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Decision No. 52219

Decision No. \_\_\_\_\_

BEFORE THE RAILROAD COMMISSION  
OF THE STATE OF CALIFORNIA.

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In the Matter of the Construction )  
and Operation of GAS UTILITIES Dur- ) Case No. 1175.  
ing the Emergency Created by the )  
War. )

- C. P. Cutten for Pacific Gas and Electric Company.
- Chickering and Gregory for Sierra and San Francisco Power Company and Santa Maria Gas and Power Company.
- Samuel Kahn for Western States Gas and Electric Company and San Diego Consolidated Gas and Electric Company.
- A. N. Kemp for Santa Barbara Gas and Electric Company.
- A. B. Macbeth for Southern California Gas Company, Midway Gas Company and Producers' Gas and Fuel Company.
- C. A. Luckenbach for Los Angeles Gas and Electric Company.
- F. S. Wade for Southern Counties Gas Company.
- Edward Whaley for Northern California Power Company, Consolidated.
- G. W. Satchell for Coalinga Gas and Power Company.
- H. C. Keyes for Sacramento Gas Company.
- Emory Wishon for San Joaquin Light and Power Corporation.

THELEN, Commissioner.

O P I N I O N .

This proceeding was instituted on the Railroad Commission's own motion for the purpose of informing itself with reference to the problems of California gas utilities, both as to construction and operation, during the emergency created by the war, and of thereafter making such orders or recommendations as might seem necessary or desirable in the solution of such problems.

A public hearing was held in San Francisco on December 8, 1917. A decision has been deferred pending a decision by the federal government as to whether it desires to enter into contracts with any California gas companies looking to the extraction of toluol from artificial gas manufactured in this State.

The rate problems of California gas utilities, caused largely by increased costs of fuel, materials and labor, are being presented to the Commission in separate formal proceedings filed by individual companies.

The need of gas utilities for new capital is relatively small as compared with the needs of electric utilities and need not be considered herein.

The representatives of the gas utilities directed the attention of the Commission at the hearing herein to only two problems:

1. Extensions.
2. Extraction of toluol.

As to gas extensions, the attention of the Commission has not been directed to any situation requiring an order herein. Unless some showing is made as to the necessity for affirmative relief, we may assume that our gas utilities will continue the same policies as to extensions as heretofore.

This leaves for consideration only the toluol situation. This was the matter which the Commission primarily had in mind when this proceeding was instituted.

It is matter of common knowledge that the government needs very large quantities of toluol for the manufacture of the high explosive known as trinitrotoluol. The three principal sources from which toluol is being secured in the United States are:

1. By-product of coke ovens.
2. Synthetic gasoline manufacturing plants.
3. Artificial gas plants.

The largest amount of toluol is at present secured from by-product coke ovens. At this time, however, the light oil recovery of by-product coke ovens does not exceed 60,000,000 gallons per year, from which between 9,000,000 and 10,000,000 gallons of toluol are recovered.

The various oil cracking processes now in use, although as yet largely experimental, may be utilized as an important source for the production of toluol. The production of cracked or synthetic gasoline in the United States has increased from 1,000,000 barrels in 1913 to approximately 7,000,000 barrels in 1917. Assuming that the output capacity of synthetic gasoline plants in the United States during 1918 will be 9,000,000 barrels of cracked gasoline, the Gas and Electric Division of the Railroad Commission reports that it would be reasonable to expect that in case of necessity from 12,000,000 to 15,000,000 gallons of toluol could be produced in these plants in 1918.

As the Ordnance Department of the War Department made public announcement at a conference held in Washington on July 31 and August 1 and 2, 1917 that the additional requirements of the Government for toluol would be 23,500,000 gallons during the ensuing year, it is evident that serious consideration must be given to every available source from which toluol can be manufactured.

Under these conditions, the production of toluol from artificial gas has been the subject of wide spread attention and

of considerable discussion in technical periodicals. Reference is hereby made to the following reports and published articles, among others:

- Report - Sub-committee on Coal Tar By-products of Committee on Chemicals of American Gas Institute - The Recovery of Toluol from Gas Works. - September 17, 1917.
- Report - Bureau of Standards - Recovery of Light Oils and Refining of Toluol - October 15, 1917.
- Minutes of Conference on Standards for Gas Service and the Recovery of Toluol - held at office of Bureau of Standards, Washington, D.C., July 31, August 1 and 2, 1917 - issued by Bureau of Standards October 15, 1917.
- Report - Investigation Relative to Establishing a Calorific Standard for Gas - by Charles D. Jenkins, Inspector of Gas, Massachusetts Board of Gas and Electric Light Commissioners.
- Decision - Massachusetts Board of Gas and Electric Light Commissioners - Calorific Standard for Gas - December 10, 1917.
- The Utilities Magazine - November, 1917, p.1 - Should Gas Standards be Revised to Meet War Conditions, by A. S. B. Little.
- Gas Age - November 1, 1917, p.391 - Editorials on "Toluol Recovery" and "Commissions and Toluol".
- Gas Age - November 1, 1917, p.393 - Report on Production of Toluol by Gas Companies.
- Gas Age - November 15, 1917, p.443 - Editorial on "Light Oil Recovery".
- Gas Age - November 15, 1917, p.447 - Relation of Gas Industry to Military Needs, by Dr. E. B. Rosa.

Gas Age - December 1, 1917, p.493 - Editorial - Toluol Situation.

Gas Age - December 1, 1917, p.495 - Relation of Gas Industry to Military Needs, by Dr. E. B. Rosa (Concluded).

American Gas Engineering Journal - January 12, 1918, p.31 - In any Case where Toluol is to be Removed Candle Power Standard Should be Eliminated or Made so Low it will not Interfere with Operations, by R. S. McBride.

The report of the Sub-committee on Coal Tar By-products, hereinbefore referred to, estimates that gas companies operating in 80 specified cities of the United States could together produce approximately 7,300,000 gallons of toluol annually. The same report states that installation of plants for the recovery of toluol was going on or plants were actually operating in Chicago, Jersey City, Newark, Patterson, Minneapolis and St. Louis and that from these plants 1,250,000 gallons of toluol can be recovered annually. The report further estimates that an additional annual production of 3,274,000 gallons of toluol could be secured from seven gas plants in New York City, five in Brooklyn and the plants in Philadelphia, Boston and Detroit.

The extraction of the light oils and cognate matters, where a gas company operates its plant for the recovery of toluol, is being covered by contracts between the individual gas companies and the United States government. It is not necessary here to refer to the details of these contracts.

The extraction from artificial gas of light oils for the manufacture of toluol has required in some of the states

changes in the theretofore existing standards of gas both as to candle power and heat units. Applications for such changes have been made to and acted upon by the state public service commissions of a number of eastern states, including New York, Massachusetts and New Jersey.

In California, the production of artificial gas in quantities large enough to receive favorable consideration in this connection would seem to be limited to perhaps three or four of the larger cities. The report of the Sub-committee on Coal Tar By-Products refers to the artificial gas plants located only in the cities of San Francisco, Oakland and Los Angeles.

The United States Government has entered into no toluol contract with any gas company in California. We are advised that the government is awaiting the result of tests which are now being conducted to ascertain whether the possible toluol recovery from California artificial gas will be of sufficient amount to justify the installation of the necessary recovery plants. The average heat content of the artificial gas manufactured in the three California cities hereinbefore mentioned does not exceed between 550 and 565 B.T.U. Whether any such contracts will ultimately be entered into we do not know.

The California Commission stands ready to take such action, if any, as may be within its jurisdiction and as may be necessary in case the government should call upon any California gas company to recover from its artificial gas light oils for the recovery of toluol.

At present, however, no contract has been entered into and it is uncertain whether any such action will be taken and, if so, when. I therefore recommend that further proceedings herein be suspended until the further order of the Railroad Commission, this proceeding, however, being kept open for such action, if any, as may hereafter become necessary or desirable.

I submit the following form of order:

O R D E R .

A public hearing having been held in the above entitled proceeding and it appearing that no action by the Railroad Commission is at this time necessary herein,

IT IS HEREBY ORDERED that further proceedings herein be suspended until the further order of the Railroad Commission, this proceeding, however, being kept open for such further order or orders as may hereafter appear necessary or desirable.

The foregoing opinion and order are hereby approved and ordered filed as the opinion and order of the Railroad Commission of the State of California.

Dated at San Francisco, California, this 22<sup>d</sup> day of March, 1918.

Max Thelen  
H. S. Loveland  
Wm. G. Gordon  
Frank R. Devlin

Commissioners.