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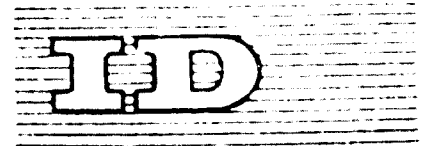
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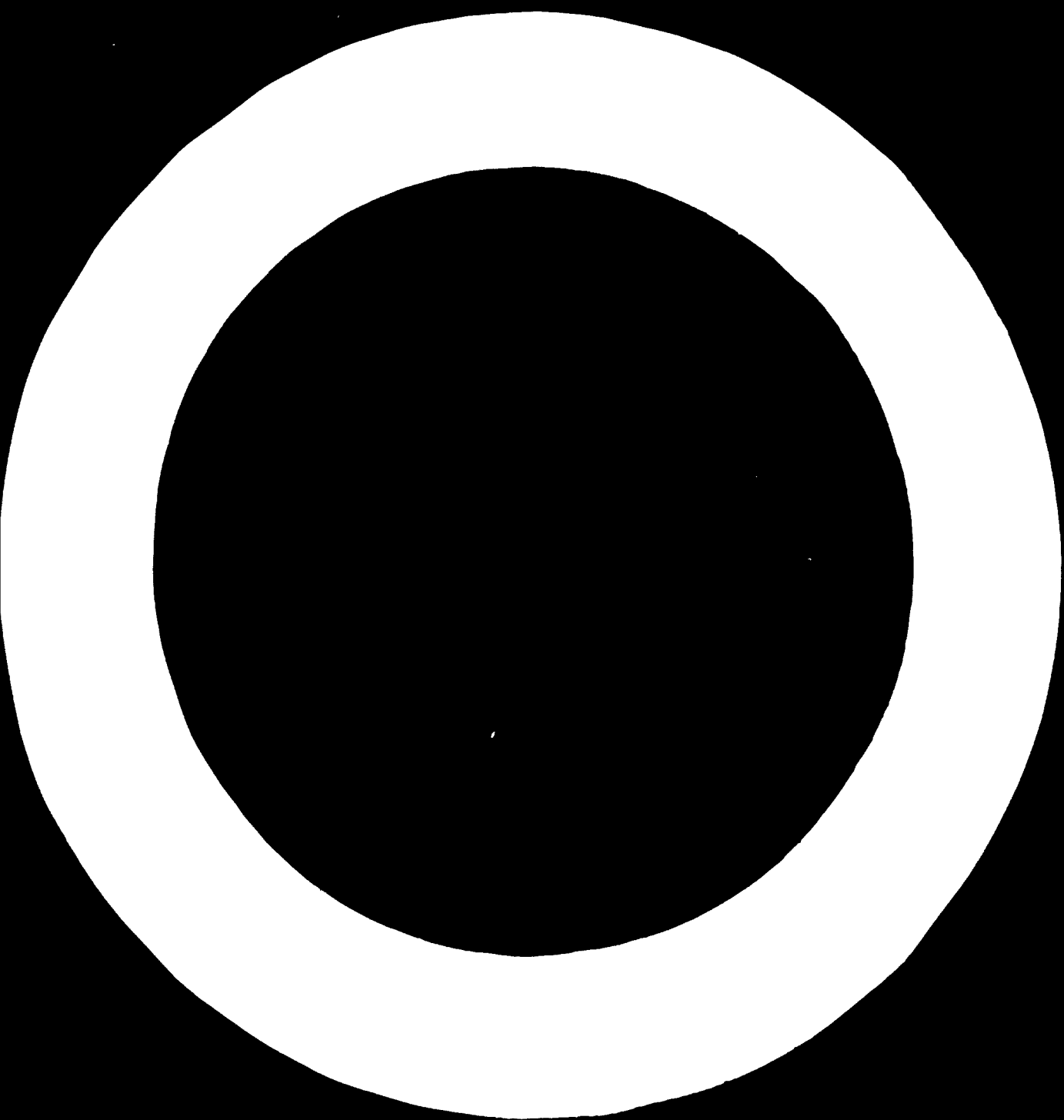
Haku, USSR, ~~20~~³¹ - 31 October 1969

DEVELOPMENT OF THE PETROCHEMICAL INDUSTRY
IN VENEZUELA^{1/}

by

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The development of the petrochemical industry in Venezuela is the sole responsibility of the "Instituto Venezolano de Hidrocarburos" (IVH), and hence it must conform to existing and to future policies of national industrial growth and promotion of international cooperation of national enterprises with the aim of attaining the fullest and most efficient utilization of national resources placed under its administration. This integration of IVH into the progressive activities of the nation calls for a constant and diversified effort of studying opportunities, alternatives and markets.

So far the "Instituto Venezolano de Petroquímica" (IVP) has functioned as a separate sector of the source of raw materials which is the domestic petroleum industry. However, the feasibility of integrating petrochemicals with the petroleum and gas sector is being considered as a basis for a new and more rational policy in the future. This new policy, if adopted, would only conform to existing patterns in several Latin American countries such as Mexico, Argentina and Brazil.

Since inception studies have led to the establishment in Venezuela of two distinct areas of petrochemical development: one area located in the central region of the country, and a second one located in the western region. A number of projects were carried out exclusively by IVP in the first area, as well as new projects which constitute the substitute for those units which are to be closed down soon on account of its obsolescence. However, some others will be put up in association with national and international investment there.

For the second ^{complex} area, where an olefins plant is to be created, the present policy is to reserve the basic units or plants for state control, whereas the down-stream units for products of second generation are to be built in association with domestic and international investors. This policy, however, is also being revised since the escalation of the plants is of such magnitude, on the one hand, and the possibilities of accelerating the construction of more than one complex and, therefore, for a more accelerated growth of the gross national product on the other hand, is leading to the thesis that "integration" from the oil and gas fields to the production of petrochemicals with participation in the distribution in the world markets seems to be a reasonable answer to the problem. There are other economic reasons which support such a scheme. One should consider that control of what are called basic plants such as olefins plants does

not give or grant control over an extended chain of petrochemical products. Moreover, when that happens, it is not easy to get away from the necessity of keeping also under state ownership plants that are built as utilities, and generally, these off-sites are very expensive and place a terrific burden upon the financial capacity of a developing country; thus limiting its possibilities for quicker expansion.

Venezuelian projects are classified according to their nature and location as follows:

1. Basic enterprises
 - (a) Central region
 - (b) Western region
2. Mixed enterprises in Venezuela
 - (a) Central region
 - (b) Western region
3. Expatriate mixed enterprises
4. Projects under study

1. Basic enterprises

Basic enterprises are those in which IVP has exclusive participation, and they are classified according to location as follows:

- (a) Basic enterprises in the Central region
- (b) Basic enterprises in the Western region

(a) Basic enterprise in the Central region

The basic enterprises of the Central region is located at Moron, Carabobo State, and it consists of

- (i) existing plants
- (ii) expansion plants

(i) Existing plants

The existing plants of the basic Moron complex compose three groups:

- a; fertilizers
- b. civil explosives
- c. chlorine - soda plants.

The table below shows the existing operating plants which make up these three groups:

a. Fertilizer plants

<u>Product</u>	<u>Nominal capacity</u> (metric tons per year)
ammonia	33,000
sulphuric acid	200,000
phosphoric acid (50% P_2O_5)	33,000
nitric acid (53%)	61,000
nitric acid (98%)	9,000
agricultural ammonium nitrate	49,000
technical ammonium nitrate	3,000
urea	16,500
ammonium sulphate	79,000
normal superphosphate	99,000
triple superphosphate	39,600
N-P-K mixtures	79,200

b. Civil explosive plants

<u>Product</u>	
di- and tri-nitrotoluene	3,000
dynamites and ammonites	11,500
blasting agents	12,000
nitroglycerin	1,000
nitrocellulose	500

c. Chlorine - soda plants

<u>Product</u>	
chlorine	10,000
soda	11,200
hydrochloric acid	6,900
sodium hypochlorite	5,300

(ii) Expansion plants

The table below indicates the group of plants which constitute the Merón Fertilizer Expansion Complex. Nominal capacity as well as operational status for each particular project are included.

<u>Plants</u>	<u>Capacity</u> (metric tons per year)	<u>Status</u>
sulphuric acid (98%)	214,500	operation 1963
ammonia	198,000	construction
phosphoric acid (50% P ₂ O ₅)	165,000	contracting
urea	247,500	design and engineering
diammonium phosphate	146,000	contracting
granulated NPK compounds	115,000	contracting
granulated triple superphosphate	62,000	contracting

(b) Basic enterprise in the western region

This complex is located at El Tablazo, Zulia state, and it consists of the following plants:

<u>Plants</u>	<u>Capacity</u> (metric tons per year)	<u>Status</u>
ethylene	150,000)	engineering and equipment
propylene	90,000)	
chlorine soda	35,000	acquisitions
utilities		bidding engineering

2. Mixed enterprises in Venezuela

Mixed enterprises are those in which two or more associates participate as partners, one of which is IVE. These enterprises are also classified according to their location:

- (a) Mixed enterprises of the Central region
- (b) Mixed enterprises of the western region.

(a) Mixed enterprises of the Central region

The following table describes the different plants involved in this group:

<u>Company</u>	<u>Product</u>	<u>Capacity</u> metric tons per year	<u>Status</u>
Quimica Carabobo	dodecyl benzene	15,000	operation 1969
Oxidor	phthalic anhydride	4,800	operation 1969
	aluminium sulphate	-	planning stage
	hydrofluoric acid	-	planning stage
	tripolyphosphates	-	planning stage

(b) Mixed enterprises of the Western region

The following enterprises of mixed capital (IVI plus one or more partners) are located in the western region of Venezuela, in Zulia state. Some of these companies have already been constituted, and others are either being structured or promoted or under study.

<u>Company</u>	<u>Product</u>	<u>Capacity</u> metric tons per year	<u>Status</u>
Unicar-Petroquimica	polyethylene	50,000	established
Venezolana Industrial del Plastico	vinylchloride polyvinylchloride	50,000) 25,000)	established
Nitrogen	ammonia urea	590,000) 790,000)	established
Nitromara	ammonia	449,000	established
	polyisoprene	60,000	under construction
	petrochemical refinery	-	at planning stage
	polystyrene	10,000	under construction
	cumene	-	at planning stage

3. Expatriate mixed enterprises

There already exist mixed enterprises on the international level, with direct IVP participation. These ventures are located in Colombia and the Dominican Republic, and are described below:

<u>Company</u>	<u>Product</u>	<u>Capacity</u> metric tons per year	<u>Location</u>	<u>Status</u>
Monomeros	caprolactam	16,500)	Colombia	under construction
Colombo-	binary	142,000)		
Venezolanos	fertilizers			
Petroveve	fertilizers/NPK	90,000	Dominican Republic	established

4. Project under study

At present, IVP is conducting different feasibility and possible-location studies in relation to mixed, national and/or international private capital undertakings. The objectives of these studies cover a wide scope, ranging from partnerships to markets, processes and products which may result in the development of one or two more basic complexes following different chains of products. Present projects in the Central and Western region call for investments of the order of magnitude of some 2,400 million Bolivars which is equivalent to some 530 million US Dollars.





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