THE REPORT OF ANGHEL SALIGNY IN FAVOUR OF BUILDING OIL PIPELINES, 1899

Gheorghe CALCAN

Petroleum-Gas University of Ploiești, Romania
calcangheorghe@yahoo.com

Abstract: Our work aims to present the first debates on the topic of building pipelines for the transport of Romanian oil products. The debut consisted in the report that Anghel Saligny made in 1899. The pipeline system he proposed should have started in the centre of the oil region, i.e. from Băicoi, followed the trail railway Ploiești, Buzău, Făurei, Fetești, Cernavodă and reached the sea port of Constanța. In 1907, engineer L. C. Erbiceanu joined the enterprise. The law was passed by the parliament in 1912. Works began the following year but they were interrupted because of the outburst of the First World War. After a partial use during the war, oil pipelines were completed in 1919.

Keywords: oil pipelines, Anghel Saligny, Romania

1. Introduction

The problem of building pipelines for the transport of oil products has been posed ever since the late nineteenth century. The continuous growth of production [1] and external demands made the pipelines a necessity. The existing transport system was cumbersome and expensive [2]. At the end of the nineteenth century there were submitted at the Ministry of Public Works six offers to build a system for transporting oil to the sea [3]. Faced with this situation, the ministry in office considered necessary to have the expertise of specialists and, therefore, solicited the support of Anghel Saligny, the General Manager of the Romanian Railways.

2. The Report of Anghel Saligny

On 16th September 1899, Anghel Saligny submitted to the ministry the required document, entitled *Report on the oil transport through pipelines*. The report was conducted with the utmost

professionalism and seriousness, the author specifying from the very beginning the fact that the document was the “result of personal studies and insights”. Saligny expressed his belief that over time acquired axiomatic value, namely the need to build oil pipelines as an indispensable element of the modern Romanian industry and society. In economic terms, building a transport system for oil products via pipelines could have reduced the cost to nearly a third of the transport cost by rail, then in use. Then, the author detailed and demonstrated his allegations.

Anghel Saligny had no hesitation in identifying Constanța as the terminus point of the planned pipelines. “Unquestionably, the pipelines must conduct oil to our sea port, Constanta, from where it will be exported to all directions and in any season in ship tanks or boxes” [3].

The author also considered the opportunity of simultaneously building a port on the Danube. By means of the two

ports, the Romanian oil could penetrate more easily the markets from the neighbouring countries or from Central Europe.

The starting point of the pipeline should have been Băicoi, as the “center of the richest petroleum region today [...], and the pipeline would have been supplied with oil from different branches coming here from the exploitation points of the region and would have then turned to Buzău through Ploiești, so that to also collect the production from this region, further reaching Cerna-vodă via Făurei and Fetești.” [3]. At this point, there was to be built the port destined for river export. “There it would be a facility for export on the Danube and then would continue to Constanța” [3].

This was the ideal solution. (One should mention that in 1907, when engineer L. C. Erbiceanu resumed the issue of building a pipeline to the sea, he suggested that Câmpina should be the starting point of the pipeline [4]). Provided the state could not afford such a large investment, it was also considered a less expensive solution, that of “enabling access of the oil only to the Danube”. In this situation, the port of destination would have been Giurgiu.

The distance between Băicoi and Giurgiu was 156 km, whereas the distance between Băicoi and Cerna Vodă was 250 km, and up to Constanța, there are 310 km. Therefore, the inconvenience of the Băicoi-Giurgiu river variant was that to the pipeline there would have been added a “69 Km long Ploiești – Buzău branch”.

With respect to the route that the pipeline was to follow, Saligny recommended that it should coincide with the route of the roads or railways, mainly for economic reasons, thus the pipeline “using the existing embankments and artwork used for crossing uneven land and rivers” [3].

Another problem tackled in the report regarded the nature of the content to be transported by pipelines: crude or refined

oil. Saligny took into account both options. In case of transporting crude oil, it would have been compulsory to transfer refineries into the ports. As an advantage of this version, one could mention the presence at the destination point of the residues that would have resulted from processing crude oil. These oil by-products or “remains of oil” were at that time increasingly demanded to be exported and more intensively used by the marine, due to their “availability”. However, they could not have been transported through pipelines. Their existence in the port would have considerably reduced the cost of transport. On the other hand, the alternative of relocating refineries might have triggered the not at all negligible perspective of protests from the owners of the existing installations.

Therefore, the most likely variant was that the refineries would not be relocated and they would remain “near production sites”. In this situation, pipelines were to transport processed oil.

The author considered it would be difficult to combine in the pipeline “the oil extracted from different wells, which implied a high variety of oil composition”. Therefore, he came to a clear conclusion: “I strongly believe that through pipelines there should be transported refined oil, and, as crude petroleum could not be exported, this would lead to the development of the refineries” [3].

In 1907, L. C. Erbiceanu suggested that the future pipeline to be built “from the beginning in triplicate”, i.e. a pipeline for transporting white, light products, another for white, heavier products and the third – destined to black products” [4].

As a General Manager of the Romanian Railways, Anghel Saligny did not neglect the “pro domo” perspective of his analysis. He frankly stated that, by constructing an oil pipeline from Băicoi to Constanța, Romanian railways will suffer. In order to offset this loss, the oil industry was to provide compensations. He even

advanced a figure in this respect (150,000 lei). The annual compensation could increase if the profitability of the pipeline increased. The analyst honestly noted in his analysis that some of the expected loss for the railways would be recovered from the anticipated increase of the oil production. Thus, by processing larger amounts of oil, there would be generated bigger quantities of waste products ("oil remains"), which were to be transported via railways.

On the other hand, not building the oil pipeline would have led to an increased financial pressure on the transport system. The upward trend of oil production required a considerable increase of the tank cars fleet.

According to the estimations of that time, the difference between the cost of building Băicoi - Constanța oil pipeline and that of purchasing the necessary fleet of tank cars at future requests (480 cars) was not very high (6,000,000 lei compared to 5,000,000). According to Anghel Saligny's survey, "it is so obvious that maintaining the railway transport constitutes an obstruction to the oil industry" [3].

The survey on the railway oil transport highlighted that half of the traffic was virtually busy with the movement of empty wagons. A tank car travelled four days to traverse the route from well sites to the sea, roundtrip. As a result of the increasing oil production, the situation might have become even more difficult. Therefore, the solution of building a pipeline became even more necessary "there will come a time when a single rail line will be insufficient for transporting oil, especially during heavy cereals traffic". Resolving this situation would lead to the already known conclusion. Financial calculation was logical: "there should be either built a second railway line or installed a second pipeline and, of course, this latter solution will be preferred, as the construction of the pipeline was cheaper and had the advantage of reducing transport cost" [3].

Continuing his argumentation in favour of the oil pipeline, Saligny brought into question the example of Russia where there had been started the operation of building a pipeline in the Caucasus, from Baku to Batumi. Russian authorities had been convinced of the usefulness of such a project although the distance was considerable (900 km) [4], almost three times longer than the length of the pipeline projected in Romania.

A major issue tackled by Anghel Saligny was that of the property on the pipeline. Saligny appreciated that, at least in early stages, it was advisable that the state would not get involved: "I find it crucial for the government not to take on this work" [3].

However, the arguments advanced by the author did not seem very solid, given the fact that there already existed private offers and equity of those interested in pipeline construction. Saligny also added that the pipeline would be profitable only if used to maximum capacity, and for such an operation, private initiative had greater chance of success. In case of detecting any petroleum outlets, a private investor would also be preferred to the state, as "when looking for outlets and developing trade relations, a private investor has more freedom and succeeds faster and safer than the state" [3].

By suggesting private investment, Saligny insisted on a set of conditions to be imposed on the concessionaire. The first, the most visible and, perhaps the most likely result of private investment was the establishment of a monopoly over the pipeline. "One objection that can be made to the concession of this work is the monopoly that might be created in favour of a capitalist or group of capitalists that will exploit the pipeline, which will inevitably diminish the current independence of small producers thus forced to become tributaries of these centralizing companies of oil production and trade" [3].

Eight years later, in 1907, when engineer L. C. Erbiceanu resumed the issue

of building oil pipelines, he totally rejected the alternative of involving private equity and bluntly motivated his point of view: “One should study the issue of who has the incumbent duty of organizing and conducting this transport. We will clearly answer that this is the responsibility of the state, since everybody knows the disastrous outcome from America, where the monopoly of Standard Oil Trust controlled oil pipelines” [4].

Though, at the end of the nineteenth century, Anghel Saligny did not seem to find such aspects as being catastrophic and, at least in theory, he considered them to be normal. Oil industry required high investments, which could come only from associations or the so-called “oil barons”.

However, he did not welcome the idea of monopoly on pipeline transport. A solution could be the care that the state had to take when “choosing the concessionaire”. They were not to forget that they benefited from state investments, i.e. in embankments and other constructions, and they had to be aware that they were getting engaged in a work whose profit was not entirely theirs.

In conclusion, “the concessionaire must provide sufficient guarantees in terms of equity and commercial influence, in order to make sure that it will seek for profit, not by speculating on transport cost but by oil production and sale activity” [3].

One could not overlook the problem of transport cost. This was to be the same for everybody, thus “stopping the establishment of special tariffs and favours”. There were to be set maximum prices, which necessarily had to be lower than that of the transport by rail.

Saligny presented further conditions that were to be imposed to the concessionaire. The rapporteur was firm, when demanding, “under the penalty of cancelling the concession” the obligation to fix a deadline for completing the work and for starting the exploitation itself.

One was not to neglect the technical aspects of the construction, such as the pipe

diameter or the capacity of reservoirs. The author also tackled the principle of ownership, when claiming that, after a period of exploitation by the concessionaire, “all instalations will become the property of the state.” A suggested period was “for example 25 years.” Saligny insisted on this issue, introducing the idea that, “under certain circumstances in the future”, there were the possibility that after an even shorter time, “for example 10 years” the state could buy back private investment, and thus become the owner sooner [3].

One can notice that, in the opinion of Anghel Saligny, the ultimate owner of the pipeline was to be the state. The author tried to protect the state, at least in the stage of initial investment, but he acknowledged its rights in terms of emption and its impartiality when coordinating private interests. The state was, therefore, perceived as the guarantor of the common good.

One last aspect tackled by Saligny was the placement of the pipeline: on the surface or underground. His option was clearly in favour of burying oil pipelines, even if in practice pipelines were also installed on the surface. The arguments he brought for his proposal were: the possibility of train derailment, of explosions of the pipeline due to high pressure used to pump oil or of fires that could affect trains movement.

He rationally and convincingly stated that: “Such a catastrophe, however unlikely, is enough to take the decision of burying the pipeline”. When crossing rivers, the pipeline could be bound to the outside part of the metal deck” [3].

The conclusion of Anghel Saligny was firm and clear when urging for practical actions [5]. “Subjecting it to your attention, Sir Minister, I consider necessary for a law project to authorize the granting of a concession or even to grant, to an already chosen concessionaire, the building and exploiting of the pipeline under the above recommended conditions” [3].

3. Building the National Pipeline System

The actual construction of the oil pipelines was delayed. In 1912, there was passed a bill that provided the construction of three pipelines (one of 10 inches and two of 5 inches) on direction Băicoi, Ploiești, Buzău, Făurei, Fetești, Cernavodă.

The actual construction began in 1913 and it started simultaneously in several points, being used pipes made in the United States. The outburst of the First World War slowed down and eventually stopped the work in 1916. When Germany occupied Romania, they ordered for the two thinner pipelines to be moved towards Giurgiu, so that to satisfy their oil needs.

After the First World War, there were made considerable efforts to complete and operate oil pipelines. In March 1919, there started to operate pipelines to Giurgiu, and in September it was put into operation the pipeline to the Black Sea.

In 1925, it was built a new pipeline intended to supply Bucharest with oil. The total length of the oil pipeline system was 760 km and transport capacity was 300 wagons per day. Despite the fact that between the two World Wars, there were insistent debates on building another one or two pipelines, this proposal was not put into practice [6, 7].

4. Conclusions

In the history of building the national pipeline transport system for petroleum products, the triggering event

was represented by the report that Anghel Saligny elaborated in 1899. The document was objective, thorough, profound, honest and, most of all, professional. Although the author held the position of General Manager of the Romanian Railways, he did not hesitate to recommend the construction of the oil pipelines, even if, by doing this, the revenues of the railway company were to be jeopardized. He sought for the national interest to which he was submitted and proved a patriotic attitude, based on a solid cultural and professional formation.

Obviously, some of his statements were censored by the author himself or by his contemporaries. One could mention in this respect the fact that Anghel Saligny did not see the state as the owner of the national pipelines system from the very beginning of the exploitation activity. Intending to enable the state to orient its resources into various directions, he thought it would be safer if the state became the rightful owner of the pipelines later in time. Given the production level and technical, as well as financial capabilities of Romania in 1899, Saligny considered it was possible to build a single oil pipeline.

In 1907, engineer L. C. Erbiceanu was firmly in favour of the state ownership over the oil pipeline and proposed the construction of a three-pipeline system, project that was actually later materialized.

References

- [1] Buzatu, Gh., *A History of Romanian Oil, I*, Bucharest, Mica Valahie Publishing House, 2004, p. 43.
- [2] Ivănuș, Gh., Ștefănescu, I., Stirimin, Șt. N., Mocuța, Șt. Tr., Coloja, M. P., *Istoria petrolului în România*, Bucharest, AGIR Publishing House, 2004, pp. 168-179.
- [3] „Construirea conductelor petrolifere în România” in *Moniteur du pétrole roumain*, No. 1, 1940, pp. 49-51.
- [4] Erbiceanu, L. C., „Conducta de petrol Câmpina – Constanța” in *Moniteur du pétrole roumain*, No. 6, 1907, pp. 161–166.
- [5] Zidaru, Constantin, Stanciu, Lucian, Dumitrescu, Nicolae, *Din istoria transportului țigieiului prin conducte în România*, Vol. 1, Bucharest, Silex Publishing House, 1998, p. 87.

- [6] Calcan, Gh., *Industria petrolieră din România în perioada interbelică. Confruntări și opțiuni în cercurile de specialiști*, Bucharest, Tehnică Publishing House, 1997, pp. 161-165.
- [7] Calcan, Gheorghe, “About the Oil Pipelines and Interwar Romanian Oil Exports through the Port of Constanta” in *Black Sea: History, Diplomacy, Policies and Strategies*, Bagheria, Mineo Giovanni Editore, 2012, pp. 73-78.