

**No. 11337**

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**FRANCE  
and  
SPAIN**

**Agreement relating to Lake Lanoux (with an arrangement concerning the lake's development). Signed at Madrid on 12 July 1958**

**Exchange of letters constituting an agreement amending the above-mentioned arrangement. Paris, 27 January 1970**

*Authentic texts : French and Spanish.*

*Registered by France on 21 September 1971.*

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**FRANCE  
et  
ESPAGNE**

**Accord relatif au lac Lanoux (avec règlement concernant l'aménagement de ce dernier). Signé à Madrid le 12 juillet 1958**

**Échange de lettres constituant un accord modifiant le règlement susmentionné. Paris, 27 janvier 1970**

*Textes authentiques : français et espagnol.*

*Enregistrés par la France le 21 septembre 1971.*

[TRANSLATION — TRADUCTION]

AGREEMENT<sup>1</sup> BETWEEN THE GOVERNMENT OF THE  
FRENCH REPUBLIC AND THE SPANISH GOVERN-  
MENT RELATING TO LAKE LANOUX

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*AGREEMENT RELATING TO LAKE LANOUX*

The Government of the French Republic and the Spanish Government,

Considering the Lake Lanoux water use project, of which the Governor of the Province of Gerona was notified by the Prefect of the Pyrénées-Orientales on 21 January 1954;

The proposals submitted on 12 December 1955 by the French delegation to the *Ad Hoc* Joint Commission established to prepare a project for the development of the waters of Lake Lanoux;

The award rendered on 16 November 1957 by the Court of Arbitration charged with ruling upon the interpretation of the Treaty of Bayonne of 26 May 1866 and of the Additional Act of the same date concerning the use of the waters of Lake Lanoux,

Have agreed on the following provisions:

*Article 1*

Electricité de France shall effect return delivery, through the Ariège-Carol gallery, of a quantity of water equal to the natural flow diverted from the Carol basin, the minimum annual amount to be returned being fixed at 20 million cubic metres.

Electricité de France shall install in the reservoir the necessary outlet works to provide for outflow into the Carol in the event of an incident of any kind preventing return delivery via the Ariège.

Electricité de France shall install all requisite measuring devices to ensure that the full return flow is steadily maintained.

The technical procedures for implementing this article shall be laid down in the Arrangement annexed to this Agreement.

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<sup>1</sup> Came into force on 12 July 1958 by signature.

*Article 2*

A Joint Commission shall supervise the implementation of the measures referred to in the preceding article. The Commission shall be composed of six members, three appointed by the Spanish Government and three by the French Government.

The Commission shall be presided over by the Chairman of the Spanish delegation and the Chairman of the French delegation in turn, for periods of one year each. During the first year, chairmanship of the Commission shall be held by the Spanish delegation.

*Article 3*

The Commission shall meet at the request of either delegation, and upon being convened by its Chairman, as often as may be necessary and in any event not less than once each year, in mid-July. Its reports and the records of its meetings shall be transmitted to the two Governments.

*Article 4*

In time of construction, the Commission shall supervise the execution of work relating to the installations and devices referred to in article 1.

In time of operation, the Commission shall ensure that the return flow is steadily maintained.

The Commission shall be provided with the means and facilities necessary for the performance of its duties.

*Article 5*

The Spanish Government may notify the French Government of the name of an official serving at its Consulate in Toulouse who may be a representative of the Ebro Hydrographic Confederation and who shall have free access at all times to any of the installations of the concession referred to in article 1.

This official shall enjoy the immunities and privileges provided for in the Franco-Spanish Consular Convention of 7 January 1862.

Reports of the said official shall be transmitted to the Commission.

*Article 6*

The Commission shall inform the two Governments of any contraventions of the provisions of article 1 which may come to its attention.

The French Government shall take all appropriate steps to ensure the cessation of such contraventions and, where necessary, to compensate for the damage caused.

### Article 7

Any dispute which may arise between the two Governments regarding the application of the foregoing provisions shall be settled in accordance with the procedure laid down in the Arbitration Convention of 10 July 1929.<sup>1</sup>

Madrid, 12 July 1958

Ambassador of France:

LA TOURNELLE

Minister for Foreign Affairs:

FERNANDO CASTIELLA

## DEVELOPMENT OF LAKE LANOUX

### ARRANGEMENT REFERRED TO IN ARTICLE 1 OF THE AGREEMENT

Water diverted from the Lanoux natural catchment basin to the Hospitalet falls is drawn off from the flow of the Carol. The flow thus diverted shall be returned to the Carol through a gallery approximately five kilometres in length, the "Ariège-Carol gallery"; water from the Ariège shall be directed through an intake situated at elevation 1575 metres into the said gallery, which shall be of sufficient capacity to ensure a flow of five cubic metres per second. Such water shall be returned to the Carol before the border, downstream of the village of Porté.

#### I. Principles governing flow determination

The volume of water diverted from the Carol at Lake Lanoux and the volume returned through the Ariège-Carol gallery shall be metered continuously by means of a series of measuring devices. Such devices shall be installed in pairs, with the aim of enhancing the accuracy of the measurements and in order to guard against any failure of one of the instruments (see Plan Lt 8-26 annexed hereto).<sup>2</sup>

#### 1. Diverted flow

This comprises water from the Lanoux catchment basin and from the streams of Fourats, la Porteille and Courtal-Roussou, which are tributaries of the Font-Vive.

If:

A = gravity flow from the Carol,

P = pumped flow from tributaries of the Ariège, and

T = turbine flow,

these being the total quantities for any given measurement period, and

Vr = the corresponding variation in reservoir storage,

<sup>1</sup> League of Nations, *Treaty Series*, vol. CXLVIII, p. 369.

<sup>2</sup> The Government of France indicated, in agreement with the Government of Spain, that this plan was not to be considered as an integral part of the Agreement.

Then:

$$V_r = A + P - T,$$

and hence  $A = V_r - P + T$ .

For the purpose of determining quantities P and T, two Venturi meters — one for each direction of flow — shall be installed in the Lanoux penstock, on either side of the head gates. The measuring instruments of the said meters shall be activated or de-activated, according to the direction of the current, by a special automatic detector. They shall be equipped with a totalizer for turbine flow or pumped flow.

$V_r$  shall be deduced from the curve showing the storage capacity in terms of the stage of the Lake, the stage being measured by a high-precision pressure gauge.

During the period 15 June–15 September, flow shall be increased by 70,000 cubic metres per month in order to take account of evaporation from the enlarged surface area of the Lake.

## 2. *Return delivery*

Return delivery shall normally be effected through the Ariège-Carol gallery; the intake has been so designed as to enable flow to be regulated to within five cubic metres per second. If necessary, the requisite return flow may be supplied directly through the Font-Vive gallery, whatever the water level in the reservoir, by means of a hollow-jet valve situated near the Lanoux distribution room.

A Venturi flume shall be installed at the downstream mouth of each of the said galleries. Flow shall be measured and totalized by a precision instrument.

A measuring device shall also be installed at the upstream mouth of the Ariège-Carol gallery for the purpose of flow regulation.

## II. *Principles of operation*

The period between 1 September of one year and 31 August of the following year inclusive shall be deemed to constitute the water year.

The various kinds of flow shall normally be computed on a weekly basis.

A quantity of water equivalent to the yield diverted over a one-week period shall normally be delivered during the following week at a steady rate of flow with a permissible deviation of plus or minus 10 per cent.

Total surpluses or shortfalls in weekly return deliveries, excluding surplus quantities over and above the permissible deviation of 10 per cent, must be compensated every four weeks, such water to be restored during the fifth week at a steady rate of flow and in accordance with the accumulated readings taken between the beginning and end of the said four-week period.

The quantity of water which may still be required to attain delivery of the guaranteed minimum annual flow of 20 million cubic metres shall be computed on 15 July of each year; any shortfall of water shall be delivered at a steady rate of flow during the second half of July and the month of August, the adjustments necessary to take account of the natural flow being made every fortnight.

The Supervisory Commission provided for in article 2 of the Agreement relating to Lake Lanoux shall meet in mid-July each year in order to establish specific procedures to ensure the minimum annual guaranteed return flow, taking into account the probable summer yield.

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EXCHANGE OF LETTERS CONSTITUTING AN AGREEMENT<sup>1</sup> BETWEEN FRANCE AND SPAIN AMENDING THE ARRANGEMENT OF 12 JULY 1958<sup>2</sup> RELATING TO LAKE LANOUX

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I

MINISTRY OF FOREIGN AFFAIRS

Paris, 27 January 1970

Sir,

At its meeting of 28 September 1965, the Joint Franco-Spanish Supervisory Commission for the development of Lake Lanoux proposed that the text of the Arrangement referred to in article 1 of the Franco-Spanish Agreement of 12 July 1958<sup>2</sup> relating to Lake Lanoux, and annexed to that Agreement, should be amended.

The Commission proposes the following new text for the Arrangement:

Water diverted from the Lanoux natural catchment basin to the Hospitalet falls is drawn off from the flow of the Carol. The flow thus diverted shall be returned to the Carol through a gallery approximately five kilometres in length, the "Ariège-Carol gallery"; water from the Ariège shall be directed through an intake situated at elevation 1575 metres into the said gallery, which shall be of sufficient capacity to ensure a flow of five cubic metres per second. Such water shall be returned to the Carol before the border, downstream of the village of Porté.

I. *Principles governing flow determination*

The volume of water diverted from the Carol at Lake Lanoux and the volume returned through the Ariège-Carol gallery shall be metered continuously by means of a series of measuring devices. Such devices shall be installed in pairs, with the aim of enhancing the accuracy of the measurements and in order to guard against any failure of one of the instruments.

1. *Diverted flow*

This comprises water from the Lanoux catchment basin and from the streams of Fourats, la Porteille and Courtal-Rousso, which are tributaries of the Font-Vive.

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<sup>1</sup> Came into force on 27 January 1970 by the exchange of the said letters.

<sup>2</sup> See p. 235 of this volume.

If:

A = gravity flow from the Carol,  
 P = pumped flow from tributaries of the Ariège, and  
 T = turbine flow,

these being the total quantities for any given measurement period, and

$V_r$  = the corresponding variation in reservoir storage,

It follows that  $V_r = A + P - T$  and  $A = V_r - P + T$ .

For the purpose of determining quantities P and T, two Venturi meters — one for each direction of stream flow — shall be installed in the Lanoux penstock, on either side of the head gates. The measuring instruments of the said meters shall be activated or de-activated, according to the direction of the current, by a special automatic detector. They shall be equipped with a totalizer for turbine flow or pumped flow.

$V_r$  shall be deduced from the curve showing the storage capacity in terms of the stage of the Lake, the stage being measured by a high-precision pressure gauge.

During the period 15 June–15 September, flow shall be increased by 70,000 cubic metres per month in order to take account of evaporation from the enlarged surface area of the Lake.

## 2. *Return delivery*

Return delivery shall normally be effected through the Ariège-Carol gallery; the intake has been so designed as to enable flow to be regulated to within five cubic metres per second. If necessary, the requisite return flow may be supplied directly through the Font-Vive gallery, whatever the water level in the reservoir, by means of a hollow-jet valve situated near the Lanoux distribution room.

A Venturi flume shall be installed at the downstream mouth of each of the said galleries. Flow shall be measured and totalized by a precision instrument.

A measuring device shall also be installed at the upstream mouth of the Ariège-Carol gallery for the purpose of flow regulation.

## II. *Principles of operation*

It is hereby agreed that diverted flow and return flow shall be equalized each year within the annual accounting periods stipulated below:

- In the case of diverted flow, the water year shall be established as the following period: 1 September of a given year to 31 August of the following year.
- In the case of return flow, the water year shall be the period 1 May–30 April following the start of the water year for diverted flow.

Where less than 20 million cubic metres of water are diverted from Lake Lanoux in any given water year, the return flow to be effected during the corresponding water year shall be not less than 20 million cubic metres.



*Technical procedures for implementation*

Return delivery shall be effected through the Ariège-Carol gallery from the beginning of May onwards. It shall be continued until the diverted flow is fully compensated. The rate of flow through the gallery may be reduced, except in July and August, in order to limit the extent of any temporary surplus of return flow over diverted flow.

Where, in exceptional circumstances, the requisite compensation has not been made by 30 September:

- (a) In the case of a shortfall, return delivery shall be maintained during the months of October, November, March and April, with a break during the months of December, January and February. However, where the minimum quantity of 20 million cubic metres has still not been restored, return delivery shall be maintained without interruption until that figure is reached.
- (b) In the case of a surplus, compensation shall be made during the following year, the excess quantities delivered during the previous year being deducted from the return flow due to be effected during the current year.

In such a case, return delivery shall not commence until such time as the flow which would normally have been drawn off from the Ariège during the intervening period equals the amount of the surplus.

In these circumstances as well, a minimum return flow of 20 million cubic metres shall be assured.

*Unforeseen difficulties*

Acting at the request of either delegation, the Joint Supervisory Commission shall settle any difficulties of implementation which may arise, taking into account the above principles and methods, on which return delivery arrangements must be based. To this end, the situation shall be reviewed at one of the annual meetings.

The French Government for its part approves the Commission's proposal.

If this proposal also meets with the approval of the Spanish Government, I have the honour to suggest that this letter and your reply thereto should constitute a formal agreement between our two Governments on the new text for the Arrangement.

I further suggest that this text should enter into force on the date of the exchange of this letter and your reply thereto.

Accept, Sir, etc.

AUGUSTIN JORDAN  
Minister Plenipotentiary  
Department of Economic and Financial Affairs  
General Affairs

His Excellency Mr. Cortina y Mauri  
Ambassador of Spain  
Paris

## II

EMBASSY OF SPAIN IN PARIS

Paris, 27 January 1970

Sir,

I have the honour to acknowledge receipt of your letter of today's date, reading as follows:

[*See letter I*]

I have the honour to inform you that the provisions of the above letter have the agreement of the Spanish Government.

Accept, Sir, etc.

[*Signed*]

PEDRO CORTINA

Mr. Augustin Jordan  
Minister Plenipotentiary  
Ministry of Foreign Affairs  
Paris

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