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DEVELOPMENTS IN CZECHOSLOVAK POWER PLANT CONSTRUCTION, 24 JANUARY-3 SEPTEMBER 1953

[The following report describes the progress of construction on seven of the most publicized power projects currently being built in Czechoslovakia, as reported in the Czechoslovak press between January and September 1953. Related projects, such as the building of roads, bridges, and new housing areas, are included in this report; in addition, resolutions, fulfillment of plans, and manpower and supply problems are included.

The first part of the report deals with three of the 13 hydroelectric power projects (the Orlik, Slapy, and Lipno projects) to be built on the Vltava River. The second part deals with projects elsewhere in Czechoslovakia, namely, Vir, Hodonin, Cesky Tesin, and Zermanice.

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Numbers in parentheses refer to appended sources.]

VLTAVA RIVER POWER PROJECTS

Thirteen new hydroelectric power plants are being planned for construction on the Vltava River. When completed, they are expected to produce 1,750,000,000 kilowatt-hours per year. This total can be compared to that of 1937, when the total power production in Czechoslovakia was about 4 billion kilowatt-hours.(1) [The following are part of the 13 projects.]

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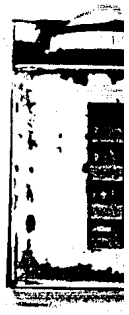


Orlik Dam

Research has been completed on the preliminary stages of preparing the Orlik dam construction site, including the building of roads, providing for power, installing a water-supply system, constructing a cement mixer, preparing a quarry and sand pit, and installing the necessary cables.

Gravel and sand for the concrete was found 3 kilometers from the proposed site, and a good stone quarry was found in the Lisnicky valley, about 300 meters above the old Pltnicek Inn.

Passageways over 30 meters long were cut into the interior of the cliff. Many experimental borings, some of which were about 70 to 100 meters deep, were made. Core drilling was used most frequently to study rock composition. Some of the holes were drilled to the bottom of the river with the aid of a 70-meter slanted probe. All of the work was done under difficult conditions without the aid of electricity; the heavy probing equipment was transported on wooden skids along steep terrain, and the water was obtained by primitive pumps up to 70 meters in height.(2)

Slapy Dam

The Slapy power plant will be located inside the dam wall and the water will pour through special slipways. Sweden is the only country with a similar type of dam, although it is much smaller than the Slapy.(3)

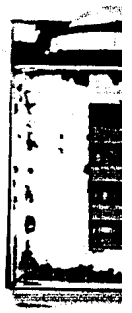
Water contained by the dam will be 50 meters high and will create a lake over 50 kilometers long (extending to Kamyk), and will be one kilometer wide in many places.(1)

Work on the Slapy dam was begun in May 1949, with the building of a new highway. Hundreds of young brigade workers from Prague Kraj came to assist in the work each month; they also built barracks for the construction workers, a mess hall, infirmary, and living quarters for power plant employees. At the same time, construction of a semicircular tunnel was begun. In October 1949 both sides of the 350-meter tunnel were joined in the heart of the cliff; waters from the Vltava River were diverted through this space so that they would not impede construction of the dam. (Now that the construction has been completed, the river is again being diverted to its original bed.) A cable railway was also built at this time. The space between both exits of the tunnel was filled and the water pumped out.

It was necessary to remove 135,000 meters of rock from the bottom of the Vltava River. Gravel from the river bottom was found to be of such poor quality that it could not be used for mixing concrete, and nothing better could be found in the vicinity. Therefore, gravel and sand had to be transported from a large gravel pit in Teletin. Another cableway was constructed from Teletin to the dam to assure faster transport.

A large concrete-mixing center was constructed in nearby Trebenice. The center has cables strung from four towers. One cable leads from the Luka pod Mednikem railroad station, from which cement is transported, the second from the Teletin gravel pits, and the other two lead to the building site.

Construction of the Slapy dam requires that the old Zvirotice Obec be inundated and a new Zvirotice be built on the shore of the resulting lake. In July 1951 the first brigade workers began preparatory work for the new construction project. As a result of a request from the cooperatives that the livestock buildings be constructed as soon as possible, a barn for 96 milch cows and a sty for 100 hogs were constructed by the end of 1951. Then 28 new houses were built around the village common; these will be ready for occupancy by the livestock farmers by April 1953.



The process of concreting began in 1952, when the dam and power plant foundations were built. Workers in the Blansko Engineering Plant completed the Kaplan turbines, the largest and highest in output of their kind in Czechoslovakia. The transportation of these to the dam site turned out to be a major undertaking. The massive turbine parts had to be placed on special undercarriages pulled by tractors. The SNB (Sbor Narodni Bezpecnost, National Security Corps) had to remove some of the power lines along the highway and close several sections of the highway from regular traffic until the transportation was completed. Within 3 days the Blansko workers had installed all the equipment and had finished mounting the turbines.(3)

On 1 May 1953 the left part of the power plant was concreted and preparations were made for installation of the first turbine. A highway was built to the power plant and another on the right bank of the river.

On 6 May 1953 the builders poured 1,203 cubic meters of concrete, which was the highest day's output during the entire construction. During the first week of May, 5,690 cubic meters of concrete were poured, which was a record week's production.(4)

Since the beginning of 1953, when a change in management hastened the tempo of construction, 73,800 cubic meters of concrete have been poured for the Slapy dam; 140,000 cubic meters still have to be poured before it is completed.(5)

[Source 6 (26 June 1953) reported the following: that 90,000 cubic meters of concrete had been poured for the Slapy dam, that workers were laying the foundation for both sides of the dam, and that work had begun on closing the tunnel.]

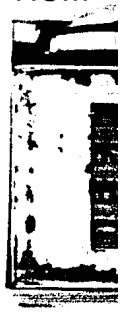
The goal for September 1953 is to prepare the central part of the power plant for installation of the second turbine.(4) [Source 6 (26 June 1953) states, however, that preparations for both the second and third turbines are expected to be completed about 1 August and 1 September 1953, and that the first turbine is to be installed by 1 May 1954.]

The new dam will help cooperative farmers raise their average production per hectare. The present struggle with dry soil will be ended after creation of the lake, when the farmers will be able to water their lands by means of sprinklers (canals cannot be used on the hilly land) and electric pumps will furnish water wherever it is needed.(3)

Two new bridges are being constructed as part of the Slapy power project. The first is in Zivohoste; the two main pillars of this bridge are expected to be completed by the time the Slapy power plant is put in operation in early 1954. The foundations for the two pillars, which are numbered three and four, rest on the bottom of the Vltava River. Pillars one, two, five, and six will be based on the two banks of the Vltava. The bridge will have a large span made of prefabricated (predpjaty) concrete, and it will be 67 meters above the present level of the Vltava. Construction is one month behind schedule, and the party organization is working hard to combat [labor] fluctuation on this project. The second proposed bridge, in nearby Cholin, will be 40 meters high. The bridges will furnish long-needed communication between Zivohoste, Cholin, and Prague.(7)

Lipno Dam

The Lipno dam will be 250 meters wide [long?] and will contain 260 million square meters of water; the resulting lake will be 42 kilometers long and 16 kilometers wide in some places.(8)



[Source 9 reported that the proposed dam would be 25 meters high and would result in a lake 40 kilometers long and 10 kilometers wide in some places.]

Construction of the dam is expected to change the entire way of life in southern Bohemia. Up to the present, Bohemia has received its power from the Most coal fields, 300 kilometers to the north. Because of the distance, about 16 percent of the power was lost in transit. The arrangement was satisfactory before the war when consumption of electricity was small, but it is no longer satisfactory, when every household has electrical equipment, new factories have been built in Ceske Budejovice, and the JZDs and state farms are using electricity more widely. The Lipno dam will deliver power both to Prague Kraj and to the north. Within 3 years Ceske Budejovice Kraj will install as many power transmission lines as were installed during the whole period of the first republic. When the dam and power plant are completed, consumption of electricity in Ceske Budejovice Kraj will be nine times greater than in 1937. The dam will assist in the industrialization of Bohemia and the electrification of agriculture. It will also help to improve soil and climatic conditions. Bohemia has always been poor in ground water; the Lipno lake will assure a continuous supply of ground water to moisten the soil. In addition, the lake will counteract the dryness of the air.(8)

Underground and underwater work on the Lipno dam is progressing satisfactorily. The pressure pits (tlacne sachty) are already 27 meters deep and 550 meters of the 3,500-meter-long tunnel have already been dug.(9) The tunnel is being built at Certova stena in Vyssi Brod to redivert the Vltava River to its old bed.(8)

An important part of the Lipno project is the construction of a housing area at Vyssi Brod. Two hundred houses have been built in the Lipno area and 120 others in a housing area at Vyssi Brod. A water-supply system, electricity, water-treatment stations, and a central heating system have been set up. The houses face the southwest to insure sufficient light. So far, over 9,500 square meters of housing area have been constructed. Work is also being completed on a hotel, part of which is already occupied.(10)

OTHER POWER PROJECTS

Vir Dam

The Vir dam project is located in Vir Obec, Bystrice nad Perstynem Okres, about 40 kilometers north of Brno. The dam will contain 56 million cubic meters of water and will create a lake 12 kilometers long. The body of the dam will comprise 464,000 cubic meters of concrete.

It was resolved to make enough progress with the concrete work in 1953 to begin filling the lake with water in the fall. The entire project is scheduled for completion by 1955, but because of the acute shortage of power an attempt will be made to put the power plant in operation by the spring of 1954. The hydroelectric power plant will have a comparatively low output; its main function will be to furnish extra power in times of peak power consumption.

During the winter, the builders are concentrating on the construction of transportation facilities, such as cable railways for transporting cement and sand from the station in Bystrice to the work site, 8 kilometers away. They are also constructing a cableway, 80 meters above the valley, to transport materials to the work site. A second concrete mixer is also being installed. The construction of a road to Policka, 60 meters above the dam, and a winding bridge below the dam are also contemplated.

Eventually, all of Korcutivice Obec and part of Chudobin Obec will have to be moved.(11)

Hodonin Thermal Power Plant

The thermal power plant in Hodonin, which will use lignite from nearby deposits as fuel, is the most important new construction project in southern Moravia. Together with the oil fields it will make Hodonin a vital power and transportation center. This will be a condensation power plant. (The exhaust steam is passed into cooling towers, and the resulting cooled water can be used again. Condensation-type power plants are 15 to 20 percent efficient, that is, they use one fifth of the potential energy in the fuel. In every 100 kilograms of fuel, 80 to 85 kilograms are lost in the form of smoke, radiation, etc.) According to estimates, the Hodonin power plant will be 32 percent efficient.

Thus far 90 carloads of steel pilings, over 270 carloads of reinforcing steel, 1,600 carloads of cement, and 3 million bricks (for the smokestack) have been used in constructing the main building; 315 carloads of lumber and a great deal of slag, stone, and sand have been used for the concrete work.

Workers on the project, who come from the Energostav, Prumstav, and Ingstav, enterprises, daily make new pledges to speed up production and increase productivity. Most of these pledges are not only fulfilled, but surpassed.

By 1 October 1953 half of the plant is supposed to go into operation, that is, two boilers and a whole aggregate must be mounted and tested by that time. However, the achievement of this goal is hampered particularly by shortcomings on the part of the delivery enterprises. In some cases these shortcomings are the direct result of a particular type of [misplaced or overemphasized] enterprise loyalty. One example is the Zavod viteznieho unora (Victorious February Enterprise) in Hradec Kralove, which furnishes boiler tubes to the Hodonin power project. From its point of view, this enterprise finds it convenient to deliver tubes for all four boilers simultaneously. From the point of view of the constructors, it would be more convenient to receive the tubes for the first two boilers as soon as possible and the tubes for the latter two boilers at some later date. Similar situations have arisen in regard to deliveries by the CKD-Dukla (Ceskoslovenska Kolben Danek-Dukla) and the Sm.M. Kirova Levice enterprises.(12)

The following installations are now being made at the Hodonin thermal power plant: a railway for the transportation of lignite, coal-handling and coal-crushing equipment, water-supply equipment (installation of which has almost been completed) and water-purification equipment, and power control equipment.

The first turbine was installed in one tenth of the time originally planned.(13)

Cesky Tesin

Construction of a dam, one kilometer long and over 100 meters wide, has begun in Cesky Tesin, on the Hrabinka River. Most of the work should be completed in 1953, and operations are expected to begin in 1954.

The Mistni Narodni Vybor (Local National Committee) in Tesin plans to make the surrounding regions into a park and recreational center.

The inhabitants of Tesin have already devoted over 3,000 brigade hours to this construction project.(14)

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Zermanice Dam

A new dam is being built on the Lucina River not far from Zermanice, in Mistin Kraj. Preparatory work was begun in 1950 and by 1951 the highway system was finished. In 1952 the stone quarry was opened and work was begun on digging the dam foundation. The pouring of concrete was begun at the end of April 1953. Despite a constant shortage of workers, the dam site is now ready.

When the dam is completed, the Lucina River will inundate 6 to 8 kilometers of the river valley. Schenovice (Sec, located near Zermanice, will be inundated by the new lake. The inhabitants of Schenovice will be moved to a new area on the banks of the new lake. The Lucina itself will not be able to supply all Ostrava with water for industry, and therefore the additional water required will be taken from the Morava stream.

Although this is a comparatively small project, all the work is mechanized, including the mixing of concrete (the latter as a result of efforts of the Stavoloco Enterprise of Radotin). Many shortcomings still exist in the work. For instance, the cement mixer is capable of mixing more cement at one time than can be transported efficiently to the construction site, mainly because of the lack of adequate buckets [for transporting the concrete] and work with the present buckets is hazardous.(15)

SOURCES

1. Prague, Zemedelske Noviny, 22 Feb 53
2. Bratislava, L'ud, 22 Aug 53
3. Zemedelske Noviny, 3 Feb 53
4. Prague, Mlada Fronta, 20 May 53
5. Prague, Svobodne Slovo, 29 May 53
6. Ibid., 26 Jun 53
7. Prague, Rude Pravo, 11 Jul 53
8. Zemedelske Noviny, 3 Feb 53
9. Rude Pravo, 22 Aug 53
10. Prague, Lidova Demokracie, 27 Aug 53
11. L'ud, 24 Jan 53
12. Lidova Demokracie, 1 Mar 53
13. Svobodne Slovo, 3 Sep 53
14. Prague, Prace, 23 Aug 53
15. Lidova Demokracie, 1 Jul 53

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