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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

UNITED STATES OF AMERICA,	:	
Plaintiff,	:	
v.	:	Civil Action No. 2282
PENN-OLIN CHEMICAL COMPANY, OLIN MATHIESON CHEMICAL CORPORATION and PENNSALT CHEMICALS CORPORATION,	:	
Defendants.	:	

OPINION FOLLOWING REMAND

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OPINION FOLLOWING REMAND October 12, 1965

11/12/25

Alexander Greenfeld, District of Delaware, Wilmington, Delaware; Daniel J. Freed, Burton R. Thorman, and Joseph M. Widmar, Justice Department, Washington, D. C., attorneys for United States of America,

William S. Potter and David F. Anderson, of Berl, Potter & Anderson, Wilmington, Delaware, for all defendants; N. Francis DeLone, John T. Subak, and Jere A. Young, Dechert, Price & Rhoads, Philadelphia, Pennsylvania, of counsel for Pennsalt Chemicals Corporation; Albert R. Connelly, John W. Barnum, Eugene F. Souther and Daniel I. Davidson, of Cravath, Swaine & Moore, New York, New York, of counsel for Olin Mathieson Chemical Corporation.

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STEEL, J.

This is a civil action brought by the Government in which the defendants, Penn-Olin Chemical Company (Penn-Olin), Olin Mathieson Chemical Corporation (Olin), and Pennsalt Chemicals Corporation (Pennsalt), are charged with violating Section 7 of the Clayton Act, 15 U.S.C. § 18 and Section 1 of the Sherman Act, 15 U.S.C. § 1. The action is directed against a joint venture between Olin and Pennsalt which resulted in the formation of Penn-Olin to manufacture and sell sodium chlorate (hereinafter sometimes referred to as "chlorate") in the Southeastern part of the United States.

Following a prior trial, this Court found that (1) it was impossible to conclude, as a matter of reasonable probability, that both Pennsalt and Olin would have built chlorate plants in the Southeast if there had been no joint venture, (2) it was reasonable to suppose that Penn-Olin would be a more effective competitor than either Pennsalt or Olin would have been if one of them had built a chlorate plant in the Southeast, and (3) even though it were assumed that either Pennsalt or Olin would have entered the market absent the joint venture, the Government failed to sustain its burden of proving that the effect of the joint venture might be substantially to lessen competition, or tend to create a monopoly. It therefore

dismissed the action. United States v. Penn-Olin Chemical Co., 217 F. Supp. 110 (D. Del. 1963).

Upon direct appeal, 32 Stat. 823, 15 U.S.C. § 29, the Supreme Court held that while no violation of the Sherman Act had been proved, this Court erred in dismissing the Clayton Act charge. It therefore vacated the judgment and remanded the case. United States v. Penn-Olin Chemical Co., 378 U. S. 158 (1964). In doing so, it left undisturbed this Court's finding that the Government had failed to establish that as a reasonable probability both Pennsalt and Olin would have built a plant in the Southeast, if Penn-Olin had not been formed. The Court stated, however, that this Court should have made a finding "as to the reasonable probability that either one of the corporations [Olin or Pennsalt] would have entered the market by building a plant, while the other would have remained a significant potential competitor." (p.175-76). This was apparently upon the theory that an affirmative finding on this issue would either require the conclusion that the joint venture might have the effect of substantially lessening competition,[1] or at least provide a possible basis, depending upon the evaluation of other evidence, for that conclusion.[2]

1. This is the Government's contention.
2. This is the defendants' contention.

The Supreme Court opinion indicated that the parties might, upon remand, submit additional evidence, 378 U.S. at p. 176, note 6. The defendants have done so but the Government has not. The remand evidence, together with that at the first trial, is the basis of the present decision.

The parties agree that under the opinion of the Supreme Court this Court must decide, in the first instance, a single issue, and if that issue is resolved in favor of the Government, it must determine a second issue. These two issues are:

Issue 1: Whether, if Penn-Olin had not been formed, there would have been a reasonable probability that (a) Olin would have constructed a sodium chlorate plant in the Southeast or (b) Pennsalt would have constructed a sodium chlorate plant in the Southeast?

Issue 2: Whether, if Penn-Olin had not been formed and either Olin or Pennsalt had constructed a sodium chlorate plant in the Southeast, the other, as a reasonable probability, would have maintained such continued interest in the Southeastern sodium chlorate market as to constitute it a significant potential competitor.

The parties likewise agree that a decision adverse to the Government on either of these two issues will require a dismissal of the complaint. The defendants contend that if both issue 1 and 2 should be determined adversely to them then a third issue must be faced, viz:

Issue 3: Whether the organization of Penn-Olin, as a reasonable probability, resulted in substantially less competition than would have existed if either Olin or Pennsalt had constructed a sodium chlorate plant in the Southeast while the other continued to have an interest in constructing such a plant.

The defendants argue that unless the Government can carry this third issue as well as the first two it cannot win. On the other hand, the Government contends that the third issue is beyond the scope of remand, and that evidence directed to it is irrelevant.

Issue 1: Would there have been a reasonable probability, if Penn-Olin had not been formed, that either Olin or Pennsalt would have constructed a sodium chlorate plant in the Southeast?

Each side has found the record to be replete with evidence which it is claimed supports their respective positions on this issue. The burden, of course, is upon the Government to prove the affirmative.

(a) OLIN

In evaluating the evidence to determine what Olin would have done if it had not been a party to the joint venture it is essential to distinguish between the views and actions of those in the Olin organization who were charged

with decision making responsibility, and those whose function it was to make preliminary studies and recommendations. Obviously the former are vastly more significant than those of the latter in predicting hypothetically what Olin would have done but for the joint venture.

At the outset, some understanding of the general nature of Olin's business and its organization is essential.

For operational purposes, Olin is a decentralized corporation and in 1959-60 was composed of seven operating divisions. The nature of the divisional activities is indicated by their designation: Chemicals, Energy, Metals, Packaging, Squibb, Winchester-Western, and International. The operation of the Chemicals Division was sub-divided into agricultural products, phosphate chemicals, and industrial chemicals. Sodium chlorate fell within the latter category.

Although operationally decentralized, for purposes of financing -- particularly new projects -- Olin is highly centralized and all substantial capital expenditures proposed by any division have to be approved at the corporate level before they can be made. At that level, each proposal of each operating division is in competition for available capital

funds, not only with other proposals of the same division, but also with the proposals of all of the other operating divisions.

The procedure for obtaining a capital allocation for a given project is as follows:

Once a year each of the divisions prepares what is called a Whither Report. This states in general terms the program which the division would like to follow for the succeeding five years. The report covers not only capital expenditures but also expenditures for research, personnel and everything else that has to do with the particular program. This is to enable management to make a selection of the particular divisional projects for which it feels money can best be appropriated. Many underlying studies are made within a division before a given project finds its way into a Whither Report. In the case of chlorate these included studies of the actual and potential market, actual and potential competition, possible plant locations, alternative manufacturing techniques, consumer contacts, and profitability, to mention a few.

After a Whither Report is prepared it is submitted to a group called "the staff". This consists of experts on

the corporate level.[3] After the staff studies the report, the staff and members of the division meet and the latter make an oral presentation in support of their money needs. The staff then either recommends that the Whither Report be accepted or rejected, in whole or in part, as a general program of action for the division. If the staff accepts a recommendation of the report, the proposal is then presented to the Capital Appropriation Requirements Committee (hereinafter sometimes referred to as the "CAR"). The CAR, in turn, either approves or disapproves of the recommendation. If the CAR approves it, the project is presented to the president for final signature.[4] But this is not the end. Between 1957 and 1960 the president was only authorized to approve an appropriation up to $25,000.

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[3] This is the way the group was described by Mr. Osborne, the president of Olin. The record contains no further elaboration on the makeup of the staff.

[4] If a project is turned down by the CAR, either the CAR or the division proposing the project has a right of appeal to the president who then makes the final decision. If he turns it down, that is the end of it. If he does not turn it down then, according to Mr. Osborne, "it goes on the successive steps to appropriations."

Anything over that amount required the approval of the Board of Directors before the expenditure could be made.[5]

The interest of Olin in entering the sodium chlorate field antedated the joint venture by a number of years.

Prior to 1954 or 1955 it had made a few "literature studies" of potential outlets for and growth of chlorate. In October 1955 the Research and Development Department ("R & D") of the Industrial Chemicals Division prepared an Electrochemical Survey Report that recommended the construction of a one-cell pilot plant at Niagara Falls as a first step in determining whether a 14,000 ton plant costing $3,000,000 could be justified economically. No pilot plant was ever built because the economic studies presented to management were not sufficiently encouraging to warrant it.

In August 1956 R & D prepared another Electrochemical Survey Report relating to chlorate. Its stated objective was to give an overall picture of the chlorate producers in the United States and to review Olin's knowledge of electrolytic cells.[6] At that time, Olin knew very little about chlorate cells from a practical point of view

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5. Shortly before the trial the authority of the president to authorize expenditures was increased to $50,000.

6. The cell is an apparatus in which sodium chloride is electrochemically converted to chlorate. It is the key to the whole production process, at least from a technological and financial point of view.

since most of its information had come from literature. The Report contained "preliminary" estimates of production costs and the investment involved in building a 40-ton per day (14,000 ton per year) plant at Saltville, Virginia, utilizing either of three types of cells. One of the three, the CGA (Crushed Graphite Annode Cell), was under development in Olin's laboratory. The report disclosed estimated returns of between 4.6% and 9.5% on the investment required.[7] The Report recommended that the laboratory work be continued to evaluate the CGA cell, that design studies be made for a commercial cell based upon the Department of Agriculture cell, that evaluation of all cell designs be continued, and that engineering studies be made on the recovery part of a plant. No specific action was taken on the Report. Obviously, the project which it discussed, technologically and otherwise, was embryonic.

In April 1957 R & D prepared another Electrochemical Survey Report to determine "realistic" production and investment costs for a 40-ton per day (14,000 tons per year) chlorate plant at Olin's existing electrochemical plants at Saltville, Virginia, McIntosh, Alabama, or Lake Charles, Louisiana. These suggested locations were not the result of any decision at the management level but were determined by the people in R & D.

[7] All of Olin's percentage of return figures are after taxes.

The Report stated that the capital investment for such a plant would be between $4,600,000 and $5,000,000 and that the maximum return of 7.4% on investment could be realized at Saltville, Virginia. The report recommended that consideration be given to chemical production of chlorate before making a decision on the method of manufacture.[8] Later, after R & D tested the chemical method in the laboratory and prepared economic reports, it determined to drop consideration of that method because it was not commercially feasible.

The first time that persons at the corporate management level became aware of the interest of the Industrial Chemicals Division in chlorate was when that division's Whither Report dated April 4, 1958 was presented to them. The Report stated that an objective of the Division was the development of products new to Olin provided they were related to existing products, or could be produced by an extension of existing technology, or were destined for a market in which

8. The chemical operation involved electrolyzing sodium chloride and thereby converting it into caustic and chlorine, then reacting caustic and chlorine together to form an intermediate product, sodium hyperchloride, which, on heating, would be chemically converted to some salt, sodium chloride and sodium chlorate. The direct generation of sodium chlorate from salt involves the electrolyzation of salt in a cell to the point where it does not produce free caustic and chlorine but sodium chlorate.

Olin was already active. Listed among the electrochemical process products which the Industrial Chemicals Division should "seriously investigate" were "chlorates and perchlorates." The Report stated:

> a. Chlorates and Perchlorates - We have an unparalleled opportunity to move sodium chlorate into the paper industry as the result of our work on the installation of chlorine dioxide generators. We have a captive consumption for sodium chlorate. The development of solid fuels for missiles is creating demand for perchlorates. The production of perchlorates from chlorate enhances the economic attractiveness of chlorate production. Possible production is being reviewed with Dr. Manford currently and if we do not take action in the near future we will lose the opportunity. [9]

The Report further stated that it did not include "detailed financial data" but that "detailed costs and timetables" for carrying out the objectives would be developed upon an indication of general approval from "Corporate Management." The objective of the division, insofar as sodium chlorate and ammonium perchlorate (hereinafter sometimes referred to as "perchlorate") were concerned, was simply to "seriously investigate" their possibilities. The Report did not recommend the construction of a chlorate plant or other

[9] The "perchlorates" referred to was ammonium perchlorate which is a chemical manufactured from sodium chlorate.

market entry.

Apparently the management gave the Division the investigatory authority which it sought because for the ensuing year R & D carried on numerous studies pertaining to plant location, power costs, manufacturing techniques (including methods used in France by Pechiney and Electrochimie), profitability, and related matters. It also discussed with representatives of Vickers-Krebs, a Canadian concern, the possibility of a joint program looking toward development of a platinized titanium cell for producing chlorate.

To the extent that these activities were deemed to be worthy of the consideration of corporate management, they are reflected in the Whither Report dated April 10, 1959 entitled "Chemicals Division Capital Requirements for Major Expansion Items 1959-1964, Inc." That report recommended to the corporate staff for the first time the construction of a 15,000 ton sodium chlorate plant adjacent to Olin's chlorine-caustic soda plant at McIntosh, Alabama, to be ready for operation in 1961. The Report estimated an 11% return on investment [10].

[10] Mr. Osborne testified that when the economics of the 1959 Whither Report were studied, the 11% return shown in the Report was reduced well under 10%. On cross examination he said he knew of no written studies which disclosed the reduction.

On April 16, 1959 the chlorate aspect of the Whither Report was reviewed by a joint meeting of the staff, headed by Mr. Osborne and members of the Chemical Division, headed by Mr. J. O. Logan, Vice President and Director of Marketing of that division. An agreement was reached in principle that the expansion of the Industrial Chemicals operations was necessary and would be authorized, but that the approval of each segment of the program would be conditioned upon a showing that it was either sufficiently profitable on its own merits, or a necessary protective measure to defend an already profitable market. In the light of this policy, the meeting decided that the program for a chlorate plant at McIntosh was not sufficiently attractive "at this time" to be approved, and that the project should be further examined on three points: (1) technical adequacy, (2) whether it was basically a protective measure, and (3) whether a payout of more than six years was the best that could be obtained.

In May 1959 an Electrochemical Survey Report was prepared by R & D to describe a new chlorate cell utilizing platinized titanium electrodes which Olin had developed and to present the economics of a plant which would utilize those cells at various locations. The report stated that a 14,000 ton plant at Chattanooga, Tennessee, on the river

would net 18.9% on investment. The information concerning the efficiency of the new cell was based upon the operation of a 9 ampere laboratory cell which had been in operation for more than 100 days "with very promising results." The Report recommended that the platinized titanium electrode be tested in a prototype cell in order to better evaluate the method of operation outlined in the report. The feasibility of using this electrode commercially had not been demonstrated. This is confirmed by the fact that throughout a large part of 1959 Olin was negotiating with Vickers-Krebs to work jointly on the development of a prototype cell employing a platinized titanium electrode. Obviously, any forecast of profitability based upon its use was of doubtful validity in May of 1959.

In July 1959, R & D prepared another Electrochemical Survey Report for the purpose of grouping recent sodium chlorate surveys and evaluating them. It recommended that Chattanooga, Tennessee, be given first consideration for the location of a plant and that the platinum coated titanium electrode be tested in several cell designs on a prototype scale in order to better evaluate its operation. The advantage of an operation at Chattanooga was the availability of the relatively cheap T.V.A. power, power costs being one of the most important expense items in the manufacture of chlorate.

Between April when the original 1959 Whither Report was prepared, and October 1959, the Chemicals Division restudied its entire program and determined to shift the location of a large chlorine-caustic facility to ~~Chattanooga~~ Chattanooga from McIntosh as proposed in the original Report.[11.e] The Report was revised accordingly to alert management to this change. When the revision was made, the chlorate facility was shown as an adjunct to the proposed Chattanooga chlorine-caustic plant, since the process for producing chlorate was closely akin to that used in commercially producing chlorine and caustic. The chlorine-caustic plant involved an estimated cost of $11,250,000 as against an estimated cost for the chlorate plant of $3,590,000.

This revision of the 1959 Whither Report disclosed a 13.1% return on investment for the chlorate operation at Chattanooga as compared with 11% originally shown for McIntosh. Nonetheless, the Chemicals Division never formally revised its original 1959 Whither Report which recommended the construction of a plant at McIntosh. Mr. Logan explained this by saying that at the time of the revision the Chemicals Division was preparing the 1960 Whither Report and presumably it was waiting

[11.e] The Whither Report dealt with all projects (not merely chlorate) which the Chemicals Division wished Olin's management to consider.

to include the revision as a recommendation in the 1960 Report.

At this same time, late 1959, Dr. Wojcik, Director of R & D for Industrial Chemicals, and others in that division, were carrying on negotiations with Vickers-Krebs of Canada, looking toward an agreement under which Olin and ~~Krebs-Vickers~~ Vickers-Krebs would pool their know-how in an effort to develop jointly a cell employing a platinized titanium annode which could be used in the commercial manufacture of chlorate.

Mr. Logan testified that in November of 1959 construction of an independent facility by Olin appeared to be definitely more of a possibility than it previously had been. Because of this, on November 18, 1959, Mr. Logan wrote to Mr. Johns, General Sales Manager of Industrial Chemicals Division, and cautioned him against overcontracting for the sale of chlorate under the sales arrangement which Olin then had with Pennsalt, saying that "in all probability we will not proceed with a joint production facility." Apparently, Mr. Logan had reference to the sporadic joint venture discussions which had been going on between Pennsalt and Olin since at least 1957.

Despite Mr. Logan's view, further talks between Olin and Pennsalt took place on the subject of a joint venture in late 1959 and early 1960. These culminated in the letter of February 11, 1960 in which Pennsalt and Olin expressed their intention and purpose to enter into a joint venture. Thereafter, there were no further negotiations between the Chemicals Division and ~~Krebs-Vickers~~ Vickers-Krebs concerning the joint development of the platinized titanium ~~anode~~ anode cell, and the Chemicals Division made no recommendation to management about the construction of a plant at Chattanooga on the basis of the revised 1959 Whither Report. Quite naturally, all activities in the Olin organization in furtherance of individual entry into the southeastern chlorate field ended.

The letter of intention dated February 11, 1960 provided for the construction of a 25,000 ton chlorate plant at Calvert City, Kentucky adjacent to a facility owned by Pennsalt, for the plant to be owned by a corporation to be created under the name of Penn-Olin, 50% of the stock of which was to be owned by Olin and Pennsalt respectively, and for the project to be financed by a maximum amount of borrowing by Penn-Olin.

Even after the letter of intent was signed Olin's management was not happy about entering the chlorate field

either individually or as a partner with Pennsalt, in spite of the Chemicals Division's enthusiasm for the project. Because of this division in point of view, within a few weeks after the letter of intent was signed Mr. Osborne appointed an Evaluation Committee made up of representatives of the Olin staff and of the Chemicals Division to restudy the joint venture and to make a recommendation to him.[12]

The Evaluation Committee met on March 9, 1960. The minutes disclose that the Committee felt that it had no responsibility to "endorse Mr. Osborne's action" as Mr. Block insisted it should. Nevertheless, the Committee did endorse

[12] Mr. Osborne did not consider the letter of February 11, 1960 to be a binding commitment and it was not. Paragraph 6 reads:

> Both parties agree to negotiate in good faith for the purpose of reaching a mutual agreement on the provisions of a definitive contract that will be consistent with the understandings above set forth. If the definitive contract is not agreed upon and executed by both parties within a reasonable time after date of acceptance of this letter, both parties will be relieved of all further obligations under this letter, except with respect to the sharing of outside engineering expenses, theretofore, authorized by the parties.

his action "on the understanding that the final report of the technical group confirms the estimated net profit on gross investment (9.7%) indicated at this meeting."[13] The minutes stated that the presentation of the project to the CAR should include studies on technical feasibility, economics, and finances, and that the project was not to go forward until the CAR had approved it.

On July 29, 1960, the CAR, after discussing the joint venture at length, unanimously recommended that the project be rejected "on the basis that if an improvement in earnings is to be achieved, new projects must show indicated returns substantially above the present average."[14] The CAR found that the return of 9.7% which the Evaluation Committee fixed as a minimum requirement had not been met. Other considerations were noted which made the project unattractive: (1) Hooker had recently written five year

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[13] This, of course, was the estimated return for Penn-Olin and not the return estimated for Olin on its stock interest in Penn-Olin.

[14] The Industrial Chemicals Division average return in 1959 was 8.4% on gross investment before corporate overhead and financing charges.

contracts which guaranteed purchasers against price increases and gave them the benefit of price reductions. This indicated to the Committee that market entry by Penn-Olin might stimulate buyers to try to reduce prices further; (2) AmPot was seeking to have Olin act as a selling agent for it, and had offered to make 14,000 tons of sodium chlorate available if Olin was interested in selling the product in a large way in the Southeast; (3) the Committee felt that the sale of sodium chlorate would not attract much business to Olin in other products and might even cause Olin to lose some of its existing business. In conclusion, the minutes stated that if the joint venture should be disapproved as the CAR recommended, then Olin "should not proceed independently for a considerable period of time" and that "the committee does not see any reason to expect that we would want to do so."

Since the Chemicals Division was strenuously urging the joint venture while the CAR had recommended against it, Mr. Osborne called a meeting of representatives of each group on August 1, 1960 so that he personally could hear the pros and cons of the matter. At the end of the meeting

he announced his decision "not to proceed" for the following reasons:

(1) Department of Justice complaint is serious. While this is not governing, he would prefer not to battle on a project of such a low return.

(2) The return on investment is too low. The product is not important enough to our structure to justify proceeding with such a low return investment.

(3) The price situation is deteriorating. Fixed prices and inflating costs will squeeze return even lower for five years; after which time will be required to correct the situation. The return will stay low for 7 or 8 years.

(4) While our cash position is good, we can't have everything. The corporate profit on investment must increase and this project won't help. The maximum estimate of 9.3% would only be 8.5% after dividend tax.

(5) The project provides little opportunity for future expansion.

Despite Mr. Osborne's decision, Mr. Block immediately activated the Chemicals Division's engineering department into trying to bring the rate of return up to a point where the CAR would change its mind. He also requested that a meeting be held with Pennsalt so that the matter could be discussed further with it.

In spite of Mr. Block's insistence that the Penn-Olin venture not be dropped, Mr. Osborne met with Mr. Drake,

the president of Pennsalt, to discuss the abandonment of the joint venture and related problems such as the expenses incurred in connection with it. Apparently, Mr. Drake was keenly disappointed about Olin's intention to withdraw. Mr. Drake told Mr. Osborne that the Pennsalt engineers felt that Olin had been too conservative in its estimate of the return on investment, that the rated capacity of the plant could be increased to 26,500 tons from the 25,000 tons which the engineering staff of Olin had been figuring on, and that the joint venture had already been approved by the Pennsalt Board of Directors. In light of these considerations and because Olin had been working with Pennsalt for about six months, Mr. Osborne agreed that Olin should review the matter again.

Following the review, the project, with revisions, was resubmitted to Mr. Osborne, the CAR and the "Staff Coordinating Committee,"(15) in a memorandum dated August 22, 1960. This stated that a plant with a 26,500 ton capacity could be constructed for $300,000 less than originally estimated by making changes in design which would not adversely affect the operation, and that operating economies not originally envisaged would increase to 10.1% the originally estimated 8.1% return on Penn-Olin's gross investment. Accordingly, in

(15) Its identity is not disclosed.

late August or early September 1960, the project, as revised, was approved by the CAR. The approval of the Olin Board of Directors followed.

The definitive agreement was executed on January 2, 1961. It increased the capacity of the plant as originally planned (25,000) to 26,500 tons, and provided for a revised estimated plant cost of $7,500,000 to be supplied by Olin and Pennsalt each purchasing stock and notes of Penn-Olin for $1,500,000, and by Penn-Olin borrowing $4,500,000.

The plant was built and began operation on September 1, 1961 solely to manufacture chlorate.

The Government contends that, as a matter of reasonable probability, Olin would have built a 15,000 ton chlorate plant of its own somewhere in the Chattanooga-Charleston, Tennessee area if there had been no joint venture.[16] It points out that (1) the revised 1959 Whither Report disclosed that a chlorate plant at Chattanooga would yield an estimated 13.1% on gross investment, or more than the 10.1% projected by Penn-Olin, (2) at the end of August 1960, at about the time when Olin was finally approving the joint venture, Olin authorized the construction of a $13,000,000 chlorine ~~chlorate~~-caustic plant

[16] Finding of Fact 7.112 proposed by Government after remand.

at Charleston, Tennessee, and (3) it would have been operationally feasible for Olin to have constructed a 15,000 ton chlorate facility as an adjunct to the chlorine-caustic plant at Charleston, as the revised 1959 Whither Report contemplated should be done at Chattanooga. Chattanooga and Charleston are only a few miles apart in the Tennessee Valley, and each is equally accessible to the relatively cheap TVA power so all important in the manufacture of chlorate.

All this is true. But still it cannot be said that as a matter of reasonable probability Olin would have built its own chlorate plant at Charleston if there had been no joint venture.

In explaining why he determined to go into the joint venture, Mr. Osborne stated that Pennsalt had a process whereas Olin did not, and that in the manufacture of a product such as chlorate involving electrolytic chemistry, the experience and know-how of operating such a process was extremely important. Although the Vickers-Krebs process was available to Olin, and indeed its use was assumed in the revised 1959 Whither Report, the fact is that

Olin and Pennsalt, in planning the Penn-Olin facility considered and rejected the Vickers-Krebs process in favor of the Pennsalt process because the latter was deemed superior. At a special meeting between the Olin corporate staff and representatives of the Chemicals Division held on August 1, 1960 it was stated that "surveys of American and European industry have indicated that Pennsalt has the best process."

Mr. Osborne also said that the joint venture provided a vehicle for financing on a low equity basis by virtue of the contemplated borrowing of $4,000,000 by ~~Pennsalt~~ Penn-Olin. This enabled Olin to acquire a 50% interest in a 26,500 ton plant for $1,500,000, whereas the revised 1959 Whither Report contemplated an investment of $4,100,000 to obtain a 100% interest in a 15,000 ton plant.

Olin, of course, could have built a chlorate plant at Charleston and financed the project in part by borrowing so as to provide a greater return, just as Penn-Olin did. The record contains no suggestion that Olin would have done so. Furthermore, Mr. ~~Drake~~ Osborne testified that if money were borrowed to finance the project this would have reflected on Olin's overall credit and reduced its borrowing capacity

since such a loan would have appeared as an obligation on Olin's consolidated balance sheet. This would have been true even if the money were borrowed by a wholly owned subsidiary which owned the plant. This was not so in the case of ~~Pennsalt's~~ Penn-Olin's indebtedness since, being a 50% owned subsidiary, it would not be consolidated in either Olin's or Pennsalt's financial statements.

Furthermore, the Government attributes undue importance to the estimated return of 13.1% which the revised 1959 Whither Report assigned to the Chattanooga chlorate project. Although Mr. Osborne admitted that he knew of no analysis or studies which impeached the validity of this figure, the fact is that it was never subjected to the critical testing and analysis which invariably preceded staff and CAR approval of a project.

There can be little doubt that projects investigated and related earning forecasts of the Chemicals Division were in general highly suspect at the corporate management level. This is evident from the memorandum of October 14, 1960 which the corporate staff sent to Mr. Block. That memorandum rejected as inadequate the 1960 Whither Report which the Chemicals Division had submitted and sharply ~~criticized~~ criticized its activities

points of view. The memorandum stated:

> The Staff considers that *** the overall objective of the Chemicals Division during the period 1961-1965 is properly that of substantially improving its present rate of return on gross investment ***.

The memorandum emphasized that the personnel of the Chemicals Division must recognize that its "basic task" was that of increasing return on gross investment. After referring to a tabulation of "Indicated Return on Gross Investment" the memorandum stated:

> The Staff concludes, from examination of this data, that the programs so far advanced by the Chemicals Division, after taking into effect the shrinkage between predicted and realized earnings, will not have the desired effect of substantially increasing return on gross investment, and that a 'new look' is essential."

The skeptical attitude of Olin's management toward earning estimates submitted by the Chemicals Division probably explains, at least in part, the doubts entertained by the higher echelons in Olin in the summer of 1960 as to the wisdom of proceeding with the joint venture in the face of Chemicals Division's enthusiasm for it.

The case of the Government is built largely upon the optimism of R & D personnel and others of the Chemicals Division as to the chlorate potentialities. On only one occasion, however, did the Division consider that a wholly owned chlorate plant had sufficient attractiveness to recommend its construction. That was in the original 1959 Whither Report which recommended the building of a 14,000 ton plant at McIntosh, Alabama. That recommendation was rejected by the staff, although it proposed that the project be restudied further. While the October revision of the Whither Report indicated that a 13.1% return could be expected from a 15,000 ton chlorate plant operated in conjunction with a chlorine-caustic plant proposed by the Chemicals Division to be erected at Chattanooga, the Chemicals Division never recommended such a chlorate plant to anyone at the corporate level. And even if it be inferred that the Chattanooga project would have been submitted to management by the Chemicals Division as a recommendation in the 1960 Whither Report if the joint venture had not intervened, it is not reasonably probable that it would have received the approval of the staff, the CAR and Mr. Osborne, all of whose approvals were essential. This conclusion is justified by their pessimistic attitude in the summer of 1960 toward the economically more

favorable joint venture, and their lack of confidence in projects recommended by the Chemicals Division which is reflected in the memorandum of October 14, 1960 from corporate staff sent to Mr. Block.

But even if a proposal for a wholly owned chlorate plant at Chattanooga would have passed muster with the staff, the CAR and Mr. Osborne, no intelligent forecast can be made as to the likelihood of its approval by the Board of Directors who had the final say. Only two of its fifteen members, Messrs. Osborne and Block, were officers of Olin. The names of at least some of the other members mark them as men of broad financial and business experience.[17] Whether these men were hypercritical or easily persuaded to accept management proposals is not disclosed. Their record in approving or

[17] The 1959 Annual Report of Olin discloses that its Board of Directors was comprised of the following persons: Thomas S. Nichols, Chairman, Edward Block, F. Stillman Elfred, William C. Foster, Benjamin H. Griswold, III, John W. Hanes, John M. Olin, Spencer T. Olin, Stanley deJ. Osborne, Carleton H. Palmer, Sinclair Richardson, Laurance S. Rockefeller, Robert G. Stone, Sam P. Wallingford, Frank T. Whited, and Eugene F. Williams, Jr.

disapproving such proposals is not revealed. What their views would have been about a wholly owned chlorate facility which had been a controversial subject for so many years, cannot be conjectured.

After the joint venture agreement was executed, a number of events occurred which made individual entry in the chlorate field by Olin even less inviting than theretofore. After 1960 the rate of growth in chlorate consumption in the Southeast slowed down substantially since many pulp and paper mills had completed their conversion to the chlorine dioxide bleaching process. Increased competition appeared in July of 1961 when Pittsburgh Plate Glass (PPG) announced that it would construct a 15,000 ton chlorate plant at Lake Charles, Louisiana. In November of 1964 the price of chlorate f.o.b. plant was reduced about 9%. There was also an increasing threat that pulp and paper companies would either produce their own sodium chlorate, have it manufactured by a producer with a facility "over the fence" for delivery in solution form, or turn to other methods of obtaining chlorine dioxide which did not involve the use of sodium chlorate. Elaboration upon these factors is not warranted. Apparently the Government recognizes their efficacy to discourage individual market entry, for the

Government contends that such entry probably would have taken place prior to July of 1961.[18]

The Government has failed to sustain its burden of establishing by a preponderance of the evidence that, if Penn-Olin had not been formed, there would have been a reasonable probability that Olin would have constructed a chlorate plant in the Southeast.

(b) PENNSALT

As early as March of 1955, Pennsalt gave consideration to manufacturing chlorate in both a 7200 ton and 12,000 ton plant at Calvert City, Kentucky, as an adjunct to one of its own plants at that location. Its studies indicated that although the larger plant would yield the better return, about 15% before taxes,[19] it would still be a marginal operation and so unattractive as not to justify refining the figures.

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[18] Government's Comment 10.2 on Defendant's Proposed Findings of Fact on Remand.

[19] Hereafter all percentage return figures are before taxes.

In 1955 and 1956 Pennsalt gave some thought to entering into a chlorate joint venture with a gas transmission company or with Olin, and also to the construction of a plant on its own in Puerto Rico. Nothing concrete resulted.

In December of 1956, Hooker Chemical Company announced that it was going to increase the capacity of a chlorate plant at Columbus, Mississippi. This caused Mr. Drake, president of Pennsalt, to appoint a task force to prepare a report on the subject of a chlorate plant in the East. The purpose of the report was to determine "for the last time" (1) whether Pennsalt should have a position in the manufacture of chlorate in the East, and (2) what Pennsalt's future in the field would be if a plant, constructed alone or jointly with a partner such as Olin, could not be justified in accordance with Pennsalt's capital investment policy.[20]

[20] This policy required a minimum rate of return of 25% for basic or stable products for which forecasts of sales and costs could be made accurately. The return had to be more than 25% for a product which was subject to seasonal or cyclical variations, used by only one consuming group, or liable to rapid technical obsolesence. This investment policy has documentary substantiation. (PX 339).

The task force decided that a two-part report would be necessary: Part I to present data on capital requirement and return on investment; Part II to cover the market potential for the product. Part I was filed in March 1957. It stated that because of Pennsalt's manufacturing, selling and technical service know-how in merchandising, a new plant in the Southeast would appear to be logical if the company could be assured of a market potential for at least 15,000 tons per year. It pointed out, however, that Pennsalt would be a late third entrant in the field at a time when many other projects were competing for Pennsalt's capital funds, and that competitive chlorate capacity in the East was increasing. It further stated that financial studies indicated that on a minimum size plant of 15,000 tons at Calvert City, Kentucky, the return on investment would amount to only 11.4% and that the return on investment for a 20,000 ton plant at the same location would be 14.1%. Because this was considerably less than the company's investment policy minimum, the task force recommended that the project should be re-examined before Part II of the report was undertaken.

Following such re-examination it was determined on March 27, 1957 that Part I should be supplemented by a market

survey by Arthur D. Little, Inc. The Little survey of August 19, 1957 noted, among other things, that by the end of 1957 the chlorate consumption in the Eastern market would amount to about 52,000 tons, and that at the end of five years the estimated consumption would be between 77,500 and 81,500 tons, whereas the plants of AmPot and Hooker located in the East had a combined capacity of only about 46,000 tons. It also commented upon the importance of manufacturing perchlorates in conjunction with sodium chlorate since the perchlorates were beginning to be used as solid propellants in missiles.

On December 5, 1957, the Pennsalt management decided that it was unlikely that Pennsalt alone would construct a plant in the Southeast for the manufacture of chlorate alone, in view of the capital requirement and relatively low return on investment. Pennsalt never changed its view in this regard. The conclusion is warranted that Pennsalt would never have embarked upon such a project even if there had been no joint venture.

But this does not end the matter, as defendants seem to argue. After December 5, 1957, Pennsalt continued to interest itself in chlorate in the Southeast -- not by means

of building a plant to manufacture chlorate alone, but by building one which would manufacture chlorate -- in part for sale, and in part for manufacture by Pennsalt into perchlorate at the same facility. There is no reason to ignore this evidence, for individual market entry by Pennsalt in the chlorate field would have had the same competitive consequences regardless of whether chlorate was the sole chemical which Pennsalt produced or whether it produced chlorate in combination with one or more other chemicals.

In December 1957 or January 1958, Fred Shanaman, the President of the Washington Division of Pennsalt, met with John Logan, a Vice President of Olin, and arranged for Olin to sell in the Southeast 2,000 tons of Pennsalt's chlorate plant production at Portland, Oregon. At the same time they discussed the possibility of some kind of a joint chlorate operation in the Southeast. This latter subject was pursued in February by representatives of both companies, and it was agreed that neither company would move in the chlorate or perchlorate field without keeping the other party informed. It was at about this time that Pennsalt determined to build a pilot plant at Portland for the production of perchlorate in conjunction with its chlorate operation. On October 29, 1958,

a meeting was held among Pennsalt personnel to discuss "Chlorate Opportunities East of the Rocky Mountains." Under consideration was a Calvert City plant capable of producing 30,000 tons per year of chlorate, 20,000 for sale and 10,000 for use captively by Pennsalt in the manufacture of perchlorate. The minutes of the meeting state that "ammonium perchlorate demands from rocket needs are growing rapidly. Based upon current trends, shortages will exist before 1960."

Another Pennsalt meeting was held on November 3, 1958 at which it was decided that a 30,000 ton 100% owned combined chlorate-perchlorate operation at Calvert City looked economically attractive. The estimated return on an investment approximating $11,800,000 amounted to 31%. The minutes of the meeting state that the attractive return was due to the very high return on perchlorate, and that "from a *market* and *profitability* viewpoint, the combined venture is characterized as a "gamble."" The meeting noted with respect to perchlorate that (1) cost estimates were probably optimistic, (2) problems might be encountered in extrapolating certain engineering data, and (3) American Potash possessed a preferred sales position because ex-military personnel working for it had established

* Italics appear in the minutes.

strong political positions with the military services. The estimated return was calculated upon the assumption that chlorate bulk prices would remain firm in the near future and then increase, and that in the near future sodium chlorate package prices would increase $5.00 per ton. It was decided that Mr. Drake should apprise the Board of Directors "of the proposed plans for producing and marketing sodium chlorate and ammonium perchlorate in the East" and that thereafter he would make a "final decision" to authorize action and expenditure for: (1) Central Engineering Department immediately to design and engineer the plant for an Appropriation Request, (2) Industrial Division immediately to undertake entry in the Southern and other Eastern pulp and paper markets with the object of beginning commercial sale in January 1960, and (3) Public Relations immediately to prepare releases to publicize the project. It was unanimously agreed that the first quarter of 1960 was to be the goal for initial operation of the plant. The minutes state, however, that in June 1959 Mr. Drake should again review the project, and if at that time its prospects and profitability were still favorable, he should shortly thereafter submit the Appropriations Request to the Board. On November 3, 1958, Mr. Drake advised the Board that Pemsalt was giving some thought to a 30,000 ton chlorate-perchlorate plant. He

testified that at this time Pennsalt's planning was in the direction of an independent venture to produce chlorate and perchlorate in the East without Olin.

In January of 1959, Mr. Drake accidentally met Mr. Logan at the Chlorine Institute meeting and the two discussed the possibility of a joint venture between Pennsalt and Olin. Whether this was in the context of a chlorate plant solely or a combined chlorate-perchlorate plant is not clear. In any event, on January 23, 1959 the Pennsalt Appropriation Committee met and authorized Dr. LaLande, a Vice President and its technical director, to prepare data for discussion with Olin relating to the economics of a joint venture in the East for a chlorate-perchlorate project.

While this information was being assembled, Pennsalt, in February 1959, issued a news release stating that it was starting the construction of a plant to produce perchlorate adjacent to its chlorate plant at Portland, and that, "plans are being made to build another larger unit at a yet unannounced location in the South."

The data requested on January 23, ~~1958~~ 1959 by the Appropriation Committee was submitted by Dr. LaLande to Mr. Drake

in a memorandum dated April 10, 1959.[21] This disclosed estimated investment and return figures on chlorates and chlorate-perchlorate plants at Calvert City, Kentucky and Brunswick, Georgia, both as a project for Pennsalt alone and as a joint venture with Olin. On each postulate Calvert City was the most profitable. The tabulation shows that a 25,000 ton ~~25 ton~~ combination plant (20,000 ~~20~~ tons of chlorate for sale and 5,100 tons for captive manufacture into perchlorate), if 100% owned by Pennsalt, would entail an investment of $9,131,000 and yield 24.1%; and if jointly owned, with a portion of the funds borrowed by the producing company, would involve an investment of $5,241,000 and yield 42.7%. The tabulation also discloses that a 25,000 ton plant for the manufacture of chlorate alone, if 100% owned by Pennsalt, would require an investment of $6,961,000 and yield 15.9%; and if jointly owned, with a portion of the funds borrowed by the producing company at 6%, would necessitate an investment of $3,869,000

21. Between these two dates, there had been intermittent correspondence and possibly conversations between Mr. Drake and Mr. Logan concerning a joint facility in the Southeast. These communications related to a chlorate rather than to a chlorate-perchlorate combination plant.

and yield 27.1%.[22] The return of 24.1%, if Pennsalt alone built a combination plant, was below Pennsalt's investment standard.[23]

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[22] The tabulation also gave estimated returns for a 30,000 ton chlorate plant and a 30,000 ton combination plant (20,000 for sale and 10,000 for perchlorate), individually owned by Pennsalt, and jointly owned by it and Olin (PX 163). These figures are not set forth in this opinion for, as is later shown, by the spring of 1959 it appeared that only 5,000 tons of perchlorate, as a maximum, probably could be marketed, and for this reason Pennsalt was thinking in terms of a 25,000 ton combination plant (20,000 for sale and 5,000 for the perchlorate).

[23] Since the government was the only purchaser envisaged for perchlorate, and sales depended to some extent upon the rapidity with which it would be consumed in the firing of missiles (a circumstance which no one could foretell), the plant could not be justified under Pennsalt's investment policy unless a return of more than 25% was predictable.

During the period 1950-59 Pennsalt's net return on shareholders equity was less each year than was the average of chemical companies of comparable size. For this reason in 1959 Pennsalt was particularly conscious of the need to limit its investment in new projects to those which would net it a return in excess of minimum investment policy standards. Its efforts to upgrade the return on shareholders equity has borne substantial fruit, for its return has increased from 8.0% in 1960 to 10.6% in 1964.

On April 20, 1959 Mr. Drake sent a memorandum to Dr. LaLande stating that the Brunswick site had been eliminated from further consideration and that,

> For the present I see no reason for you to do any additional work on this pending reecipt [sic] of word from Mathieson relative to a site they are evaluating in Alabama which they believe will be superior to Brunswick.

Thereafter, the question of Pennsalt's entering the chlorate field in the Southeast, singly, jointly, with a combination perchlorate facility, or otherwise, remained quiescent until November 1959. At that time, Mr. Drake learned that Olin was asking Pennsalt for 3,000 tons of chlorate to ship into the Southeast in 1960, instead of 2,000 which Pennsalt had previously committed to Olin. This suggested to Mr. Drake that Olin was becoming more successful than anticipated in securing business from the pulp and paper industry. Consequently, he decided that the Pennsalt's files should be "dusted off," and requested Mr. Land, General Manager of Industrial Division (East), and Dr. LaLande to discuss the matter with him on November 19, 1959. At Mr. Drake's request, Mr. Walker, his administrative assistant, discussed the chlorate subject with others in the organization and after reviewing the files, prepared a resume of the situation.

It stated in part:

> The files indicate that as of November 1958 everything had been done preliminary to making a decision on this project, with the possible exception of reaching some agreement with Olin Mathieson on a joint venture.

The resume pointed out that there should be a market study so that the prior sales forecast could be brought up to date, and that the subject of perchlorate should be reviewed. As to the latter, he said:

> This is important because it is only the combined chlorate-perchlorate plants which make the project attractive from a return standpoint, particularly if Pennsalt were to undertake the project without a partner.

Concerning the economics, Mr. Walker, excerpting figures from Dr. LaLande's memorandum of April 10, 1959, said:

> The latest thinking on plant size is 30,000 TPY for chlorate and 10,000 TPY for perchlorate. Without a partner and using 100% Pennsalt capital the combined plant shows a return of 28%. Sodium chlorate alone shows a return of 13%. With a partner and 50% borrowed capital at 6% the return for a combined plant is 40% and for chlorate alone 17%.

On December 30, 1959 Mr. Land wrote Mr. Drake and said that, "if [chlorate] is to be reactivated, we should all be advised of current thinking." He said if the project was to involve chlorate alone, it would be necessary to have a 50% partner, to borrow a part of the necessary funds at 6%, and for Pennsalt to have the right to use Olin Mathieson's chlorine dioxide process.

Discussions between Pennsalt and Olin followed which eventuated in the joint venture letter of intention dated February 11, 1960.

Although on November 3, 1958, Mr. Drake had been given discretionary authority to direct (1) Central Engineering to design and engineer a ~~30~~ 100 ton plant (20,000 tons for sale, 10,000 tons for perchlorate), and (2) Industrial Division to undertake entry into the Southeastern pulp and paper market, he never informed either of them to proceed. He could not recall having authorized Public Relations to give any publicity to the project.

The Government argues that Pennsalt's failure to move forward with the November 3, 1958 plan to build its own chlorate-perchlorate plant was due to the joint venture discussions which

took place in January of 1959 between Mr. Drake and Mr. Logan, and that it was because of these talks that the November 3, 1958 plan for individual market entry by Pennsalt was abandoned in favor of the joint venture.(24) The Government asserts that, but for the intervening joint venture discussions and subsequent joint venture agreement, Pennsalt probably would have built its own chlorate plant in the Southeast.

In examining the evidence on this critical issue, it must be remembered that Pennsalt had found that a plant of its own which produced chlorate alone would yield a profit below its investment standard, and that the economic appeal of a combination plant owned by Pennsalt alone was attributable to perchlorate which, as compared to sodium chlorate, was a highly profitable item.(25)

Mr. Drake testified that his failure to direct Central Engineering and Industrial Division to take the action,

24. See Government's Proposed Finding of Facts 7.113 After Remand.

25. Preliminary figures prepared by Dr. LaLande on October 31, 1958, showed that the return from the operation of a 30,000 ton plant owned 100% by Pennsalt would be 13.3% on the chlorate, and 70.2% on the perchlorate.

under the discretionary authority given to him on November 3, 1958, was due to the fact that thereafter his interest in perchlorate began to wane. He testified that the decision on November 3, 1958 was based upon the premise that the Company would be able to sell 10,000 tons of perchlorate,[26] but that the possibility of "double accounting" as to the future demand for perchlorate shook his confidence in the estimate. He also said that, as he recalled, the November 3, 1958 earnings estimate had been based on the then market price of 38¢ per pound for perchlorate which later was reduced to about 32¢ per pound. Even the minutes of the November 3, 1958 meeting recognized that the cost estimates for the perchlorate plant were "probably optimistic". Mr. Drake said that there were just too many holes in the thing for him to approve it. "The risk was too great on the profit guesstimate".

Although Pennsalt was becoming less enchanted with an Eastern perchlorate operation, Mr. Drake said that it still

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26. The minutes of the November 3, 1958 meeting state:

> Military demands for ammonium perchlorate appeared, upon review, to be more than adequate to absorb all projected production during the next five years.

wanted to "keep a finger in the pie." For this reason he felt that the thing to do was to have Pennsalt feel its way along with the relatively small 2000 ton perchlorate plant at Portland to see how the market would develop rather than to have Central Engineering spend the $200,000 involved in engineering and designing an Eastern combination plant.[27.e]

This explanation why Mr. Drake never gave his approval to Central Engineering and the Industrial Division to go ahead with their respective duties looking toward the construction of a 30,000 ton plant (20,000 ton chlorate and 10,000 ton perchlorate) as ~~it~~ he was given discretionary authority to do on November 3, 1958, is based not only upon Mr. Drake's testimony but, as will appear, also upon contemporaneous writings.

Shortly after the meeting of November 3, 1958, it became apparent to Pennsalt that the perchlorate aspect of the project as envisaged at the meeting, might entail serious problems which had not been fully evaluated. At the meeting

27.e The capital expenditure for the perchlorate facility at Portland had been approved by the Investment Committee on January 9, 1959.

it was believed that military demands for perchlorate would be more than adequate to absorb all projected production for a period of five years. On November 11, 1958, however, an inter-office memorandum pointed out the possibility that the company's estimate of perchlorate demand might be substantially inflated due to "double accounting." It also confirmed the fact that a 2000 ton perchlorate plant was being constructed by Hooker at Columbus, Mississippi. The memorandum stated that "[i]n view of the possibility of reduced demand and greater installed capacity," the Technical Division "should prepare for future examination a cost estimate on an alternate Eastern venture producing for sale 20,000 TPY sodium chlorate and only 5,000 TPY of ammonium perchlorate."

On November 13, 1958, the Management Committee had presented to it a progress report. This stated that "action may depend upon how much we are willing to gamble on future markets." Mr Drake, apparently concerned with the possibility of Government contracts being renegotiated, asked that a check be made to see whether perchlorate was subject to renegotiation.

On January 28, 1959 the cost estimate requested on November 11, 1958 was submitted. It disclosed that a

25,000 ton plant, if wholly owned by Pennsalt, would yield 15.9% on chlorate, 55% on perchlorate, and 26.2% on the combined operation.[28] Mr. Land testified that the 26% return was marginal -- not at the current stage enough to eliminate it, but also not enough to be very pleasing.

By the spring of 1959 Pennsalt's thinking had definitely turned away from the 30,000 ton plant which had received qualified approval on November 3, 1958 and became oriented to the construction of a 25,000 ton plant (20,000 tons chlorate, 5,000 tons perchlorate). Such a plant never received even the tentative approval of Pennsalt's management and, of course, Mr. Drake had no authority to instruct Central Engineering or the Industrial Division to take any action in furtherance of it.

The only type of plant which Pennsalt gave any consideration to constructing by itself after December 5, 1957, was a combination chlorate-perchlorate plant. No plant of the latter kind ever received definitive approval by the Pennsalt management. The closest thing to it was the action taken on November 3, ~~1959~~ 1958, but even this reposed discretionary authority in Mr. Drake to withhold final approval, which

28. With 50% of the capital borrowed, the chlorate operation was estimated to yield 27.1%, perchlorate 84.4%, and the combined project 42.7%.

he did. There can be no question about the fact that after November 3, ~~1959~~ 1958 Pennsalt began to have serious doubts about its ability to sell 10,000 tons of perchlorate per year which was the hypothesis upon which the November 3, ~~1959~~ 1958 action was taken, and that thereafter its interest in perchlorate in the Southeast diminished. And if any question about this remains, it is settled by what Pennsalt and Olin did in carrying out the joint venture, namely, they had Penn-Olin build a plant to produce chlorate alone -- not to produce chlorate and perchlorate in combination. This action was taken notwithstanding the relatively high return which all of Pennsalt's earlier estimates attributed to perchlorate. If Pennsalt was unwilling with Olin as a partner to have Penn-Olin build a combination plant to manufacture chlorate-perchlorate, the conclusion is not reasonable that Pennsalt alone would have built such a plant if there had been no joint venture.

The soundness of the judgment which excluded perchlorate from the operation at Calvert City, and in restricting the operation to chlorate alone, is borne out by a memorandum which the Secretary of Defense sent to perchlorate producers in August of 1960. That memorandum stated that for the next two or three years the existing substantial excess of

capacity for perchlorate production over its requirements would ~~continued~~ continue, but that in 1964 the requirements of the Department of Defense might possibly exceed, at least temporarily, the total productive capacity of current producers.

In early 1960 Mr. Drake reported to the Pennsalt Board of Directors that there was room in the Southeast chlorate market for only one more significant producer. The market entry of such an additional producer was announced in July of 1961 by Pittsburgh Plate Glass when it made known its plan to build a 15,000 ton chlorate plant at Lake Charles, Louisiana. The prospect of this additional competition makes it reasonably clear that if Pennsalt had not determined to build a plant by itself prior to July of 1961, it would not have done so thereafter.

It is, of course, possible that if there had been no joint venture Pennsalt alone would have constructed a facility in the Southeast for the manufacture of chlorate alone or in combination with perchlorate. Anything is possible. But, if the record is to be the criterion, it is unlikely that this would have occurred.

The Government has failed to sustain its burden of establishing by a preponderance of the evidence that, but for the joint venture, Pennsalt as a matter of reasonable probability would have individually entered the Southeastern chlorate market.

In view of the manner in which issue 1 has been resolved, it is unnecessary to decide issue 2, to determine the relevance of issue 3, or to resolve issue 3, if it is relevant.

This opinion constitutes Findings of Fact and Conclusions of Law.

The Complaint will be dismissed.