industrial Complex).

by any external factors." The report criticizes the extremely low labor productivity of separate construction projects, including railway construction, "the absence of means of mechanization in the construction place, the performance of labor-intensive operations in wintertime, and insufficiently qualified workforce. . . ." As for the problem of the delivery of materials to Norilsk, the report concludes that despite the "poor organization of the shipments from Krasnoyarsk to Dudinka," "the quantity of deliveries to Dudinka during the navigation period of 1937 was sufficient for fulfillment of the capital construction plan. The solution of the supply question required only the prompt delivery of materials by railroad to Norilsk."[53]

The new management began its work with a significant reorganization of both the camp and the construction organization. The camp, Norillag, which "included the camp divisions and the department of general supplies and its commercial network," was separated from Norilstroi, the construction company, and was placed on an independent accounting system. Several new departments were formed, including a budget department with a staff of up to two hundred people, a department of work organization, an operations department, a department of design, a maintenance subdivision, a subdivision of subcontracting enterprises, and a chief mechanic's department. This reorganization was supposed to "define precisely the obligations and responsibilities of each division." The functioning of the management of construction before this reorganization was criticized as follows: "Before the second quarter there were so-called 'areas,' which merged production and camp functions."[54]

The 1938 report of the new management team spelled out its assessment of the situation and its accomplishments since the new

53. GARF 9414.1.969: 6, 8, 10.
54. GARF 9414.1.1118: 6, 9.

management team took over: "January to May was a period of complete stagnation of construction due to the lack of materials that remained in Dudinka and could not be dispatched owing to unavailability of railway transportation. From June to the second half of August, forces were concentrated on the completion of the railway to make it operative. September through December saw a period of normal turnover of goods from Dudinka and full-scale operations in Norilsk."[55] Zaveniagin's statistical results also showed marked improvement. Capital investments composed 52 million rubles or 104 percent of the authorized investment plan without, remarkably, cost overruns. Originally a higher 60-million-ruble investment plan had been authorized, but it was cut back to 50 million in October.[56] However, the level of 1938 investment was approximately twice as high as in the previous year. Norilsk's ability to carry out construction work blossomed after the start-up of normal railway transportation.

Figure 7.1 shows planned and realized investments in Norilsk for the period 1935–39. These data show that the crisis period for Norilsk construction was 1937, when Norilsk's managers and prison workers had to contend with the rigors of work in Arctic conditions and with the plan failures that were bound to occur, such as the failure of the forty-ship convoy in 1936. Once Norilsk's transportation infrastructure and reasonably reliable lines of supply were established, construction could proceed on a more normal basis. Matveev had the bad luck to be manager during this difficult period. Later management teams could build off the "failures" of his tenure. Significant construction problems remained. Although the 1938 construction plan had been fulfilled in investment expenditures, results with respect to putting finished projects into operation were less satisfactory. The completion of several major projects,

55. Ibid.
56. GARF 9414.1.1118: 5, 9.

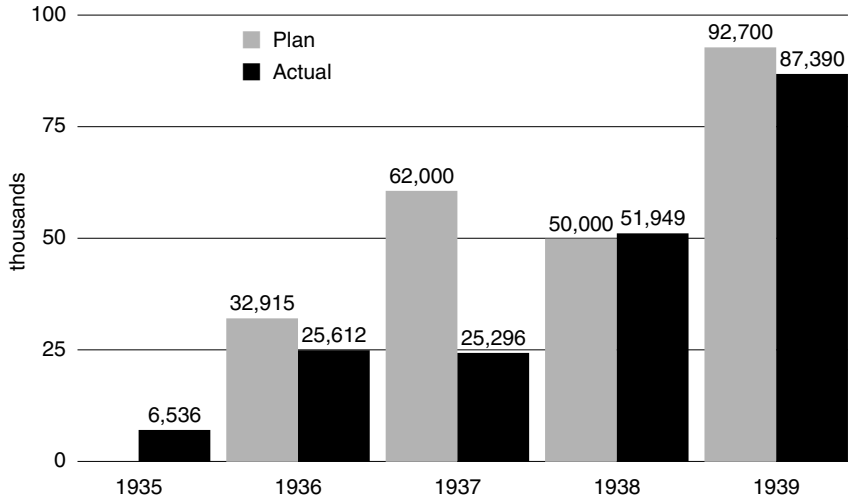

Figure 7.1 The Dynamics of Capital Investments at Norilsk Construction (in Thousand Rubles)
Sources: GARF 9414.1.854: 73; 969: 4; 1118: 16; 1.2977: 230ob.; 8361.1.102: 4.

such as the temporary Power Plant Number 2 and a few construction-materials plants scheduled for operation in 1938, were postponed until 1939, though many of them were almost finished. The delays in putting these plants into operation were caused by defects of planning, analyzed in detail in the explanatory notes to the 1938 report. For example, many of Union-Nickel-Design's plans were not suitable to Arctic conditions and had to be redesigned at the site. Supply problems continued to be severe, particularly the shortage of lumber.[57] The start-up delays, however, were also explained by frequent design changes brought about by changing circumstances. The mining of rich ores that could be smelted without enrichment required the redesign of several factories under construction. Moreover, there was no construction-financial plan, which "deprived management of the possibilities of monitoring and

57. GARF 9414.1.1118: 6, 10, 12.

controlling budget discipline."[58] Even if there had been a better financial plan, it may have been beyond the capabilities of the camp's accounting departments, which "[had] only a tiny share of qualified workers; the majority of the accounting departments [were] staffed by barely literate people."[59] The optimal use of labor was another problem. The timing of the beginning of large projects was determined by the availability of large numbers of prisoners in the middle of the year. There were too few prisoner laborers in the third and fourth quarters.[60] What's more, Norilsk prisoners were ill suited for construction; they were primarily unskilled workers whose training was conducted on the work site, thereby reducing efficiency and quality of work.

Memoirs of former Norilsk prisoners shed light on the use of prison labor.[61] Although accounts differ, former penal workers all agree on the hard and cruel working conditions in Norilsk. Some, however, recall their work with pride, citing honorary postings on the "red bulletin board" for outstanding brigade work. Those who engaged in physical labor emphasize the labor intensity of their work. Prisoners who had to level construction sites or to dig excavations in permafrost worked only with pickaxes. Workers transporting construction materials or moving earth worked with primitive wooden wheelbarrows. They had to develop their own primitive technology for working in permafrost, such as a heating machine cobbled together by a political prisoner. Prisoners were assigned to work without consideration for their physical state or qualifications. Some of the weakest and oldest prisoners were assigned to the hardest form of manual labor, while the accounting

58. GARF 9414.1.1118: 7.
59. GARF 9414.1.1118: 20.
60. GARF 9414.1.1118: 10.
61. Memoirs of former prisoners can be found in the Archive of the Moscow Society of "Memorial" as well as on the website of the Krasnoyarsk Society of "Memorial" (http://memorial.krsk.ru/memuar).

department employed able-bodied but scarcely literate personnel. Women assigned to conveyer belts that sorted ores in winter had to jump up and down on the belts until they started up again. Prisoners characterized their work as "hard, unproductive, and at times senseless." Some of them report being assigned street-cleaning duties on national holidays, after being told by their guards: "National holidays are not for enemies of the people." Thus the prisoners themselves echo the complaints of their captors, who pleaded with the Gulag administration for better equipment and technology. The NKVD and its Gulag administration continued to assign the same output norms to Norilsk prisoners, working under coercion and with primitive hand tools, as to the civilian work force. For the leadership, this prison labor was "free" and available in abundant quantities. There would be no great loss if it were wasted or not used to its full potential. Camp administrators viewed labor differently because plan fulfillment depended mainly on how effectively labor was used and how motivated prison laborers were. If they did not fulfill their plans, their managers would be demoted or, worse, imprisoned, as the first general director of Norilsk had been.

SURPLUSES AND EXPECTATIONS

The first period of Norilsk construction and economic activity came to an end in 1938 as Norilsk's second management team took control. The chief transportation links had been established. Norilsk mining operations were substantial. Norilsk produced 5,050 tons of ore in 1939; 30,130 tons in 1940; and 81,099 tons in 1941, of which 2,270 tons were high-grade ore. Norilsk was producing 4,000 tons of refined nickel by 1943. The Council of People's Commissars' original production goal of producing 10,000 tons of nickel by 1938 was met in 1945 as Soviet troops were placing the Red Flag atop the Reichstag in Berlin. The war years were a difficult period for Norilsk because of the increased demand for nickel and

the diversion of resources and workforce to the front. Throughout the period, the Gulag administration continued to receive complaints from Norilsk about the lack of labor and of scarcities in supplies. However, these complaints were not as vocal as in early years.

CONCLUSIONS

The story told here, based on the Gulag's own archives, is of how the Gulag administration took on a large priority infrastructure project that civilian ministries would not touch because of its risks. Civilian ministries, such as the heavy industry ministry, pleaded for the transfer of Norilsk to the Gulag administration with its masses of prisoner laborers that could be dispatched without complaint to the remotest and most arduous locations in the Soviet Union. After a difficult start, beginning at zero, prisoners were placed in a remote Arctic climate to build the housing and transportation infrastructure for what would become the Norilsk metallurgical complex. In this chapter the story has been told largely from a bureaucratic perspective. We have related how the NKVD willingly accepted the 1935 order to build Norilsk on its own and how the minister of interior imposed tough deadlines and tasks on the Gulag administration to complete the work on time. The NKVD refused to accept excuses for plan failure, even though plan failure seemed inevitable given the circumstances under which Norilstroi was operating. The first general manager was sacrificed, and the second management team arrived in time to take advantage of the enormous sacrifices that had taken place during the first three years of construction.

The ministry of heavy industry's near refusal to build Norilsk could be taken as a sign that it could have been built only by the Gulag—but this supposition would not be true. The heavy industry ministry simply recognized the difficulty and cost of the project and understood that the chance of failure was high. They followed the

best course in opting out, particularly when the Gulag administration appeared ready to take over the project. The Gulag's own willingness is probably explained by their unrealistic expectation that prison labor could solve all problems.

The Norilsk reports show the clash between the reality of construction in the Arctic Circle (as viewed firsthand by Norilsk managers) and the expectations of the NKVD and its Gulag administration. The NKVD assumed that prison workers could be forced to be as productive as free labor working with better equipment and in better climates. Some of these coercive measures, such as more workdays and longer workhours, are summarized in Chapter 5. Norilsk administrators pleaded with Moscow for lower work norms to reflect the lack of equipment, the poor provisions, and the Arctic cold. Moscow insisted that Norilsk fulfill the plan and not resort to excuses. This clash between reality and expectation is visible in the enormous cost overruns of the early years. Costs were calculated based on unrealistic work norms; as worker performance fell well below norms, costs soared above those planned. In effect, the NKVD's plan was to extract a surplus from Norilsk workers by forcing them to work as effectively as civilian workers in more favorable locations. The massive failure of 1937 showed the lack of realism of this plan.