IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1932.

STATES OF WISCONSIN, MINNESOTA, OHIO and PENNSYLVANIA,
Complainants,
vs.
STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO,
Defendants,
STATE OF MISSOURI, KENTUCKY, TENNESSEE, LOUISIANA, MISSISSIPPI, AND ARKANSAS,
Intervening Defendants.
No. 5, Original.

STATE OF MICHIGAN,
Complainant,
vs.
STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO, et al.,
Defendants.
No. 8, Original.

STATE OF NEW YORK,
Complainant,
vs.
STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO, et al.,
Defendants.
No. 9, Original.

BRIEF OF DEFENDANT, THE SANITARY DISTRICT OF CHICAGO, ON FACTS AS PRESENTED IN THE REPORT OF EDWARD F. McCLENNEN, SPECIAL MASTER.

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BRIEF OF DEFENDANT, THE SANITARY DISTRICT OF CHICAGO, ON FACTS AS PRESENTED IN THE REPORT OF EDWARD F. McCLENNEN, SPECIAL MASTER.

STATEMENT OF OBJECTIONS TO THE SPECIAL MASTER'S REPORT AND SUMMARY OF ARGUMENT.

TO THE HONORABLE THE CHIEF JUSTICE AND THE ASSOCIATE JUSTICES OF THE SUPREME COURT:

The Special Master, Edward F. McClennen, has proceeded upon the premise that the facts found by the former Special Master, now Mr. Chief Justice Hughes, should be taken as unchangeable in this reference. And

as facts found in the former references, the Special Master has erroneously assumed as definitely decided (1) that the hydraulics of the Chicago River will not permit a reduction in diversion to 5,000 c.f.s. without controlling works and that controlling works are a necessary condition precedent to a reduction in diversion below 6,500 c.f.s.; and (2) that the Southwest Side Treatment Works cannot be constructed in less than 5½ years, which was the time *allowed* for this work by the former Special Master, and that the time for the preliminary steps allowed by the former Special Master constituted a definite requirement and was inflexible, and that the work can not be completed within a shorter time than that allowed. The Special Master has proceeded upon the further belief that "the facts decided by the two former opinions and by the decree must be taken as unchangeable," and apparently deemed it incumbent upon him to suggest some means of financing the project, so that it can be completed by the end of 1938, irrespective of the financial situation of the Sanitary District, regardless of how drastic the means employed might be, and notwithstanding that the former Special Master and the decree suggest the possibility of unforeseen obstacles which might be so serious as to call for a modification of the decree.

So firmly has the Special Master adhered to this hypothesis and his conception, which we believe to be erroneous, as to what actually was found by the former Special Master and his construction of the requirements of the decree and of the scope of this reference, that he has been unable in our judgment to give due consideration and attach proper significance to much of the testimony presented by the defendants. As the report indicates, the defendants contend that there is error in many of the findings of the Special Master which form

the basis of the conclusions reached by him, and because we believe that considerable important testimony has been ignored or misapprehended we are called upon to refer to the record at some length in order to sustain our contention. We believe the circumstances of the case require an analysis of much of the evidence and we assume that inasmuch as the order of the Court does not provide for an abstract of the evidence we may have more than the usual latitude in our references to the testimony.

Before proceeding with our argument we shall, for convenience, summarize our objections to the respective conclusions of the Special Master, which we contend should not be adopted by this Court.

The findings of the Special Master with respect to the causes of the delay in obtaining approval of the construction of controlling works in the Chicago River, insofar as they impute delinquency to the Sanitary District, are erroneous and should not be confirmed by this Court for the following reasons:

(a) Uncontroverted testimony establishing the futility of doing anything more than was done by the Sanitary District, because of the attitude of the War Department, and other reasons, is misapprehended by the Special Master and inaccurately presented in his report.

(b) The Special Master misconceives the duty of the Sanitary District under the decree of April 21, 1930, and fails adequately to state what the Sanitary District regarded its duty to be under the decree.

(c) The Special Master misconstrues entirely the effect of the Rivers and Harbors Act of July 3, 1930; he misinterprets the reports and statements

of officials of the War Department with reference to the flow required to maintain a nine-foot depth in the Illinois River from Utica to the Mississippi, (as distinguished from Lockport to Utica) and miscomprehends the present attitude of the War Department on this subject.

(d) The Special Master excluded evidence relating to the flow required to maintain navigation on the now authorized Federal Project between the Port of Chicago and the Mississippi River, but makes an erroneous finding on this point.

(e) The Special Master improperly injects the proposed Canadian Treaty into the case.

(f) The Special Master construes erroneously the former opinions of this Court in these cases.

(g) The Special Master does not state with precision the present attitude of the Sanitary District with respect to the installation of controlling works.

(h) The Special Master errs in proceeding upon the belief that the facts found by the former Special Master must be taken as unchangeable in the present reference; he errs in his conception of what actually was found by the former Special Master and he ignores the express qualification of the former Special Master upon the findings then made.

The recommendations concerning the steps which should now be taken to secure the approval of the War Department of the construction of controlling works, are erroneous and should not be confirmed by this Court because it has been demonstrated that controlling works are not necessary as long as the diversion is 5,000

c.f.s. or more, as it will be at the end of 1935. The Sanitary District Engineers testified in the present reference that the hydraulics of the Chicago River and the Drainage Canal, after the construction of certain large intercepting sewers along the portions of the Chicago River adjacent to Lake Michigan, will permit a reduction in diversion to 5,000 c.f.s. without the installation of controlling works and without danger to the metropolitan water supply. The testimony of these engineers was based upon their experience and knowledge gained since the hearings in 1929. The installation of controlling works will serve no useful purpose until the diversion is reduced to a figure below 5,000 c.f.s., which will not occur, if it occurs at all, before the end of 1938. Controlling works can be built in two seasons.

Aside from the constitutional and legal difficulties presented, the recommendation concerning enforced State financial aid is premature, unreasonable and unnecessary.

In finding as a cause of delay in providing for the construction of the Southwest Side Treatment Works "an inexcusable and planned postponement of the beginning of construction of these Works to January 1, 1935 which left an inadequate time for their completion before December 31, 1938, at the rate of progress expected or to be expected under the methods pursued by the Sanitary District," (Rep. 50) the Special Master errs for the following reasons:

(a) The uncontradicted and unchallenged testimony in this reference is that the Sanitary District adopted a program after the entry of the decree in 1930 (set up in the form of a graph or chart and introduced as Exhibit 22) which contemplated the beginning of the physical construction of these works about January 1, 1935, and allowed sufficient

time for completion of the works before the end of 1938, so that a reduction in diversion to 1,500 c.f.s. would be accepted as provided in the decree.

(b) The Special Master errs in assuming the allowance made in the recommendation of the former Special Master for the construction of these works to be the minimum time in which the works might be constructed.

(c) The Special Master errs in ignoring the unchallenged testimony in this reference that the works can be constructed in the time allotted, namely, four years, beginning about January 1, 1935.

The finding as a further alleged cause of delay in providing for the construction of the Southwest Side Treatment Works, that the Sanitary District failed "to proceed to a definite decision as to a site and to the acquisition of the site so chosen," and failed "to proceed with reasonable diligence to prepare designs, plans, and specifications for the Works at this site or on the site of the West Side Works," (Rep. 50) is erroneous, because:

(a) The evidence establishes that the opposition to the proposed Southwest Side site and the difficulties encountered in the digestion of sludge at the West Side Plant by the Imhoff Tanks justified the Sanitary District in experimenting with the dewatering and incineration of sludge, a method of disposal of sludge which eliminates the Imhoff Tanks and open-air drying beds; if practicable and if adopted, the dewatering and incineration method, which requires much less space, would enable the Sanitary District to combine the Southwest Side Treatment Works with the West Side Treatment Works on the West Side site.

(b) No delay in the construction of the Southwest Side Works or its equivalent is attributable to the alleged indecision as to a site and alleged lack of diligence in the preparation of designs, plans and specifications for the Works at this site or on the site of the West Side Works.

The Sanitary District is opposed to the Master's recommendation that the decree of April 21, 1930, be enlarged by the addition of a paragraph enjoining the "State of Illinois to provide forthwith the necessary money for, and * * * forthwith to determine upon and secure the site * * * if the site is not owned already by the Sanitary District and forthwith to design and to construct said Southwest Side Treatment Works * * * at a rate of progress forthwith that except for casualties not now foreseeable will result in the completion of said Works and the beginning of their operation in ordinary course before December 31, 1938" (Rep. 60). The Sanitary District is prepared to construct the Southwest Side Treatment Works as soon as the necessary funds are available. It is not a certainty as yet, and no such contention was made in this reference, that the Sanitary District will not be able to raise the necessary funds in sufficient time to complete the construction before the end of 1938.

We shall discuss separately the reasonableness and wisdom of enlarging the decree of this Court to the end that the financial burden of the entire sewage treatment program be made a State responsibility. This phase of the case overshadows all others. The Special Master's recommendations in this respect should not be adopted, in the opinion of the Sanitary District. For reasons which will appear in our argument, an extension of time beyond 1938 in which to complete the neces-

sary construction work is preferable to a requirement of State financial aid and responsibility, all interests considered, in the event that the Sanitary District cannot finance the entire project before the end of 1938.

Although the financial question has become paramount, we shall, before considering it, refer at some length to the evidence presented to the Special Master upon which we base our contention that his findings imputing delinquency to the Sanitary District in its progress with the construction of controlling works and the Southwest Side Treatment Works are erroneous and should not be confirmed. We maintain that in the circumstances the criticism of the Special Master is unjust and that the Sanitary District should be absolved from the reproach of the Special Master. But our primary purpose in reviewing the evidence in detail on these matters is to remove any erroneous impression that might be conveyed by the Special Master's Report, so that the Court, in its consideration of where responsibility should be placed for the remaining work to be done, will have no misconception of the diligence it may expect from the Sanitary District in the future.

The evidence is undisputed that the officials of the Sanitary District have endeavored conscientiously and with an earnest purpose to comply with the decree of this Court, and that it is the intention of the Sanitary District to effect compliance with the decree, if it is at all possible.

The Special Master has found that the charges of the complainants that there has been an unfaithful effort to delay, avoid and circumvent the performance of the decree of this Court, have not been proved (Rep. 5-6). The Special Master states, however, that the nonaction of the Sanitary District warranted a belief on

the part of the complainants in the charge made (Rep. 5). This finding is objected to by the defendants.

After discussing the Special Master's conclusion regarding the charges of bad faith, our argument will follow the outline of the Special Master's Report, and we shall summarize the evidence in support of our objections to the findings and recommendations made in the order that these objections are stated above.

A brief has been prepared on the legal questions presented, and is submitted separately in conjunction with this brief on the facts.

We shall refer to the Report of Special Master McClennen as the "Report of the Special Master," and it will be abbreviated as "Rep." The Report of the former Special Master, now Mr. Chief Justice Hughes, on Re-reference, filed December 17, 1929, will be referred to as the "Report on Re-reference," and will be abbreviated as "Re-ref." The Report of the former Special Master, on the original hearing of the case, filed November 23, 1927, will be referred to as the "First Report" and will be abbreviated as "First Rep." The Record of the hearings before Special Master McClennen will be abbreviated as "Rec."

ARGUMENT.

I.

Charges of Bad Faith.

The application filed by the complaining States contains charges of a very serious character. In addition to the allegations that the alleged failures on the part of the defendants are due to an unfaithful effort to delay, avoid and circumvent the performance of the decree of this Court (Rep. 5) the application contains the following typical charges:

> "The State of Illinois and the Sanitary District of Chicago, through negligence, incompetence or bad faith, have failed, neglected and refused adequately and reasonably to provide for financing the performance of this Court's decree" (Application page 13).
>
> "This wholly inadequate provision for financing in compliance with the decree of this Court is coupled with a failure through neglect, incompetence or bad faith, to levy and collect normal taxes at any time since the decree of this Court became effective" (Application page 14).
>
> "This difficulty [in selling bonds] arose from a self-created obstacle, to-wit, from the fact that, through negligence, incompetence, or bad faith, normal and usual taxes had not been levied and collected" (Application page 15).
>
> "By a course of conduct characterized by neglect, incompetence, defiance, or bad faith, as the case may be, the Sanitary District of Chicago has wholly failed to make any real, substantial and good faith effort to perform the decree of this Court, and has wholly failed to make reasonable, substantial and bona fide progress in carrying out that decree. The State of Illinois has made no effort on her part to comply with the decree; but on the contrary, for

> nearly three years has viewed with complacency, if not approval, the neglect, defiance, and/or bad faith of her political subdivision and agency, the Sanitary District of Chicago'' (Application page 16).

The Special Master reports with respect to these charges in general: ''I find that the truth of the charge has not been proved and, therefore, that it is not so'' (Rep. 6). The Special Master found further that the Sanitary District is not responsible for its financial plight (Rep. 78). And again, that ''In the conditions which now exist, there is no reasonable financial measure which The Sanitary District can take, which it is failing to take'' (Rep. 82).

With respect to controlling works the Special Master finds that: ''Neither Lieutenant Colonel Weeks nor the Sanitary District intended to violate the decree of this Court'' (Rep. 18).

With reference to the Southwest Side Project the Special Master states that ''* * the Sanitary District was right in giving timely precedence to those other Projects, in case it was impossible to deal concurrently with all the Projects'' (Rep. 55).

The Semi-annual Reports that were filed by the Sanitary District state very explicitely that delay in construction has been due to the lack of funds. The opposition encountered to the proposed Southwest Side site is explained in these Reports. Reference is made in the Semi-annual Reports to the experiments in the dewatering and incineration of sludge. The progress of design and construction is summarized in the Reports.

No statements made in the Semi-annual Reports have been disproved and the only ground for the charges made is an unwarranted inference based upon an alleged lack of action. The decree is silent with re-

spect to controlling works and engineering detail. Charges of defiance and bad faith cannot be made upon the mere failure to perform an assumed obligation, and it is manifest that inaction does not warrant a belief of bad faith sufficient to sustain a charge of an intention unfaithfully to delay, avoid and circumvent the performance of a supposed duty. It is obvious that in any case there may be good reasons for the failure to perform a duty, and in the case of public officials who are presumed to do their duty, a charge of bad faith and circumvention should never be held to be justified unless there is sufficient evidence to rebut the presumption to the contrary. A presumption exists in favor of the validity and propriety of official conduct and municipal action.

Cincinnati & Texas Pacific Ry. v. *Rankin,* 241 U. S. 319, 327.
Muser v. *Magone,* 155 U. S. 240, 251.
Quinlan v. *Green County,* 205 U. S. 410, 422.

Under the findings of the Special Master that the charges made have not been proved, and in the light of the evidence hereinafter referred to, we respectfully submit that this Court should find that the complaining States were not justified in making such charges in their application.

II.

Controlling Works.

(a) Formal application to Secretary of War after decree of April 21, 1930, for approval of controlling works would have been futile.

The Special Master has found that "The cause of this delay is a total and inexcusable failure of the defendants to make an application to the Secretary of War for such approval" (Rep. 5). We contend that under the prac-

tice which had been followed by the War Department in the District Engineer's office in the Chicago District, the equivalent to an informal application for controlling works was made by the Sanitary District which disclosed that the War Department was opposed to all plans or designs for controlling works which had been brought to its attention, consisting in all of about seventeen schemes, which represented all conceivable ideas on the subject, and that a formal application addressed to the Secretary of War would have been futile. After the entry of the decree Lieutenant-Colonel Weeks, the U. S. District Engineer at the time, told Mr. Ramey, a Sanitary District Engineer, that the War Department was not interested at that time in the installation of controlling works in the Chicago River (Rec. 487). And further, that the subject of control gates could be dropped with propriety for the time being (Rec. 489).

Lieutenant-Colonel Weeks testified that in his conferences with Mr. Wisner, another Sanitary District Engineer who had been placed in charge of this matter, he said to him in effect that, "We should let the matter rest until we had some intimation that the War Department wanted something done" (Weeks, Rec. 493). Weeks testified further that, "After having submitted a number of plans to the Chief of Engineers, to my mind it put the matter of deciding upon which of the numerous plans the Department would be willing to receive an application for * * *. My judgment would be that after having submitted the plans to the Department, I would do nothing to urge action on the part of the Department" (Weeks, Rec. 804-805).

According to his testimony, Weeks was definitely of the opinion that the next move was up to the War Department; he conveyed this opinion to the representa-

tives of the Sanitary District and by tacit agreement they did not press the matter (Weeks, Rec. 492).

Weeks testified further that in his meetings with Mr. Wisner they "invariably mentioned the lack of action on the part of the Department with respect to my [Week's] report on controlling works in the Chicago River, and by tacit agreement we did not press the matter" (Weeks, Rec. 492). On the occasion of every visit, with possibly one or two exceptions, Mr. Wisner inquired of Col. Weeks whether he had heard anything from the War Department with respect to the plans submitted by Col. Weeks in his report (Weeks, Rec. 792).

Seldom as much as two months went by that Wisner did not call on Weeks (Weeks, Rec. 491). The conferences always pertained to the activities of the Sanitary District on matters for which Col. Weeks held himself responsible to the War Department, and the subject of the installation of controlling works in the Chicago River was mentioned in those conferences both before and after the decree (Weeks, Rec. 492). Weeks also testified that Wisner never stated specifically his reason for inquiring whether Weeks had heard anything from the War Department concerning the plans submitted, but his reason was known to both of them (Weeks, Rec. 792), and upon being asked by the Special Master if he stated all of the conversations that he could recall, Weeks testified that Wisner always said in so many words, "When you do hear let us know because we are ready or anxious to go ahead" (Weeks, Rec. 792-793). The Special Master in his report (page 17) states, "It is a matter of conjecture which there is no need to draw, why he said this." Manifestly, what Wisner expressed a willingness to do was to go ahead with controlling works as soon as the War Department indicated a disposition to approve controlling works.

When asked the latest date at which Wisner said "When you do hear, let us know, because we are ready or anxious to go ahead," Weeks testified that he would place the latest date approximately as midsummer 1931 (Rec. 794). With reference to the time that Weeks told Wisner that he should let the matter rest until there was some intimation that the War Department wanted something done, Weeks testified that shortly after he had telephoned Ramey, calling his attention to the fact that controlling works were not mentioned in the decree, Wisner came to see him, and it is quite probable that he said that to him at the time, which would be in April, May or June, 1930 (Rec. 796).

Ramey testified that he personally assumed that the next move was up to the War Department (Rec. 657). In spite of this testimony, the Special Master has found that the cause of the delay in obtaining approval of the construction of controlling works is a total and inexcusable failure of the defendants to make an application to the Secretary of War for such approval. The Special Master concedes the personal objection of General Jadwin, Chief of Engineers, and Lieutenant Colonel Weeks, the Local U. S. Engineer, to controlling works while a diversion of 5,000 c.f.s. or over, plus domestic pumpage, was to continue (Rep. 9, 10, 14; Rec. 498). Reference is made by the Special Master to certain portions of the conferences between Col. Weeks and the representatives of the Sanitary District (Rep. 16-19) "for such extenuation, if any, as they furnish * * and not as furnishing any justification" (Rep. 18).

It is stated by the Special Master that, "at no time in the discussions with the engineers of the Sanitary District did Lieutenant Colonel Weeks attempt to commit the War Department or intimate what might be the attitude of his superiors" (Rep. 18). Col. Weeks tes-

tified that he indicated his personal views (Rec. 487, 496). But there is nothing in the record to sustain the Master's conclusion that Col. Weeks did not intimate that his attitude was the attitude of his superiors. Col. Weeks was the local representative of the War Department and he made all these statements that have been referred to in the course of his duties. Unless there was an express qualification, the Sanitary District was justified in believing that Col. Weeks spoke for the Department, and when he said the matter of controlling works could be dropped with propriety for the time being, the Sanitary District had a right to assume that Col. Weeks was speaking in his representative capacity.

The attitude of General Jadwin, Chief of Engineers, was well known. The former Special Master summarized his testimony in part as follows:

> "As to new controlling works to prevent reversals of the river, General Jadwin at first stated that if there was a large diversion it was doubtful whether such works would be needed; that with a very small diversion the necessity becomes more pressing; that he did not know whether they were necessary with a diversion of 7,250 c.f.s. and that of 5,000 later; that the matter was under discussion. Subsequently, after full consideration in the War Department, General Jadwin made a formal statement on the subject of controlling works. He then said that with average annual diversions greater than about 6,000 c.f.s. *controlling works placed near the head of the Drainage Canal,* that is, at or near its northern or eastern terminus, *would add but little to the effectiveness already obtained* by the control at Lockport, the western terminus of the main channel of the Drainage Canal, where the present control is maintained by sluice gates and dams. He said, further, that *controlling*

works located at the mouth of the Chicago River would involve a serious interference with navigation; that a control gate there located would not be necessary until the diversion was 'so low as to require its frequent operation', and, under such conditions, the closure of the river by the gate would be an unwarranted obstruction, and that if an effective control at the mouth of the river consisted of a lock with sluices, it would cause such delay and inconvenience that it would merit approval only as a last resort. General Jadwin's conclusion was that *the question of the control* of both the Chicago River and the Calumet River were *capable of practical solution, probably without any further control works,* with a total annual average diversion of 5,000 c.f.s." (Italics ours.) (Re-ref. 103).

General Jadwin, in a prepared statement submitted to the former Special Master, said:

"The conclusion as to the general question is that *the need for further control works is not yet established.*

"Control works are not necessary in the interests of navigation. However and wherever constructed they would impose some delay and inconvenience upon navigation."

* * * * *

"From the standpoint of the protection of the water supply, it may be noted that the complete prevention of any reversal of flow into the lake is not now accomplished and is not essential. As the sewage purification progresses, the temporary amount of outflow which can be tolerated will increase. As the diversion is decreased, the difficulty of preventing considerable outflows will also increase. *It is not now considered possible to fix the exact limit of diversion at which the present control at Lockport will become unsatisfactory.* Recent experience with a reduced diversion to prevent

flood damage in the Illinois River indicates, however, that after the sewage purification has reached the practicable standard of efficiency, the present Lockport control may be found satisfactory with a total diversion as low at 5,000 c.f.s., annual average, and might possibly be satisfactory with a lower diversion." (Italics ours.) (Re-ref. 108-109).

* * * * *

"CALUMET RIVER.—This discussion has been directed to the specific question of control works for the Chicago River. It does not include the related question of satisfactory control of the Calumet River. Both questions are capable, however, of practical solution, *probably without any further control works,* with a total annual average diversion of 5,000 c.f.s.

"PRACTICAL SOLUTION.—In view of these circumstances, the practical solution, in witness' opinion is to systematically reduce the contaminations and the total diversion, observing the results obtained by the best operation of the present control at Lockport, and accumulating data on the behavior of the flow with this progessively decreasing diversion. *This procedure will demonstrate* in ample time *whether any control works are necessary,* and will furnish a correct basis for their design." (Italics ours.) (Re-ref. 116.)

There is no evidence whatever to the effect that Col. Weeks told the Sanitary District Engineers that he was giving them his personal opinions only. Col. Weeks testified that his mind was pretty well made up and he probably conveyed the impression to Mr. Ramey that the War Department was not interested at the time in the installation of controling works in the Chicago River. In some form of words he said that to Mr. Ramey (Rec. 487).

Notwithstanding the numerous conferences in which

the Sanitary District was persuaded, or at least advised by Col. Weeks not to take further action for the time being, the Special Master charges the Sanitary District with a total and inexcusable failure to make an application to the Secretary of War for approval of controlling works. This finding is based upon the premise that the initiative was put upon the Sanitary District because of the attitude of the Chief of Engineers, General Jadwin, as expressed to the Special Master in 1929, and because of the omission of a requirement for controlling works in the permit of December 31, 1929, issued by the Secretary of War for the diversion of water from Lake Michigan (Rep. 14). The Special Master states:

> "Consistently with General Jadwin's position announced on April 19, 1929, to the Special Master, as to the requirements of navigation and as to the requirements of the War Department in consequence, this permit [December 31, 1929] contained no condition that the Sanitary District must provide controlling works" (Rep. 14).
>
> "General Jadwin's statement left the matter on April 19, 1929 so that the Sanitary District did not want to build controlling works, the War Department requirement in the current permit [permit of March 3, 1925, which required submission of plans for controlling works] was gone, in effect, and the Chief of Engineers was of opinion that the protection of the Chicago water supply and beaches did not call for controlling works at least for the time being or until the diversion fell below 5,000 c.f.s.
>
> "The Sanitary District knew all this at the time. Therefore they knew that the War Department intended to do nothing more as to the several methods of control which had been considered, until the Sanitary District made another application" (Rep. 10).

> "The defendants regarded that old application as not officially but practically dead. One of the engineers for the Sanitary District [Ramey] so testified before me. The old application was dead" (Rep. 7).

The effect of the Special Master's finding necessarily renders purposeless the discussions between Col. Weeks and the Sanitary District Engineers. If the "old application" were dead, or if the parties regarded it as finally dead with the War Department, or if it was thought that the filing of an application was a necessary factor, the actions of Mr. Wisner in inquiring of Col. Weeks if he had heard anything from the War Department, and the action of Col. Weeks in advising Mr. Wisner to wait until the War Department had acted, would be without rime or reason and utterly inexplainable. Moreover, if it is proper to speak of the old application as being dead, it is obvious that Col. Weeks was of the opinion that the "old application" was not capable of being resurrected or revived for the time being, and he so advised the representatives of the Sanitary District. Col. Weeks led the Sanitary District to believe that further action would be futile until there was a change of attitude on the part of the War Department, which has not as yet appeared.

An examination of further testimony of Col. Weeks and of the permit of June 26, 1930, establishes conclusively that the War Department was still vitally interested, after the decree of April 21, 1930, in the matter of the entire sewage treatment program including controlling works, and that to secure action there was no greater necessity for the filing of an application than there was before the decree under the permit of March 3, 1925.

Section 6 of the permit of March 3, 1925, provided:

"That the Sanitary District shall submit for the approval of the Chief of Engineers and the Secretary of War plans for controlling works to prevent the discharge of the Chicago River into Lake Michigan in times of heavy storms. These works shall be constructed in accordance with the approved plans and shall be completed and ready for operation by July 1, 1929" (Rec. 42; Rep. 7).

Plans for a single-pontoon-gate at the mouth of the Chicago River were submitted in 1926 by the Sanitary District, which were revised in 1927 (Rep. 7). The documentary evidence showing in chronological order what was done by the Sanitary District and the War Department toward securing approval of controlling works (Rec. 35-121) shows that no application was ever filed with the Secretary of War or the War Department. The filing of an application was dispensed with obviously because the Sanitary District was ordered to submit plans. Col. Schultz testified in the former hearing (Re-ref. 105-106) that he did not know why these plans for the controlling works had not been approved, but they were for Works at the mouth of the River; that they were "not waiting for any move on the part of the Sanitary District." The Sanitary District complied with the condition of the permit of March 3, 1925, with respect to the filing of plans, and also complied with a later request for more plans in 1929, pursuant to which twelve designs or schemes were submitted by the Sanitary District to the District Engineer of Chicago (Rep. 8). It is manifest that up to this time an application was deemed unnecessary.

The permit of December 26, 1929, provided in part as follows:

"Whereas, The Supreme Court of the United States delivered an opinion January 14, 1929, rela-

tive to the said diversion, stating among other things that its 'decree should be so framed as to accord to the Sanitary District a reasonably practicable time within which to provide some other means of disposing of the sewage, reducing the diversion as the artificial disposition of the sewage increases from time to time, until it is entirely disposed of thereby;'

* * * * *

"And Whereas, the Special Master to whom the above mentioned litigation was referred has filed a report recommending a decree providing *inter alia* that the said Sanitary District be enjoined, on and after July 1, 1930 from diverting any waters from the Great Lakes water shed in excess of an annual average of 6500 cubic feet per second in addition to domestic pumpage, but the Supreme Court has not yet rendered its decree.

"Now Therefore, this is to certify that upon the recommendation of the Chief of Engineers, the Secretary of War under the provisions of the aforesaid statute and subject to the following conditions, hereby authorizes the said Sanitary District of Chicago to divert, through its main drainage canal and auxiliary channels, from Lake Michigan, an amount of water not to exceed an annual average of 7,250 cubic feet per second, or such lesser annual average diversion as will restrict the average annual flow measured at Lockport to 8,500 cubic feet per second until July 1, 1930, after which date the amount of diversion will be limited to an annual average of 6,500 cubic feet per second in addition to domestic pumpage."

* * *

"6. That action taken for the reduction of sewage discharge into the said Chicago River and the said diversion of water from Lake Michigan hereby authorized shall be under the supervision of the

United States District Engineer at Chicago, and under his direct control in times of flood on the Illinois and Des Plaines rivers.

* * * * * *

"8. That this permit, if not previously revoked or specifically extended, shall cease and be null and void on the effective date of the decree on the Master's report to be entered by the Supreme Court of the United States in the pending litigation referred to above" (Rec. 112-117).

The permit of June 26, 1930, contained the following provisions, among others:

"Whereas, The Sanitary District of Chicago, Illinois, was granted authority by the Secretary of War by an instrument dated December 31, 1929, to divert water through its main drainage canal and auxiliary channels from Lake Michigan, the said authority if not previously revoked or specifically extended to cease and be null and void on the effective date of the decree to be entered by the Supreme Court of the United States in the case of the *State of Wisconsin, et al., versus the State of Illinois and Sanitary District of Chicago;*

"And Whereas, On April 21, 1930, the Supreme Court of the United States entered a decree enjoining the State of Illinois and the Sanitary District of Chicago from diverting any of the waters of the Great Lakes-St. Lawrence System or Watershed excepting as specified in the said decree, *a copy of which is hereto attached and made a part of this instrument;*

"And Whereas, The said Sanitary District has applied for a continuation of authority to divert water from Lake Michigan;

"Now Therefore, this is to certify that upon the recommendation of the Chief of Engineers, the Secretary of War under the provisions of the afore-

said statute, and subject to the following conditions, hereby authorizes the said Sanitary District of Chicago to divert through its main drainage canal and auxiliary channels, waters from Lake Michigan, as specified in the said decree.

"The conditions to which the said diversions shall be subject are as follows":

* * *

"4. That action taken by the said Sanitary District for the reduction of sewage discharge into the said Chicago River shall be under the supervision of the United States District Engineer at Chicago, and the said diversion of water from Lake Michigan hereby authorized, shall also be under his supervision, and under his direct control in times of flood on the Illinois and Des Plaines rivers." (Italics ours.) (Rec. 117-120.)

It will be observed that in the permit of December 31, 1929, the War Department took cognizance of the report of the former Special Master and the opinion of this Court, *and that in the permit of June* 26, 1930, *the decree of this Court is expressly made a part of the instrument,* and that under both permits supervision over the action taken by the Sanitary District for the reduction of sewage discharge and the diversion of water is retained by the War Department. Col. Weeks testified that while the permit of March 3, 1925 was in effect, the question of the interest of the War Department and his interest as the official representative of the War Department was to see that the Sanitary District accepted the minimum requirement set out in the permit; that after the permit of December 31, 1929, he continued to check what the Sanitary District did and reported it under official direction (Rec. 707). Col. Weeks did not consider that the permit of June 26,

1930 set up any standard of progress, but he said, "*The decree provides on and after a certain date diversion will be reduced as to dates; the Department wishes to be advised as to whether or not that would be impossible*" (Rec. 708); that what he undertook to do under the permit of June 26, 1930, was to keep the Department advised as to what progress the Sanitary District was making on the sewage disposal program which had been laid down by the Special Master in the Supreme Court (Rec. 708). As a part of his duties he had discussions with officials or engineers of the Sanitary District with respect to the progress of construction and with respect to compliance with the terms of the permit. He was informed at all times of the status of the construction work during the time of his service in Chicago. Up to the time of his leaving Chicago he maintained the same supervision over all the Works of the Sanitary District (Rec. 481).

Representatives of the War Department never at any time after April 21, 1930, called the attention of the Sanitary District to any neglect or omission of duty under the permit of June 26, 1930 in connection with the construction of controlling works (Rec. 438), and the decree of April 21, 1930, was a part of this permit.

At the time that General Jadwin made his statement to the former Special Master on April 19, 1929, and at the time of the entry of the decree, the Chief of Engineers had before him the plans for a pontoon gate, as revised, submitted in 1926 and 1927 by the Sanitary District pursuant to the permit of March 3, 1925, and also had plans for twelve different methods of controlling works, some of them subdivisions of others, prepared by the Sanitary District and submitted to Col. Weeks, the United States District Engineer at Chicago, in connection with the study and report made

to the Chief of Engineers by Col. Weeks, and the Chief of Engineers also had five plans prepared in the office of the Local District Engineer and submitted with the same report on March 11, 1929. These plans represented every conceivable thought on the subject (Weeks, Rec. 499; Ramey, Rec. 415).

It was after a study of all possible designs, including Works at the head of the Sanitary Canal, that General Jadwin made his report. The fact that the War Department had passed unfavorably upon every possible scheme was not known to the Sanitary District at the time of the hearings before the former Special Master. The report of Col. Weeks under date of March 11, 1929, was not before the former Special Master (Rec. 649; Rep. 9).

Ramey testified that he knew that Col. Weeks made a report to the Chief of Engineers, but he never saw the report until it was introduced in the record in the hearings conducted by Special Master McClennen (Rec. 398). Col. Weeks testified that Wisner knew he had submitted a report and had incorporated in that report the plans submitted by the Sanitary District, but he did not know the character of the additions that Col. Weeks made because it was an official document, the contents of which Col. Weeks communicated to nobody (Rec. 793).

It was not until after the decree of April 21, 1930, that the futility of submitting further plans appeared. It developed that all possible plans had been considered and none had been approved during the time that the permit of March 3, 1925 was in effect, and which contained a requirement for controlling works.

Col. Weeks testified that in the making of an application for a permit there were two forms of procedure

in use in his office, one strictly official, and one informal which was adopted to save time and effort. In the informal method the applicant draws up his application, addressed to the Secretary of War, prepares his plans, and submits them to the Local Engineer. The Local Engineer then looks the plans over and gives them sufficient study; if in his opinion the plans can be bettered, or should be modified, in the interests of navigation, he calls in the applicant and they go over the plans together and finally they effect an agreement so that when the plans go forward to the Chief of Engineers from the Local District Engineer, they go forward with his favorable recommendation. If the plans decided upon by the District Engineer and the applicant are not satisfactory to the Chief of Engineers, they come back to the District Engineer with such instructions as he may see fit to give, looking to a modification of the plan (Rec. 770-771). For reasons which have been stated, the filing of an application addressed to the Secretary of War for the approval of controlling works was dispensed with under the permit of 1925, and was also unnecessary if the construction of controlling works was a requirement under the decree of April 21, 1930, which was incorporated in the permit of June 26, 1930. The former Special Master's recommendation did not call for the filing of an application, but merely for the submission of plans. There is no legislative requirement for the filing of an application. The Sanitary District, in the course of its contacts with the Local District Engineer of the War Department, took up the matter in a way that conditions dictated. The War Department had before it all possible designs; the Sanitary District Engineers discussed the matter with the Local District Engineer of the War Department, and inquired on numerous occasions about what, if anything, should be

done. All parties assumed, and rightfully so in the circumstances, that the "next move" was up to the War Department. The informal expressions of Col. Weeks properly were deemed sufficient.

The Special Master makes the suggestion that the Sanitary District could have submitted plans for (1) controlling works near the mouth of the River, consisting of a lock and sluices, or a combination of lock and gate instead of a single gate, or (2) controlling works about seven and one-half miles up the River near the northern or eastern head of the Sanitary Canal, (Re-ref. 112), as Col. Weeks had previously recommended in his report of March 11, 1929. But plans for such works were already before the War Department and had not received favorable consideration by the Chief of Engineers. The first plan mentioned was regarded as an unreasonable obstruction to navigation, and the second plan as not wholly effective (Re-ref. 110, 112, 114). Mr. Ramey testified that the proposition of control works in the upper part of the main channel was suggested by complainants, and that he was "not so sure that from a hydraulic standpoint it was demonstrated that they would be so much better than the present control works at Lockport that they would be selected in preference to control works at the mouth of the River" (Rec. 659-660). It follows, therefore, that the statement made by General Jadwin, and a similar statement by General Brown, "that the Department will consider any application for the approval of plans of controlling works, to be constructed by the Sanitary District or other agency, and may be expected to approve these plans, *if the works are shown to be necessary, to be effective, and to be the minimum detriment to navigation*" (Rep. 10), did not constitute an invitation to the Sanitary District to submit further plans until a scheme was devised to

meet with the requirements mentioned which all previous schemes had failed to do. Clearly, there was no greater reason for the Sanitary District to believe that the War Department would act more favorably or with greater leniency upon a re-submission of any of the plans after the decree of the Supreme Court which was incorporated in the permit of June 26, 1930, than it had acted toward the plans submitted when the War Department itself was searching for a design.

In addition to being effective and a minimum detriment to navigation, the War Department also makes the qualification that the Works must be shown to be necessary. The War Department was of the opinion that controlling works were not necessary until the diversion fell below 5,000 c.f.s. Under the decree of the Court a reduction to 5,000 c.f.s. was not to be made until the end of 1935. It is reasonable to suppose that the War Department, notwithstanding the apprehension expressed by the former Special Master, was of the opinion that to pass finally upon the question in 1930 would be unwise, inasmuch as the controlling works could be built in two seasons, and that this factor entered into the discouragement given to the Sanitary District with respect to pressing the matter at the time.

The ultimate necessity for controlling works was rendered more uncertain by the passage of the Rivers and Harbors Act of June 3, 1930, which we shall discuss under a separate heading.

Officials of the War Department have expressed the view that a flow of 5,000 c.f.s. should be held available for the through waterway from Lake Michigan to the Mississippi (Re-ref. 94-95). The Act of July 3, 1930 provides that,

> "as soon as practicable after the Illinois waterway [Utica to Lockport] shall have been completed

> in accordance with this Act, *the Secretary of War shall cause a study of the amount of water that will be required* as an annual average flow *to meet the needs of a commercially useful waterway as defined in said Senate document,* and shall, on or before January 31, 1938, report to the Congress the results of such study with his recommendations as to the minimum amount of such flow that will be required annually to meet the needs of such waterway and that will not substantially injure the existing navigation on the Great Lakes *to the end that Congress may take such action as it may deem advisable.*" (Italics ours.)

An intelligent design and the proper location of controlling works is necessarily dependent upon the flow allowed (Re-ref. 110-116). Ramey testified that they do not know the type of works that should be planned today (Rec. 407).

The ultimate diversion of 1,500 c.f.s. after 1938, specified in the decree of this Court, was allowed upon a consideration of the navigation needs of the Port of Chicago only; the question as to what diversion might be required for a through waterway was expressly excluded. The former Special Master said,

> "Under the opinion of this Court in the present suits, the question of the allowance of a diversion of water from Lake Michigan in the interest of a waterway to the Mississippi, is not deemed to be open to consideration. The Court found that Congress had not acted directly so as to authorize the diversion in question, * *" (Re-ref. 122).

Manifestly, the situation has been changed by the Act of July 3, 1930, and the passage of this Act might well have been one of the causes for the lack of action on the part of the War Department after the decree of April 21, 1930, in encouraging or giving approval to any of

the designs that it previously had under consideration. An intelligent opinion as to necessity, design and location cannot be given until the results of the study directed by Congress are known.

The Special Master in his report emphasizes the fact that the Sanitary District in its proposed findings made prior to the filing of the report on re-reference on December 17, 1929, provided that "The Sanitary District shall immediately submit plans to the Chief of Engineers or his representative for such works to be constructed at or near the mouth of the Chicago River, or at or near the northern or eastern terminus of the Main Drainage Canal, and that they shall be completed and in operation within a period of two years subsequent to the date of the Secretary of War's authorization under the statute" (Rep. 11).

The proposal of the Sanitary District was made when the permit of March 3, 1925, requiring controlling works, was still in effect. The former Special Master adopted the proposal. It was not known to him that all conceivable designs for controlling works had already failed to meet the approval of the War Department. He knew that the matter had been studied, but he did not know that the Sanitary District, as well as the War Department, had been unable to design controlling works which met the requirements of effectiveness without unreasonably interfering with navigation.

There is nothing to indicate that subsequently, when the briefs were filed in this Court on behalf of the Sanitary District, in which the submission of plans for controlling works was advocated, the representatives of the Sanitary District knew that all conceivable designs had met with disfavor, and that the filing of further plans would be fruitless. The contents of the report of Col. Weeks had not been disclosed.

The good intentions of the Sanitary District are established by the uncontroverted testimony that with or without controlling works the reduction to 5,000 feet will be accepted without danger if the large intercepting sewers along the main branch of the Chicago River, adjacent to Lake Michigan, are constructed (Rec. 449). Ramey testified, "We are designing the sewers along the main River so that they will take care of all the small rains, all but those ten major storms, so that we will have the main River full of clean water; and in the event that the War Department would never approve controlling works and that they would not be built, there will be clean water in times of reversal" (Rec. 449).

Ramey testified further, "If we could get our work done in accordance with Exhibit 22, so far as it provides for the work being done up to the end of 1935, I see no reason why the diversion should not be shut down to 5,000 c.f.s., even without controlling works, and we have assumed that that might happen. You will notice one thing, we have set up those West Side sewers all to be finished before 1935. [Now this is very important because] they are the sewers that intercept the sewage that flows into the main River and that portion of the Chicago River close to the Lake" (Rec. 450).

Again, "In the Engineering Department we have been working to adapt ourselves to a diversion of 5,000 c.f.s. after December 31, 1935; we have been working to that end, and have had no thought other than that the diversion would be reduced to 5,000 c.f.s. at the end of 1935" (Rec. 447).

Col. Weeks testified:

> "Assuming an average annual diversion of 5,000 c.f.s. it is my opinion that controlling works in the Chicago River would not be necessary. With that large flow in the Sanitary District Canal reversals

> can be controlled by the discharge of canal capacity at the time of heavy precipitation on the Chicago River watershed, and on the average annual basis during periods of settled weather, the diversion can be cut down so as to build up a credit of water in the lake, either to repay a draught that has been made or in anticipation of other draughts that may be made later" (Rec. 500-501).

We submit that the finding of the Special Master, charging the Sanitary District with a total and inexcusable failure to file an application for controlling works, and that the delay in the construction of controlling works is due to such failure to make an application, is contrary to all the evidence presented before the Special Master. The finding is based upon a misapprehension of the testimony and upon the contradicted, or at least unsupported assumption that an application would have resulted in the approval of controlling works by the War Department. To sustain this finding not only must all presumptions be resolved against the defendants, but the veracity of the witnesses must be challenged.

Moreover, the finding requires a conclusion that the War Department was a mere bystander and that the conferences between Col. Weeks and representatives of the Sanitary District were without purpose, a finding which is contrary to the testimony of Col. Weeks and repugnant to the permit of June 26, 1930, which made the decree of April 21, 1930, a part of the permit. As shown by the terms of the permit of December 31, 1929, the War Department was aware of the former Special Master's findings and of the opinion of this Court rendered on April 14, 1930.

Col. Weeks testified that the Sanitary District representatives co-operated with him always, willingly and to his entire satisfaction (Rec. 504-505).

With such a record, a finding that the cause of delay in the construction of controlling works is a total and inexcusable failure to file an application, when the filing of such an application was unnecessary and would have been futile, is clearly erroneous and should not be confirmed.

(b) The Sanitary District is not obliged by the terms of the decree to construct controlling works, and the opinion of this Court does not contemplate the necessity of such works unless the required reductions in diversion can not be made without controlling works; the decree and opinion have been so construed by the Sanitary District.

In order to subject the Sanitary District to a reproach for failing to make application to the Secretary of War for controlling works and proceeding with construction, it must be assumed that there was a duty to perform such acts. It is the contention of the Sanitary District that the decree imposed no such obligation and that if the Sanitary District has established that it has made proper provision for accepting a diversion of 5,000 c.f.s. at the end of 1935 without controlling works and that proper provision will be made, assuming available funds, to accept a diversion to 1,500 c.f.s. at the end of 1938, this Court, under its opinion and decree, is concerned with nothing more, and the Sanitary District should not be held delinquent for failure to carry out a suggested plan if the end sought is attainable otherwise.

The Special Master states the opinion of the Sanitary District engineers to be:

> "If the intercepting sewers parallel to the main Chicago River and to the North Branch of it are completed before December 31, 1935, in accordance with the program submitted to the Special Master in 1929, it will be safe to do without controlling works if the diversion of 5000 c.f.s. continues. * * *" (Rep. 6).

The Special Master then says:

> "I find that the engineers of the Sanitary District hold this opinion that Controlling Works are not necessary under the conditions stated. I make no finding as to the correctness of this opinion as I regard this question as not before me under the terms of the order of December 19, 1932 but as set at rest for the present inquiry by the findings of the Special Master in 1929" (Rep. 6).

The Special Master also makes the following observation:

> "The defendants argue now that the judgment of the Special Master in 1929, as to the need of controlling works was one of precaution and not of a final conviction that the hydraulics of the river absolutely required controlling works, and that in the present reference the Special Master has had the benefit of the opinions above described of the engineers of the Sanitary District. This is important, if it is my duty to reexamine the question, set at rest by the Special Master in 1929. If I ought to reexamine that question, I could not do it without hearing further evidence, as the parties were discouraged by me from going into the question as thoroughly as should be, if so serious a matter is to be reexamined" (Rep. 12).

As observed by the Special Master, the engineers of the Sanitary District testified that it is their present opinion that a diversion of 5,000 c.f.s. can be safely accepted upon a completion of the intercepting sewers along the main branch of the Chicago River adjacent to Lake Michigan without the installation of controlling works. They had not reached this conclusion in 1929. Since the controlling works can be built in two seasons, the War Department was undoubtedly justified in not pressing the matter of the controlling works in 1930, in view of the opinion of the engineers of this department

at that time that the controlling works were unnecessary until the diversion fell below 5,000 c.f.s. And, unless the decree required it, the Sanitary District was justified in not pressing the matter with the War Department after its officials, who had the responsibility, came to the same conclusion as that previously reached by the War Department. In these circumstances, it becomes necessary to ascertain the requirements of the decree.

The former Special Master, in his proposed form of decree (Re-ref. 146-149) did not specify any exact dates *for reductions in diversion.* He specified, however, certain dates for the completion of the several projects in the sewage construction program of the Sanitary District. With regard to controlling works, the former Special Master recommended that the decree provide as follows:

> "8. That subject to the approval of the Secretary of War upon the recommendation of the Chief of Engineers, pursuant to the applicable statute, controlling works shall be constructed by the Sanitary District of Chicago for the purpose of preventing reversals of the Chicago River at times of storm and the introduction of storm flow into Lake Michigan; that for this purpose the Sanitary District of Chicago shall forthwith submit plans for such works to the Chief of Engineers of the War Department; and that such controlling works shall be completed and placed in full operation by the Sanitary District of Chicago within two years after receiving the authorization of the Secretary of War.
>
> "9. That when such controlling works have been constructed and placed in operation, the defendants, the State of Illinois and the Sanitary District of Chicago, their employees and agents, and all persons assuming to act under the authority of either of them, be and they hereby are enjoined from diverting any of the waters of the Great Lakes-St. Lawrence system or watershed through the Chicago Drainage

Canal and its auxiliary channels or otherwise in excess of an annual average of 5,000 c.f.s. in addition to domestic pumpage.

"10. That after the installation of controlling works as above provided, and on the completion of all the sewage treatment works as outlined in the program proposed by the Sanitary District of Chicago, and *in the absence of competent action by Congress in relation to navigation lawfully imposing a different requirement,* the defendants the State of Illinois and the Sanitary District of Chicago, their employees and agents, and all persons assuming to act under the authority of either of them, be and they hereby are enjoined from diverting any of the waters of the Great Lakes-St. Lawrence system or watershed through the Chicago Drainage Canal and its auxiliary channels or otherwise in excess of an annual average of 1,500 c.f.s. in addition to domestic pumpage" (Italics ours) (Re-ref. 147-148).

Under the Master's form of decree, the reductions in diversion would take place upon the fulfillment of certain conditions precedent, for all of which dates were set except for controlling works, but the former Special Master did not recommend that final definite dates for reductions in diversion should be included in the decree. His reasons are stated in part as follows:

"It is recommended that the Court should retain jurisdiction as there are questions which it is impossible to dispose of at this time in full justice to the parties; as, for example, with respect to the extent to which the diversion of water from Lake Michigan by the Sanitary District may be reduced below 5,000 c.f.s., in addition to pumpage, after the installation of controlling works in the Chicago River and pending the completion of the sewage treatment works, and also with respect to any further or other provisions as to the diversion which may be found to be appropriate after the sewage treatment works

have been completed and *the results of their operation with respect to the effluent and the condition of the navigable waters have been observed.* As construction work will be conducted on a large scale for several years, and unforeseen contingencies may arise, it would also seem to be important that there should be opportunity for the parties to come before the Court at any time to obtain such further directions as the facts may warrant" (Italics ours) (Reref. 145).

Although the former Special Master suggested certain dates for the completion of each project and suggested that plans be submitted forthwith to the Chief of Engineers of the War Department for controlling works, he was of the belief that certain contingencies might intervene which would affect the reductions to be made in diversion and, therefore, did not specify precise dates for the reductions. He expressly stated "that the Court should retain jurisdiction as there are questions which it is impossible to dispose of at this time in full justice to the parties."

The Court, however, took the plan or proposed decree recommended by the former Special Master and turned it around. The decree entered on April 21, 1930, directed that reductions in diversion be made on certain dates but left the matter of meeting the required reductions to the Sanitary District. The dates specified for the reductions were based upon the former Special Master's findings as to when the sewage treatment works and appurtenances could be completed and the reductions accepted, but the Court did not consider it necessary to adopt these findings except insofar as the Court used them as a measure to determine the time to be allowed before the diversion could be safely reduced. In other words, the Court decided that the time recommended by the former Special Master for the completion of each project con-

stituted a sufficient allowance of time to enable the defendants to accept a reduction in diversion to 5,000 c.f.s. at the end of 1935 and a further reduction to 1,500 c.f.s. at the end of 1938 and entered a decree accordingly. But the Court did not order any particular construction work to be done by the Sanitary District inasmuch as the Court took the view that it was incumbent upon the Sanitary District to take whatever steps might be necessary to effect compliance with the decree. The burden of completing the necessary construction work was placed upon the Sanitary District without reference to detail on the part of the Court.

Mr. Justice Holmes said (281 U. S. 179, 197, 198):

> "The defendants have submitted their plans for the disposal of the sewage of Chicago in such a way as to diminish so far as possible the diversion of water from the Lake. In the main these plans are approved by the complainants. The master has given them a most thorough and conscientious examination. *But they are material only as bearing on the amount of diminution to be required from time to time and the times to be fixed for each step, and therefore we shall not repeat the examination*" (Italics ours).
>
> * * * * *
>
> "The master finds that, on and after July 1, 1930, the diversion of water from Lake Michigan should not be allowed to exceed an annual average of 6,500 cubic feet per second in addition to what is drawn for domestic uses. He finds that when the contemplated controlling works are constructed that are necessary for the purpose of preventing reversals of the Chicago River at times of storm and the introduction of storm flow into Lake Michigan, works that will require the approval of the Secretary of War and that the master finds should be completed and put in operation within two years after the approval

is given, and probably by December 31, 1935, the diversion should be limited to an annual average of 5,000 c.f.s. 'in addition to domestic pumpage.' *On this point we deal only with the amount and the time.* When the whole system for sewage treatment is complete and the *controlling works* installed he finds that the diversion should be cut down to an annual average of 1,500 c.f.s. in addition to domestic pumpage. This, he finds, should be accomplished on or before December 31, 1938; and the full operation of one of the contemplated works, the West Side Sewage Treatment Plant, which would permit a partial reduction of the diversion, is to be not later than December 31, 1935. These recommendations are subject to the appointment of a commission to supervise the work, or, better in our opinion, to the filing with the clerk of this Court, at stated periods, by the Sanitary District, of reports as to the progress of the work, at the coming in of which either party may make application to the Court for such action as may seem to be suitable. All action of the parties and the Court in this case will be subject, of course, to any order that Congress may make in pursuance of its constitutional powers and any modification that necessity may show should be made by this Court. *These recommendations we approve within the limits stated above, and they will be embodied in the decree.''* (Italics ours.)

The foregoing language indicates clearly that the Court was of the opinion that the former Special Master gave the Sanitary District sufficient time for the diminutions in diversion and that the diversion should be cut to 5,000 c.f.s. at the end of 1935 and to 1,500 c.f.s. at the end of 1938 *regardless of whether controlling works were constructed or not.* A careful reading of the opinion can lead to no other conclusion. The Court expressly stated that the plans of the Sanitary District were ''material only as bearing on the amount of diminution to be required from time to time and the times to be fixed for each step,

* * *'' and further, on the point of controlling works, the Court was dealing ''only with the amount [of the diversion] and the time'' and that the recommendations of the Special Master were approved within these limits.

Any possible uncertainty about this construction of the opinion is removed when we turn to the proposed form of decree appearing at the end of Mr. Justice Holmes' opinion [281 U. S. 179, 201] and also to the decree itself [281 U. S. 696]. The progressive dates for the diminution in diversion are stated definitely and with only one qualification, namely: ''Unless good cause be shown to the contrary.'' No suggestion is made as to an expected rate of progress in the sewage construction program and there is no reference whatsoever to controlling works in the decree. With regard to sewage treatment works, it is provided merely that the Sanitary District file with the Clerk of this Court semi-annually a report adequately setting forth ''the progress made in the construction of the *sewage treatment plants and appurtenances* outlined in the program as proposed by the Sanitary District of Chicago, and also setting forth the extent and effects of the operation of the sewage treatment plants, respectively, that shall have been placed in operation, and also the average diversion of water from Lake Michigan during the period from the entry of this decree down to the date of such report'' (281 U. S. 696, 697-698). The Special Master has found that ''It did not occur to the compiler of the reports, that he should include a statement of the abandonment of controlling works. Its non-inclusion was not with an intention to deceive'' (Rep. 36). Controlling works have not been abandoned as intimated by the Special Master in the sense of a permanent abandonment. We shall establish this fact under a subsequent heading.

Mr. Ramey testified:

''I think we always figured that sometime some-

thing would be done about controlling works, but we did not know what or when. Now, I think if we had figured that controlling works were not to be built, we would have dropped that out of the program or made some such suggestion * * *. I did not prepare those [reports], to make and include in them every statement of policy on the part of the Sanitary District. I wrote those reports, to conform to a certain provision of the decree, as I understood it" (Rec. 442-443).

"I do know that we always included these controlling works in the program; we did not think that we were not necessarily going to build them; we might build them; we put them in our estimate of cost" (Rec. 444).

It did not occur to Mr. Ramey that he should incorporate any statement in the reports to the effect that a situation had arisen which lead them to believe that they might never have to put in the controlling works but controlling works were carried in every report in the estimate of costs (Rec. 444).

It is almost superfluous to say that the opinion of the Court and the decree entered on April 21, 1930, transcended the report of the former Special Master insofar as the report was modified and that the Sanitary District was justified in looking to the opinion and the decree for the purpose of determining its course of duty.

Colonel Weeks testified that immediately upon the coming of a copy of the decree into his hands, he called Mr. Ramey. He had made a study and had before him a copy of the form of decree suggested by the former Special Master and was familiar with his suggestions. Colonel Weeks noticed when he read the decree that no reference had been made to the construction of the controlling works in the Chicago River and was somewhat surprised that it had not been included. He called Mr.

Ramey on the telephone and asked him if he had noticed the omission in the decree and Mr. Ramey said that he had noticed it (Rec. 482-483). The permit of June 26, 1930, was also discussed by Colonel Weeks and Mr. Ramey and the omission of controlling works was a subject of consideration; as Colonel Weeks recalled Mr. Ramey's remarks, the impression given by Mr. Ramey to Colonel Weeks was one of surprise. The permit of June 26, 1930, followed very closely the form of the decree (Rec. 484).

Mr. Ramey's testimony may be paraphrased as follows:

> "I did not read the Master's findings into the decree" (Rec. 661).
>
> "The fact that the decree did not make a positive statement as to what should be done in this regard lead to a certain amount of uncertainty. It did not create a doubt in my mind as to whether we were to go forward at all with controlling works. I did not know when anything would happen in connection with controlling works" (Rec. 662).
>
> "It is my impression that the decree provides that certain reductions in the diversion are to be made at certain times, and that the Sanitary District is expected to construct certain structures. It has not been my understanding that the exact schedule proposed in the report of the Chief Justice is an inflexible schedule, and subject to no change whatever in any detail, but that the Sanitary District shall carry out the sewage treatment construction schedule submitted by the Sanitary District in a reasonable manner, so far as it can, and I have assumed that irrespective of whether that was carried out or not, the decree would be enforced" Rec. 663-664).
>
> "I read the opinion. I did not understand what the reference to controlling works meant in con-

nection with the sentence 'we deal only with the amount and the time' and in reading over the opinion of the Court, I read this statement: 'That these provisions would be embodied in the decree.' I read the decree carefully to see if those specific provisions were embodied in the decree, and I thought they were not specifically mentioned in the decree. I do not know whether a recommendation of the Special Master or a finding that is not specifically set up in the decree, would be a part of the decree. I had in mind the finding of the Special Master in the original trial of this case recommending that the bill be dismissed" (Rec. 668).

"I am just telling you some of the things that ran through my mind when I read this decree, but I did take it that the Court meant what it said" (Rec. 669).

"I think it was the view of the Supreme Court that the diversion should be reduced to 5,000 feet on the December 31, 1935, even if no controlling works were put in the river" (Rec. 671).

As shown by testimony referred to elsewhere in our argument, the Sanitary District has made provision for a reduction of 5,000 c.f.s. at the end of 1935 without the installation of controlling works. Mr. Ramey's construction of the decree, in our judgment, is unassailable. The "things that ran through my [his] mind" when he read the decree cannot properly be characterized as a doubt about the meaning of the decree. In addition to his statement that he took it "that the Court meant what it said," Mr. Ramey testified:

"I thought we were not required to take any fur-
their steps and I do not know what further plans we could submit in view of the fact that we had submitted all of the plans and ideas that we could think of for the Chicago River" (Rec. 830).

"There is only one thing that we have been con-

sidering and that is a reduction in the diversion, and we have been working to the end that we will be prepared for those reductions" (Rec. 832).

"We endeavored at all times to comply with the requirements of the decree. The Sanitary District has at all times attempted in good faith to comply with the requirements of the decree of the Supreme Court" (Rec. 660).

In response to a question from the Special Master, Mr. Ramey testified:

"As I read it [the decree], I thought it did not require us to take any further steps. That is the reason that I did not go further" (Rec. 683).

Clearly, from the foregoing testimony if there were any doubts in Mr. Ramey's mind about the meaning of the decree, they were resolved positively against the construction that the decree required controlling works regardless of the necessity of such works.

The Master's finding (Rep. 18) that the Sanitary District "was not justified in lying back silently and unadvised, on any such doubt" and that it has not been shown that it resolved the doubt against the construction that the decree required controlling works is erroneous for two reasons: (1) The Sanitary District did not lie back silently and unadvised but immediately discussed the question with the Local District Engineer of the War Department after the decree and after the permit of June 26, 1930, which made the decree a part of the permit; (2) Mr. Ramey's testimony establishes that any doubt which might have existed was nothing more than a passing thought that ran through his mind and he was definitely of the opinion that the decree did not require controlling works unless they should become necessary to effect compliance with its terms.

We urge that the construction placed by the Sanitary

District upon the decree, according to the testimony of Mr. Ramey, was eminently proper and that the decree can be interpreted as requiring the construction of controlling works only if such works are necessary to accept the reductions in diversion which have been ordered.

The Special Master states that:

> "Soon after the decree was entered they [Colonel Weeks, Wisner and Ramey] discussed the significance of the absence from the decree, of reference to controlling works. None of the three wished for controlling works or regarded them as necessary, if a flow of 5000 c.f.s. plus domestic pumpage was to continue. Colonel Weeks desired to avoid any unnecessary impediment to navigation. The Rivers and Harbors Act of July 3, 1930 was imminent. The discussions were continued after it passed. The Sanitary District wished to save the expense of controlling works. In this fertile ground of desire, there sprang up a doubt as to whether the Sanitary District was under obligation to go forward with controlling works" (Rep. 17).

This statement is inaccurate in that it implies that the Sanitary District representatives, Mr. Wisner and Mr. Ramey, were of the opinion soon after the decree was entered that controlling works were not necessary with the flow of 5,000 c.f.s. There is nothing in the record to show when the Sanitary District came to this conclusion, but manifestly it was not until after the last expression of the Sanitary District to Col. Weeks indicating a willingness or readiness to go ahead with the controlling works, which was about midsummer of 1931 (Rec. 793-794). Moreover, it is apparent from the testimony that what has been termed a "doubt" by the Special Master on the part of the Sanitary District as to its duty did not spring up in a "fertile ground of desire" to save expenses. The question came up immediately upon a reading of the decree.

Inasmuch as controlling works were not regarded as an unqualified requirement of the Court and since there was no necessity for immediate action upon the entry of the decree because of the time intervening between 1930 and the end of 1935, the informal inquiries made by the Sanitary District of Colonel Weeks constituted due diligence.

When considered with the conclusion of the Sanitary District that there was no positive duty to construct controlling works unless necessary to effect compliance with the decree respecting reductions in diversion, the following testimony of Mr. Ramey shows the basis for further non-action:

> "Our failure to do more I think was due to the fact that we thought the attitude of the War Department might be that there need be no controlling works. I did not know what the War Department was going to do. I knew that they had issued a permit on December 31, 1929, and omitted any mention of controlling works, and I knew of the permit of June 26, 1930, which specified the diversion, or which authorized the diversion specified in the decree of the Supreme Court, but did not make any mention of controlling works. And shortly thereafter I knew of the Rivers and Harbors Act of July 3, 1930, which calls for a study of the situation in the Illinois Waterway, and I did not know what would happen. I do not know yet. We assumed that the Sanitary District might be called upon to build controlling works, but I think we assumed that the next move was up to the War Department. I personally assumed that" (Rec. 656-657).
>
> "If we could get our work done in accordance with Exhibit 22 so far as it provides for the work being done up to the end of 1935, I see no reason why the diversion should not be shut down to 5,000

c.f.s., even without Controlling Works, and we have assumed that that might happen" (Rec. 450).

In summary, controlling works are not a requirement of the decree unless necessary to insure safety in making the specified reductions. Because the reduction to 5,000 c.f.s. was not to be made until the end of 1935 and since the controlling works could be built in two seasons, there was no necessity for making an immediate application to the Secretary of War (assuming such formal application to be a condition precedent, which we deny) in 1930. Subsequently, it was determined that the reduction to 5,000 c.f.s. could be made without controlling works. Therefore, the defendants are not bound under the decree to construct controlling works in order to facilitate the reductions in diversion to be made at the end of 1935. The question of controlling works is an open one only insofar as the reduction to 1,500 c.f.s. at the end of 1938 is concerned.

(c) The Special Master misconstrues the effect of the Rivers and Harbors Act of July 3, 1930, which provides for a study to be made of the average annual flow that will be required to meet the needs of a commercially useful waterway between Lake Michigan and the Mississippi.

A determination of the amount of flow and consequent diversion required to maintain a commercially useful waterway between Lake Michigan and the Mississippi is not within the scope of the questions submitted in the present reference. The Special Master indicated that he did not consider the question of the flow necessary for navigation in the waterway between Lake Michigan and the Mississippi to be before him. Nevertheless, because the defendants have contended that the Rivers and Harbors Act of July 3, 1930 has made a change that may call for a review of the decree as to the ultimate amount of diversion to be permitted, the Special Master has at-

tempted to show that a diversion greater than 1,500 c.f.s. will not be required to maintain the waterway, and that Congress has in effect so directed. Since the Special Master has taken this view, which we contend is based upon an erroneous interpretation of the Rivers and Harbors Act of July 3, 1930 and certain documents in the record, it is incumbent upon us to explain our conception of the Rivers and Harbors Act and to state the reasons for our contention that the Special Master has misconstrued the Act of July 3, 1930 and evidence relating to the navigation requirements of the waterway. The Mississippi Valley States, as indicated by the former Special Master, have insisted upon the right to be heard on this question (Re-ref. 122).

The Rivers and Harbors Act of July 3, 1930, provides for an appropriation of $7,500,000 to complete the Waterway Project from Utica, on the Illinois River, to Lockport, following in general the line of the Illinois and Des Plaines rivers. This project is the final link in the through Waterway System from Lake Michigan to the Mississippi and is the so-called "Illinois Waterway."

The through Waterway System may be divided into three sections consisting roughly of (1) the Illinois River from Grafton, on the Mississippi, to Utica, on the Illinois River, called the "Lower Illinois River," for which Congress by the Act of January 21, 1927 (44 Stat., Pt. 2, 1013) provided a channel with least dimensions of nine feet in depth and two hundred feet in width; (2) the Illinois River from Utica to its junction with the Kankakee River and the Des Plaines River, the Des Plaines River from this junction to northern Joliet, and the Chicago Sanitary District Canal from northern Joliet to Lockport, called the "Illinois Waterway" (the Illinois River is formed by the confluence of the

Kankakee with the Des Plaines near Dresden Island, sixteen miles below Joliet and forty-four miles above Utica); and (3) the Chicago Sanitary District Canal from Lockport to the Chicago River, and the Chicago River to Lake Michigan, in these hearings referred to as the "Port of Chicago." A branch of this third section follows the Calumet-Sag Canal, the Little Calumet River, and the Calumet River to Lake Michigan.

Confusion has arisen because of the designation that has been given to the link between Utica and Lockport as the "Illinois Waterway." In analyzing or interpreting Congressional Acts and the various statements and reports of officials of the War Department, care must be taken to observe the distinction made between the Lower Illinois River (Grafton to Utica) and the so-called "Illinois Waterway" (Utica to Lockport).

The Special Master has failed to observe this distinction that has been made.

The Special Master states (Rep. 19):

> "The defendants claim in their Return (p. 30) and now persist in the claim that the Act of July 3, 1930 has made a change which may call for a review of the decree as to controlling works. This claim is not borne out by the Act."

We respectfully submit that the Special Master has erred in this conclusion and that the contention of the defendants is sound.

The Act of July 3, 1930 provides that:

> "Illinois River, Illinois, * * * the said project [Utica to Lockport] shall be so constructed as to require the smallest flow of water with which said project can be practically accomplished, in the development of a commercially useful waterway [i.e., the entire Illinois waterway system consisting of the three links above described]: *Provided,* That there is hereby authorized to be appropriated for this proj-

ect [Utica to Lockport] a sum not to exceed $7,500,000: *Provided further,* That the water authorized at Lockport, Illinois, by the decree of the Supreme Court of the United States, rendered April 21, 1930, and reported in volume 281, United States Reports, in Cases Numbered 7, 11, and 12, Original —October term, 1929, of Wisconsin and others against Illinois, and others, and Michigan against Illinois and others, and New York against Illinois and others, according to the opinion of the court in the cases reported as Wisconsin against Illinois, in volume 281, United States, page 179, is hereby authorized to be used for the navigation of said waterway [the entire system]: *Provided further, That as soon as practicable after the Illinois waterway shall have been completed in accordance with this Act, the Secretary of War shall cause a study of the amount of water that will be required as an annual average flow to meet the needs of a commercially useful waterway as defined in said Senate document, and shall, on or before January 31, 1938, report to the Congress the results of such study with his recommendations as to the minimum amount of such flow that will be required annually to meet the needs of such waterway and that will not substantially injure the existing navigation on the Great Lakes to the end that Congress may take such action as it may deem advisable''* (Rep. 20). (Italics ours.)

This Act also provides:

"Great Lakes connecting channels: The existing projects are hereby modified so as to provide a channel suitable for vessels of 24-foot draft when the ruling lake is at its datum plane, and including the construction of *compensation works,* as set forth in paragraphs 30, 31, 48, 67, 69, 70, 71, 76, and 77 of the report of the special board of engineers dated February 14, 1928, and submitted in House Document Numbered 253, Seventieth Congress, first session. The amount hereby authorized to be ex-

pended upon said channels is $29,266,000." (Italics ours.) (This section is not referred to by the Master.)

The Special Master makes the following statement:

> "There is no present Federal project requiring more diversion than the decree allows. There is no indication that Congress will hereafter allow a greater diversion. The provision of the Act for the smallest flow leaves no discretion to the Secretary of War to permit a larger diversion for this project. Congress has exercised its full authority directly, without leaving a part in the hands of the Secretary" (Rep. 27).

This statement is incorrect. The Federal project in the Lower Illinois River between Grafton and Utica, which was made a Federal project in 1927, and which is the longest part of the Waterway, has been dredged and has been provided with a certain number of locks so that a nine-foot channel can be maintained only with a diversion approximating 5,000 c.f.s. General Jadwin testified before the former Special Master as follows:

> "Congress said when they authorized this project, that they did not authorize diversion, but Congress had a scale of prices before it for getting nine feet with various flows, running from one to ten thousand, and it authorized the sum of money, three million and something, the maximum limit we could go to, and that maximum limit would call for a diversion of about 4,500 average c.f.s. Congress did not run the sum up to the larger sum that would have taken care of it with the 1,000, although Congress had that larger sum before them. Congress had the report and adopted it with certain figures. Congress has since called for a revision of that report and we are now working on the revision" (Re-ref. 124).

While it is true that opinions have been expressed to

the effect that satisfactory navigation can be secured in the "Illinois Waterway" (Utica to Lockport) with a flow of 1,000 c.f.s., the present situation is that a greater diversion is required for the Lower Illinois River, (as this project is now authorized by Congress) which is a part of the through Waterway, and no appropriation has been made for more dredging and the installation of a greater number of locks that would be required in case the diversion is reduced to 1,500 c.f.s.

This Court, in fixing 1,500 c.f.s. as the diversion to be allowed after 1938, considered only the needs of navigation in the Chicago River, as a part of the Port of Chicago. At that time the project between Utica and Lockport was not a Federal project. The former Special Master said:

> "Under the opinion of this Court in the present suits, the question of the allowance of a diversion of water from Lake Michigan in the interest of a waterway to the Mississippi is not deemed to be open to consideration. The Court found that Congress had not acted directly so as to authorize the diversion in question, and the Court referred to the declaration of Congress in the Rivers and Harbors Act of January 21, 1927 (44 Stat. 1013), providing for the improvement of the channel of the Illinois River, that nothing in the Act should be construed as authorizing any diversion of water from Lake Michigan. Accordingly, in dealing with the claims of the States intervening herein on the side of Illinois, the Court said that 'They really seek affirmatively to preserve the diversion from Lake Michigan in the interest of such navigation' (of the Mississippi) 'and interstate commerce though they have made no express prayer therefor. In our view of the permit of March 3, 1925, and in the absence of direct authority from Congress for a waterway from Lake Michigan to the Mississippi, they

show no rightful interest in the maintenance of the diversion' (278 U. S. 367, 420)" (Re-ref. 122).

"In considering the needs of navigation, this Court limited its statement to the requirements of navigation in the Chicago River as a part of the Port of Chicago" (Re-ref. 126).

Since the entire Waterway from Lake Michigan to the Mississippi has now become a Federal project, and since Congress has authorized a diversion for the Waterway, and if the War Department recommends a greater diversion than 1,500 c.f.s. for the Waterway, it is manifest that "good cause," as that term is used in the decree, will have intervened so that the decree may be modified to conform with the recommendation which will be made by the War Department.

The War Department, in making its recommendation, must consider the flotation needs or depth requirements of the Illinois River between Grafton and Utica, as well as the flotation and depth requirements between Utica and Lockport. The War Department must also consider the diversion that will be required to keep the water from being unreasonably offensive.

On this point General Jadwin testified on the former reference, as follows:

"It is therefore seen that it is not practicable to state at this time what the amount of diversion is that may be needed in the Chicago River to meet the requirements of navigation in the broad sense. It may be that the proper proviso would be flexible and enable the United States to secure the fullest benefits of the navigation possibilities of the inland river system of waterways in connection with the Great Lakes water system, when, and if such increases are indicated. Besides providing water necessary for adequate depths and widths of channels another requisite for navigation of the Illi-

nois River is that the water should not be unreasonably offensive. This matter has been studied by sanitary engineers employed by this Department. They made an elaborate study and advised that 4167 c.f.s. total flow measured at Lockport was the minimum total diversion necessary with the activated sludge method of sewage purification and with a 90% metering to prevent the occurrence of a nuisance in the Illinois and Des Plaines rivers and to permit fish life therein. There may be some room for argument as to this standard, but it seems certain that with too little water, the water will be so foul as to be a menace to the health of the workers upon vessels and at terminals. Certainly it is not possible to specify at this time the precise amount of water required to keep the waterway in a reasonably acceptable condition for navigation many years hence, with the growth of the city, changes in the sanitary art, and other developments not yet foreseen. The diversion eventually required can only be stated in round figures. To allow for contingencies, I have placed the eventual amount at 5,000 c.f.s. measured at Lockport.

"It therefore appears that the diversion required for navigation in the Chicago River proper may not be the controlling factor in fixing the ultimate diversion, but that the need of an Inland Waterway System when determined and defined by Congress, or, under its authority, by the Chief of Engineers and the Secretary of War, may prove to be greater than those for navigation in the Chicago River itself.

"In other words, although local navigation on the Chicago River may be safeguarded by a total diversion of about 3200 c.f.s. measured at Lockport, the through navigation between Chicago and the Mississippi system will require about 5000 c.f.s. to keep the water in the channels south of Chicago in acceptable condition with an as yet undetermined but possibly greater flow required for the mainten-

ance of adequate channel depths and widths" (Re-ref. 94-95).

* * *

"The discussion does not modify in any respect the statement heretofore made that an average diversion of 5,000 c.f.s. will be necessary to maintain navigation in the Illinois River, as contemplated by existing authority of Congress and under the plan of improvement now under way" (Re-ref. 109).

In support of our contention that the Federal project on the Illinois River below Utica now requires a greater diversion than 1,500 c.f.s., we direct attention to the following:

Statement of General Jadwin:

"The river and harbor act of 1927 which directed the existing project for the Illinois River specified that it did not authorize a diversion of water. The project directed by Congress provided specifically for a channel with a depth of 9 feet without specifying the manner in which this depth should be obtained. The report before Congress when the project was adopted provided for alternative plans, varying in cost with the amount of diversion, the cost generally increasing as the diversion decreased. The plans were designed to provide a channel of the requisite cross-section with diversions of varying amounts between 1,000 and 10,000 c.f.s. With the lesser flows the depth would be secured by dams and locks, with the greater flows by open channel dredging. A review of the project has since been directed by Congress.

"Questions have arisen as to possible changes that may be necessary in the project to handle navigation in the future.

"There has not been as yet an official determination by the Engineer Department, of its recommendation as to the best type of improvement of the Illinois River" (Re-ref. 93-94).

Statement of Major General Brown, May 16, 1930, paraphrased by Special Master McClennen:

> "It is my present judgment, as to the smallest flow of water that is necessary to develop a commercially useful waterway at this point, the indications are, with everything in view,—is that something like 5000 feet per second should be held available for that purpose" (Rep. 25).
>
> "*The project authorized by Congress about three years ago for the lower Illinois from Utica to Grafton was a 9-foot channel and the flow was 5,000 cubic feet per second and the dredging being done there was done with that end in view.* The development of a 9-foot channel in my judgment at the present time only requires a 1,000-foot diversion, under the conditions stated. A thousand cubic feet per second provides a 9-foot channel in the project that is now being executed on the lower Illinois from Utica to Grafton, with only one provision we would resort to complete channelization [canalization] of the Illinois River. *That would require some more expense, not very much more excavation. It would require locks and dams in large number, lots of things*" (Italics ours) (Rep. 26).

It appears from the statement of Major General Brown which is quoted at greater length in the Report of the Special Master (Rep. 25-27) that although, from the standpoint of water depth or flotation, 1,000 c.f.s. may be a sufficient diversion, this diversion might not be adequate to keep the water sufficiently clear or inoffensive to navigation. Also, that before it is possible to accept a diversion of 1,000 c.f.s., more locks and dams would be required as well as more excavation, for which an appropriation has not as yet been made.

Major General Brown (letter to Master McClennen, dated January 4, 1933):

> "Since the Illinois Waterway is not as yet fully

completed or in operation, the study directed is yet to be made. I may however advise you that it is the present attitude of the Department that the eventual reduction in the diversion from Lake Michigan provided in the decree of the Supreme Court *will entail the construction of certain locks and dams on the Illinois River* [i.e., Lower Illinois]. The Department is not however now prepared to furnish you with an authoritative report on this subject" (Italics ours) (Rep. 31).

Major General Brown (statement contained in letter dated May 10, 1930, and addressed to Senator Charles S. Deneen, Exhibit 30, page 266; Rec. 856):

"It is my impression that satisfactory navigation can be secured in the Illinois waterway between Lockport and Utica with a flow of 1,000 cubic feet per second.

"This flow would adequately provide for such lockage as the probable traffic will require. The waterway, however, has been designed as an 8-foot channel with a flow of not less than 4,167 cubic feet per second, and it is probable that additional locks might be required if the diversion from Lake Michigan be materially lessened. With the present diversion (8,500 cubic feet per second), a 9-foot channel is practicable.

"In the lower reach of the Illinois River the character of the improvement differs from that in the waterway section. This section will not be canalized, and the depth of water available in this section is to a great degree dependent upon the amount of diversion from Lake Michigan. Should the entire diversion be reduced to 1,000 cubic feet per second canalization will be necessary and control works with accompanying costs are necessary in inverse ratio to the quantity of diversion. Estimates proposed in 1915 range from about $5,000,000 for complete canalization, based on 1,000 cubic feet

per second diversion, to $1,000,000 if a flow of 10,000 cubic feet per second be allowed.

"I am not at all sure that the decree of the Supreme Court recently handed down in the suit concerning diversion between the Lake States and the Chicago Sanitary District, in which the ultimate diversion was placed at 1,500 cubic feet per second had anything whatever to do with the requirements of navigation. My opinion is that the decree of the Supreme Court was a limitation on the diversion as a means of sewage disposal, and was aimed at the authorities of the Sanitary District of Chicago and not at the interests of navigation or the powers of Congress in relation thereto.

"I am of the opinion that at this time no definite figure on the amount of diversion necessary for navigation should be stated and that future study of the completed waterway should be made to ascertain the quantity of water necessary for navigation. It is, therefore, recommended that any specified diversion be omitted from any authorizing legislation."

The former Special Master, on the original reference of this case, heard testimony regarding the effect of the diversion of water from Lake Michigan upon the Illinois River. His findings on this matter are as follows (First Rep. 119-122):

"Plans for what is called the Illinois waterway, which is under improvement by the State of Illinois, that is, on the upper Illinois River, from Lockport to Utica, about 61 miles, are based on a diversion from Lake Michigan of at least 4,167 c.f.s. The depth designed with such diversion is eight feet, with fourteen feet over the mitre sills of locks, for future improvement. With present diversion, the depth will be about nine feet. If the diversion were reduced materially below 4,167 c.f.s., it would necessitate radical changes in the design and location of

the locks, three of which are already either constructed or under construction, and increased outlays. Illinois has authorized the expenditure of $20,000,000 for the completion of the waterway, of which between $5,000,000 and $6,000,000 has been expended, or is payable under contracts. The Illinois waterway as planned will have a capacity of about 60,000,000 tons per annum. There is no adequate water supply for lockage, except by diversion from Lake Michigan. Other plans would involve prohibitive expense.

"The Chief of Engineers and the Secretary of War, in approving the plans for the waterway in 1920, stated that it was not to be understood as authorizing the diversion of water from Lake Michigan, but merely expressed approval so far as concerned the public right of navigation, and that the provision was without prejudice to the use by Illinois of such flow as might be existing in the Illinois and Des Plaines Rivers. The profile map accompanying the plans contains a notation that the water services shown were 'based on an assumed flow of 4,167 c.f.s., already approved, as a diversion from Lake Michigan, plus the normal flow from other sources in various pools'; that is, the assumption was of 6,000 c.f.s. flow, made up of 500 c.f.s. as an actual low water flow, 4,167 c.f.s. from Lake Michigan, and 1,395 c.f.s., as averaging the amount of Chicago's pumpage.

"Lower Illinois River.—The lower Illinois River, from Utica, to Grafton on the Mississippi (230 miles) is a shallow, sluggish stream, carrying from 500 to 1,000 c.f.s. of natural low water flow. In its natural state, it is inadequate for modern river navigation. The Federal project depth has been seven feet; but this could not have been maintained without at least 8,500 c.f.s. from Lake Michigan, which gives, in the lower Illinois, about four feet of the low water depth of seven feet. The Chicago diversion has increased the navigable capacity of

the river. This stretch of the river is adaptable to improvement as an open channel, but if there were no diversion at Chicago, a large amount of improvements and several locks and dams would have to be provided. The question appears to be largely one of cost" (First Rep. 120).

"In the Report of Major Putnam of April, 1924 (*supra*, p. 72), it is said:

> " 'There is no doubt but what navigation conditions have been improved by the diversion of water from Lake Michigan. Originally the low-water discharge at La Salle was in the neighborhood of 500 cubic feet per second, while at Grafton it was near 1,000 second-feet. The addition of over 8,000 cubic feet per second, while increasing the slope and the velocity slightly, produced a discharge of about 8500 cubic feet per second at La Salle and about 9,000 at Grafton. Depths throughout the entire stream were increased substantially as may be seen from the following table and as indicated by comparing the profiles in Plate VII:

Miles above Grafton	Name of Place	Increased depth with 8,000 cubic feet per second diversion
223.2	La Salle	5.0
88.6	Beardstown	2.2
0.0	Grafton	1.2

* * * * *

> " ' * * * Assuming that the existing 7-foot project based on a flow from Lake Michigan of 4,167 second-feet is completed, it will cost about $2,400,000 to provide a 9-foot channel between La Salle and Grafton with a flow of 5,000 cubic feet per second * * * (First Rep. 121-122).

"By the Act of January 21, 1927, 44 Stat., Pt. 2, 1013, Congress provided for the modification of the existing project for the Illinois River so as to pro-

vide a channel with least dimensions of nine feet in depth and 200 feet in width from the mouth to Utica.

"The complainants contend that if the water for lockage and navigation purposes of this waterway from Lake Michigan to the mouth of the Illinois River is or should be taken from the Great Lakes-St. Lawrence watershed, a diversion of less than 1,000 c.f.s. of water is sufficient to supply all the needs of navigation. *I am unable so to find. The needs of navigation on that waterway will depend upon the carrying out of plans already adopted and upon the ultimate decision of Congress with respect to water communication between Lake Michigan and the Mississippi River, the extent to which locks and dams are to be used or installed, that is, the character of the improvements and the amount which it is determined to expend*" (Italics ours). (First Rep. 122.)

Congress, by adopting the Act of July 3, 1930, which had the effect of extending the Federal project in the Lower Illinois River to connect with the Federal project in the Chicago River, and in providing for a study of the flow needed to make the complete waterway a commercially useful project, made no appropriation other than $7,500,000 to complete the section of waterway between Utica and Lockport. By its action Congress made no change in the project in the Lower Illinois River between Utica and Grafton (adopted in 1927 to be constructed for $3,500,000 to a depth of nine feet and with a diversion of about 5,000 c.f.s.) and this project still remains as originally adopted. The fact that this project in the Lower Illinois could be built to require only 1,000 c.f.s. for flotation, with the complete canalization of the Lower Illinois River, with more expense, more "locks and dams in large number, lots of things," as testified to by General Brown on May 16, 1930, *is no*

indication that Congress intends to change the present project to the more expensive and less useful project in the Lower Illinois. General Brown did not recommend any change in the Lower Illinois River project in 1930 and has not since.

The finding of the Special Master that upon the completion of the dredging and locks between Utica and Lockport, so as to require a diversion of only 1,500 c.f.s. for floation *in that project,* the War Department is *ipso facto* bound to find that 1,500 c.f.s. will be sufficient for a commercially useful waterway between Lake Michigan and the Mississippi, is clearly erroneous. The fact that a study of the question has been directed by Congress should be sufficient to negative the Master's conclusion, because, if he is right, such a study is not necessary.

Before leaving the subject of the Act of July 3, 1930, it should be noted, as shown by the Special Master's Report (page 21) that the Act provides for a preliminary examination and survey to be made of the Calumet River, Little Calumet River, Lake Calumet, and the Sag Channel, Illinois, with a view to providing a connection with, and terminal transfer harbors for, the waterway from Chicago to the Mississippi River, Chicago Harbor, Illinois, Calumet Harbor and River, Illinois and Indiana. The authorization of this survey contemplates the possibility of the Calumet route becoming the main artery of traffic in the waterway from Lake Michigan to the Mississippi River instead of the Chicago River. The report to be made under this authorization may show conclusively that the Army Engineers contemplate using the Calumet-Sag Channel instead of the Chicago River as the main course of the waterway. This may permit the construction of fixed bridges over the Chicago River, with suitable vertical clearances, in place of bascule

bridges. If this course is adopted, and fixed bridges are also constructed over the Calumet-Sag Channel, the water levels in the Chicago River, the Main Sanitary Canal, and the Calumet-Sag Channel necessary to allow sufficient clearances under the bridges, must be controlled so they will not rise above a certain height. The level of water in the Chicago River and the Main Sanitary Canal has a direct bearing on the level of the water in the Calumet-Sag Channel, because the waters join, and approval would not be given for controlling works at the mouth of the Chicago River which were not designed to facilitate prospective navigation through the Calumet-Sag Channel. It would be inadvisable to design controlling works until the ultimate navigation development of those channels has been determined.

The through waterway has been opened very recently, and the study of the amount of water required to meet the needs of a commercially useful waterway, as directed by Congress in the Act of July 3, 1930, may now be begun.

(d) The Special Master excluded evidence relating to the flow required to meet the needs of a commercially useful waterway between Lake Michigan and the Mississippi River; nevertheless, a finding is made on this point, on hearsay evidence, which is misinterpreted.

Objection was made on behalf of the complaining States against the introduction of any testimony relating to the flow or diversion of water required to meet the needs of the waterway between Lake Michigan and the Mississippi River which had become, in its entirety, a Federal Project by the Act of July 3, 1930. The Special Master excluded all evidence offered on this subject (Rec. 939-943). The Special Master's ruling was based upon the assumption that although the ultimate diversion of 1,500 c.f.s. allowed by the decree of this Court

was based upon the needs of navigation of the Chicago River as a part of the "Port of Chicago" only, the question of the flow ultimately to be required for the through waterway was not included within the scope of the questions referred to him. Irrespective of the correctness of his understanding of the scope of the last reference and his ruling on this evidence, we believe that, since direct evidence on the question was excluded, the Special Master should not attempt to make a finding as to the minimum flow of water or diversion that will be required annually to meet the needs of the through waterway. As we have shown, the Special Master's finding in this respect is based upon the supposition that the minimum flow required by the Act of July 3, 1930, has already been demonstrated to be 1,500 c.f.s. or less and, therefore, Congress in prescribing a minimum flow circumscribed the study to be made so that the Secretary of War cannot recommend a flow of more than 1,500 c.f.s.; in other words, that Congress by the Act of July 3, 1930, in effect has already provided for a flow of 1,500 c.f.s. or less.

The Master states: "The provision of the Act for the smallest flow leaves no discretion to the Secretary of War to permit a larger diversion for *this Project.* Congress has exercised its full authority directly, without leaving a part in the hands of the Secretary" (Rep. 27) (Italics ours).

Our analysis of the evidence upon which the Master reaches this conclusion establishes (1) that for flotation purposes a flow of 1,000 c.f.s. may be sufficient for the Project between Utica and Lockport; (2) that the amount of flow required for the Project between Utica and Lockport, to keep the water sufficiently free from pollution for navigation, has not been determined; and (3) that the existing Project between Utica on the Illi-

nois River, and Grafton on the Mississippi River, has been developed so that it requires a greater diversion than 1,500 c.f.s. for flotation, and if additional dredging is undertaken and additional locks are constructed so that a flow of 1,500 c.f.s. may be adequate for flotation, no conclusion has been reached as to the amount of flow that will be required to keep this portion of the Illinois River sufficiently free of pollution to render the water suitable for navigation, so that navigation may be free, easy and unobstructed.

Complete treatment of sewage does not amount to 100% purification. With efficient operation the proposed sewage treatment plants should attain not less than an annual average of 85% purification of the sewage treated, and it is probable that the degree of purification will be 90% or more (Re-ref. 35).

Under this view, it is manifest that the Secretary of War has discretion under the Act of July 3, 1930, to determine the minimum amount of flow required for the waterway for navigation purposes and that the recommendation of the Secretary of War has not been predetermined.

(e) The Special Master improperly injects the proposed Canadian Treaty into the case.

The Special Master finds that the Act of July 3, 1930, furnishes no justification for the failure of the defendants to move for authorization of controlling works, and that a new reason to the contrary has now arisen, in the relations with the Dominion of Canada (Rep. 28).

If, as we contend, the defendants properly reached the conclusion that controlling works are not necessary with a diversion that does not fall below 5,000 c.f.s., and the Act of July 3, 1930 warranted a belief that under its provisions the diversion of 5,000 c.f.s., to go into

effect at the end of 1935, might continue after 1938, then the Act of July 3, 1930, did furnish a justification for not proceeding with the construction of controlling works. The proposed Canadian Treaty (Exhibit 13) has not, for the present at least, altered the situation. Furthermore, the contemplated provisions of the proposed Treaty were not made public until the Summer of 1932. It is improper, in our judgment, for the Special Master to speculate at this time upon the possibility of the proposed Canadian Treaty being ratified in its present form; and it is improper for him to ascribe any significance to the proposed form of the treaty, to the end that the defendants should proceed on the basis that the treaty will be ratified in its present form. The decree of April 21, 1930, in which the ultimate diversion of 1,500 c.f.s. was fixed, upon a consideration of only the navigation requirements of the Port of Chicago, has been used as the basis for a proposed provision in the treaty "that the diversion of water from the Great Lakes System, through the Chicago Drainage Canal, shall be reduced by December 31st, 1938 to the quantity permitted as of that date by the decree of the Supreme Court of the United States of April 21st, 1930" (Article VIII, Par. A., Rep. 29). If the Secretary of War should recommend, or if it should be otherwise established, that a diversion greater than 1,500 c.f.s. will be required to meet the needs of the commercially useful waterway, as provided in the Act of July 3, 1930, it is not to be assumed that Article VIII of the proposed treaty, as now drawn, will be permitted to stand.

The Special Master states (Rep. 28) that "It should not be anticipated that Congress will lower the level of Lake Michigan by diversion at Chicago, hereafter, in view of the possible unfriendliness of so doing to the Dominion of Canada." We fail to see any "possible

unfriendliness" toward Canada in case it should be demonstrated, and Congress should legislate accordingly, that a diversion greater than 1,500 c.f.s. will be required for the waterway from Lake Michigan to the Mississippi. Canada as well as the United States has been diverting water from the Great Lakes and it is to be assumed that there will be mutual deference to the needs of the other, on the part of both governments, as there has been in the past.

The former Special Master in his first report discusses the negotiations with Canada leading up to the existing Treaty of 1909, known as the Canadian Boundary Waters Treaty, which provided (Article V) that the United States might authorize the diversion within the State of New York of waters of the Niagara River above the falls, for *power* purposes, not exceeding in the aggregate, a daily diversion at the rate of 20,000 c.f.s., and that the United Kingdom by the Dominion of Canada or the Province of Ontario might authorize a diversion of said waters for *power* purposes, not exceeding a daily diversion at the rate of 36,000 c.f.s. (First Rep. 55).

In allowing the United States to divert but 20,000 c.f.s. for power while Canada was allowed 36,000 c.f.s. for power, Canada consented to leave out of the Treaty any reference to the Drainage Canal (Statement of Elihu Root, First Rep. 57-58).

Article VIII of the 1909 Boundary Waters Treaty provides that with reference to the use of boundary waters, the following order of precedence should be observed among the various uses enumerated in the Treaty for these waters: (1) uses for domestic and sanitary purposes; (2) uses for navigation, including the service of canals for the purposes of navigation; (3) uses for power and for navigation purposes (First Rep. 55).

On January 4, 1907, the International Waterways Commission (created pursuant to an Act of Congress of June 13, 1902, (32 Stat. 373), consisting of three members from United States and three from Canada), made a special report upon the Chicago Drainage Canal, which contained the following recommendations (First Rep. 48):

> "A careful consideration of all the circumstances leads us to the conclusion that the diversion of 10,000 cubic feet per second through the Chicago River will, with proper treatment of the sewage from areas now sparsely occupied, provide for all the population which will ever be tributary to that river, and that the amount named will therefore suffice for the sanitary purposes of the city for all time. Incidentally, it will provide for the largest navigable waterway from Lake Michigan to the Mississippi River which has been considered by Congress.
>
> "We therefore recommend that the Government of the United States prohibit the diversion of more than 10,000 cubic feet per second for the Chicago Drainage Canal" (First Rep. 48).

The first report of the former Special Master contains the following:

> "In a report to their Government on April 25, 1906, the Canadian members of this Commission recommended that a treaty should be negotiated between the United States and Great Britain, and with respect to the diversions from the Niagara River, the Commission was of opinion that not more than 36,000 c.f.s. should be allowed on the Canadian side and on the American side to the extent of 18,500 c.f.s., exclusive of the amount required for domestic uses; and it was said that, while this would give an apparent advantage to Canadian interests, it was 'more than counterbalanced by the complete diversion of 10,000 cubic feet by way of the Chicago

Drainage Canal to the Mississippi River.' The report stated that the Chicago diversion should be limited to that amount.

"The Joint Commission, by its report of May 3, 1906, made the following recommendations to the two Governments:

> " '3. The Commission, therefore, recommend that such diversions, exclusive of water required for domestic use or the service of locks in navigation canals, be limited on the Canadian side to 36,000 cubic feet per second, and on the United States side to 18,500 cubic feet per second, (and in addition thereto, a diversion for sanitary purposes not to exceed 10,000 cubic feet per second, be authorized for the Chicago drainage canal), and that a treaty or legislation be had limiting these diversions to the quantities mentioned' " (First Rep. 46).

In defining the boundary waters between Canada and the United States, Lake Michigan was excluded (First Rep. 52-53, 57-58), which accounts for the fact that the diversion from Lake Michigan was not mentioned in the 1909 Treaty, although allowance was made for the diversion in the negotiations.

Article V of the Boundary Waters Treaty of 1909, which provides for the respective diversions for power, contains the following clause: "The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for service of canals for the purposes of navigation."

Any objection that Canada might have to a diversion from Lake Michigan would be founded upon the effect of the diversion on the levels of the Great Lakes. The use of water for navigation and sanitation is given preference over the use of water for power in the Boundary Waters Treaty of 1909 (Art. VIII). The diversion of

36,000 c.f.s. allowed Canada under the Treaty of 1909 is for power purposes. This amount is not reduced by the proposed Great Lakes-St. Lawrence Waterway Treaty. Canada should not insist on a reduction of diversion to 1,500 c.f.s. from Lake Michigan for navigation and sanitary purposes, unless the study to be made by the Secretary of War under the Act of July 3, 1930, discloses that a greater diversion is not necessary in the interests of a commercially useful waterway, which is improbable.

Moreover, provision is made by the Act of July 3, 1930 (Rec. 1649) and in the proposed Great Lake-St. Lawrence Waterway Treaty to offset the effect of diversions, including the Chicago diversion, by the installation of compensating works in the Niagara and St. Clair Rivers. With an average annual diversion of 5,000 c.f.s., the levels of Lakes Michigan and Huron would be lowered less than six (about three and one-half) inches, and the levels of Lake Erie and Lake Ontario less than five (about three) inches. (First Rep. 105; Re-ref. 140). The provision in the Act of July 3, 1930, quoted above (page 51) includes the "construction of compensation works, as set forth in paragraphs * * * * 67, 69, 70, 71, 76 and 77 of the Report of the Special Board of Engineers, dated February 14, 1928, and submitted in House Document No. 253, Seventieth Congress, First Session. The amount hereby authorized to be expended upon said channels is $29,266,000." House Document No. 253 was introduced in evidence in the last reference as Exhibit 65.

The former Special Master stated: "From an engineering standpoint, the evidence shows it to be practicable to provide such works" (First Rep. 125).

The appropriation of Congress embraces compensating works in the Niagara and the St. Clair Rivers. The

cost of the works proposed in the Niagara River was estimated by the Joint Board of Engineers on St. Lawrence Waterway (United States and Canada), in its report of November 16, 1926, at about $700,000, and in the St. Clair River at $2,700,000 (First Rep. 129-130). General Pillsbury, Assistant Chief of Engineers, United States Army, on November 29, 1932, stated before the Senate Sub-committee of the Committee on Foreign Relations, that it would be practicable to construct compensating structures in the Niagara and St. Clair Rivers to take care of the diversion at Chicago up to 5,000 feet at a comparatively small cost (Page 340, St. Lawrence Waterway Hearings before a Sub-committee of the Committee on Foreign Relations, United States Senate, November 14th to December 3, 1932; introduced in evidence in last reference as Exhibit 29).

Sections 67 and 69 of the Report of the Special Board of Engineers, dated February 14, 1928, referred to in the Rivers and Harbors Act of July 3, 1930 (Rec. 1654; Exhibit 65, pp. 65-66) describe the compensating works for the Niagara River; the cost is estimated to be $700,000. The compensating works for the St. Clair River are described in Section 70 of the same Report (Rec. 1655; Exhibit 29, page 66), the estimated cost of which is there stated to be $2,700,000. An additional allowance of $200,000 is estimated for a 24-foot project in section 76 of this report (Exhibit 29, page 67), making the total estimate of cost of works in the St. Clair River $2,900,000. The total appropriation for compensating works in the Rivers and Harbors Act of July 3, 1930, was $3,600,000.

Article VIII, Section (e) of the proposed Great Lakes-St. Lawrence Deep Waterway Treaty, provides as follows with respect to compensating works:

"that compensation works in the Niagara and St.

Clair Rivers, designed to restore and maintain the lake levels to their natural range, shall be undertaken at the cost of the United States as regards compensation for the diversion through the Chicago Drainage Canal, and at the cost of Canada as regards the diversion for power purposes, other than power used in the operation of the Welland Canals; the compensation works shall be subject to adjustment and alteration from time to time as may be necessary, and as may be mutually agreed upon by the Governments, to meet any changes effected in accordance with the provisions of this Article in the water supply of the Great Lakes System above the said works, and the cost of such adjustment and alteration shall be borne by the Party effecting such change in water supply."

The Special Master (Rep. 34) refers to a table which contains data on the average low water flow of the Monongahela River, the Ohio River and the Panama Canal, and the amount of tonnage carried by these waterways. This table does not show any allowance for water stored during flood periods and used when needed. It merely shows the possibility of carrying a certain amount of tonnage over these waterways and certain minimum amounts of water available for lockage during average low water periods. It should not be construed as indicating that the tonnages shown were all carried on the low water flows as tabulated. None of these waterways is comparable with either the Illinois Waterway or the Lower Illinois River. The capacity of the locks (volume of water for filling same) is not comparable with locks on the Illinois Waterway, because the lifts are different. There is no pollution factor in the waterways named. There may be no more water available during low water periods in the rivers used as a basis of comparison; in determining the amount of flow required to meet the needs of a commercially use-

ful waterway between Lake Michigan and the Mississippi River, the Secretary of War must consider the pollution factor, and is given a choice of providing water for open river navigation without unnecessary locks and dams and with reasonably pure water, or slack water navigation with possible undue pollution.

(f) The Special Master construes erroneously the former opinions of this Court in these cases.

This Court has not decided that a diversion by the defendants from Lake Michigan in excess of 1,500 c.f.s. would be unlawful under all circumstances, but clearly indicates that this figure is subject to change by any order that Congress may make in pursuance of its constitutional powers, and any modification that necessity may show should be made by this Court (281 U. S. 179, 198-199).

Mr. Chief Justice Taft said (278 U. S. 367, 420): "And insofar as the prior diversion was not for the purpose of maintaining navigation in the Chicago River it was without any legal basis, because made for an inadmissible purpose."

Subsequently to the opinion written by Mr. Chief Justice Taft, the former Special Master, in determining the diversion necessary to maintain navigation in the Chicago River as a part of the Port of Chicago, fixed 1,500 c.f.s. as a proper diversion for this purpose (Re-ref. 126-140).

In his first report on the original reference the former Special Master said (First Rep. 122):

> "The complainants contend that if the water for lockage and navigation purposes of this waterway from Lake Michigan to the mouth of the Illinois River is or should be taken from the Great Lakes-St. Lawrence watershed, a diversion of less than 1,000 c.f.s. of water is sufficient to supply all the

needs of navigation. I am unable so to find. The *needs of navigation on that waterway will depend upon the carrying out of plans already adopted* and upon the ultimate decision of Congress with respect to water communication between Lake Michigan and the Mississippi River, the extent to which locks and dams are to be used or installed, that is, the character of the improvements and the amount which it is determined to expend" (Italics ours).

By the passage of the Rivers and Harbors Act of July 3, 1930, which had the effect of making the entire waterway a Federal project, Congress acted in pursuance of its constitutional powers, and in so exercising its jurisdiction over navigable waters it has added a new factor, namely, the waterway, which must be considered in determining the amount of diversion to be permitted for navigation. The scope of the inquiry is no longer limited to the navigation requirements of the Chicago River as a part of the Port of Chicago. If the waterway should require a diversion greater than 1,500 c.f.s. plus domestic pumpage, to maintain navigation in the Federal waterway, there is nothing in the opinions that have been rendered by this Court to prevent Congress from allowing a greater diversion, if needed to maintain navigation on the waterway. And if Congress should authorize a larger diversion for such purpose than is now permitted by the decree of this Court for the Chicago River as a part of the Port of Chicago, the decree would be superseded at least to that extent.

It is therefore erroneous for the Special Master to make the following statement:

"With this definite indication by Congress and with its knowledge that this Court has decided that any greater diversion invades the rights of the States of Wisconsin, Minnesota, Ohio, Pennsylvania, Michigan, and New York, and also causes them

> serious damage, it should not be anticipated that Congress, even if it has the power, is going to change its attitude and to continue to inflict that damage in order to save some dredging for which, in the judgment of the Chief of Engineers, the 'cost would be relatively small' " (Rep. 27).

This Court has not decided that a diversion greater than 1,500 c.f.s. invades the rights of the States mentioned. It has decided merely that a diversion of 1,500 c.f.s. is all that is required to maintain navigation in the Chicago River. Under the opinion a greater diversion may be allowed, if required to maintain navigation on the waterway from Lake Michigan to the Mississippi River. The statement of the Master is erroneous in two other respects: (1) there has been no definite indication by Congress as to what flow will be required to meet the needs of a commercially useful waterway, and (2) the quotation "cost would be relatively small" appears at the end of paragraph 12, page 11, of Senate Document 126 (Ex. 11) in the Report of the Board of Engineers for Rivers and Harbors, signed by Herbert Deakyne, Brigadier General. It refers to dredging between Utica and Lockport. To provide a nine-foot channel in the Lower Illinois River with a thousand-foot diversion would require more excavation "locks and dams in large number, lots of things" (Rep. 26-27).

The Special Master states further (Rep. 29): "After such a negotiation [referring to negotiations with Canada], and after this Court has decided that the diversion is damaging to the Great Lakes System, even if the treaty obligation does not ripen, it is not to be anticipated that Congress will authorize the damage."

Congress has full power to authorize any diversion necessary to maintain navigation on the new waterway

and its action in this respect is not circumscribed by any pronouncement that has been made relating to the navigation requirements of the Chicago River which has become a part of the waterway.

(g) The Special Master does not state with precision the present attitude of the Sanitary District.

The Master's report contains the following statements:

> "The District did not and does not want controlling works, until it is established that in its opinion they are necessary" (Rep. 8).
>
> "The defendants by their Return filed November 7, 1932, (p. 27) say in substance that nothing should now be done by them about controlling works and they persist in this contention. *They intend and propose to do nothing about controlling works* (Italics ours).
>
> "At the hearings in January and February, 1933, before me, the attitude of the Sanitary District was that they do not propose to do anything about controlling works unless the War Department deems it necessary, unless obliged to, in order to make compliance with the decree of this Court" (Rep. 35).
>
> "The defendants urge that nothing be done. *If no order is entered, nothing will be done and there will be no controlling works for years to come, if ever*" (Italics ours) (Rep. 37).

The finding of the Special Master that "if no order is entered, nothing will be done and there will be no controlling works for years to come, if ever" is true, insofar as it is modified by the previous statements of the Master on the same subject which are quoted above.

Controlling works are not a requirement of the decree unless necessary to render safe the reductions to be made in diversion. The Sanitary District does not con-

tend that anything may be omitted from its program which is "essential to an effective project" (See 278 U. S. 367, 421). But nothing is required by the decree of April 21, 1930 when construed with the opinion in 281 U. S. 179, or otherwise, beyond whatever is essential to an effective project which will enable the reductions in diversion to be made with safety. It is a sanitary and engineering problem for which the defendants have the responsibility and is not primarily a judicial question.

The Sanitary District engineers testified that controlling works are not necessary so long as a diversion of 5,000 c.f.s. continues, assuming the completion of intercepting sewers parallel to the Chicago River adjacent to Lake Michigan (Rep. p. 6, 12).

The War Department and the Sanitary District are now in accord on this question. The complaining States do not challenge this conclusion.

If the diversion is to be reduced below 5,000 c.f.s. after 1938 and if it appears that controlling works are necessary to keep Lake Michigan free from pollution and if the War Department will approve plans for controlling works, such works will be built, without any further order of this Court.

The Special Master also makes the following statements:

> "In the semi-annual reports filed with the Clerk of this Court, by the Sanitary District, nothing is said about the abandonment of the plan for immediate application for authorization of controlling works" (Rep. 35).
>
> "It did not occur to the compiler of the reports, that he should include a statement of the abandonment of controlling works. Its non-inclusion was not with an intention to deceive" (Rep. 36).

According to the testimony of Col. Weeks that has been referred to, Mr. Wisner asked him on several oc-

casions if he had heard anything from the War Department with respect to the plans that had been submitted (Rec. 792). There is nothing to indicate that the Sanitary District ever had in mind the submission of a formal application. Their proposal to the former Special Master merely included the submission of plans, and after the decree it developed that all conceivable plans, including twelve plans prepared by the Sanitary District and five plans prepared in the office of the Local U. S. District Engineer, had been studied and considered as unacceptable by the Chief of Engineers. There was no immediate abandonment of the proposal to submit plans. The defendants sought to show what Mr. Wisner was ready to go ahead with when he told Col. Weeks that the Sanitary District was ready or anxious to go ahead, but the evidence was excluded, apparently on the ground that it called for a conclusion (Rec. 804-809).

Upon receiving some indication from the War Department as to which of the schemes that had been submitted might be acceptable, the Sanitary District could then resubmit a plan for that scheme and file a formal application in case one were deemed necessary. For the time being no immediate action was necessary, because of the time intervening before the reduction to 5,000 c.f.s. was to take place, and the Sanitary District was left without any means of determining what design, if any, might meet the approval of the War Department, and was discouraged by Col. Weeks from submitting any design. In addition to the evidence already referred to, Mr. Ramey testified:

> "As to the submission of plans for works at the head of the main drainage canal, it would have been a futile thing to submit plans to the War Department for a structure in that canal, at least prior to the passage of the Act of July 3, 1930, and upon the passage of that Act of course we understood

that a study was to be made as to the amount of diversion which might ultimately be authorized by Congress for the Waterway. The War Department at that time was not assuming any jurisdiction over the drainage canal" (Rec. 831).

"If we were called upon to submit plans for controlling works at the mouth of the Chicago River I don't know what further plans we would submit other than the plans already submitted. Any additional plan would be a variation of one of those schemes. I think the field has been thoroughly covered" (Rec. 832-833).

"If the decree had incorporated all of the paragraphs that the Special Master recommended we would still have been in the position in which it was necessary to determine upon which plan we would submit in order to get an authorization. We would then have pressed the matter with the War Department and asked them which plan they wished to consider" (Rec. 682).

It is clear from the record, in our judgment, that there was no abandonment of the plan to construct controlling works to meet the reduction to 5,000 c.f.s. until it was decided that controlling works were not necessary with this diversion.

In each of the semi-annual reports controlling works are carried in the estimate of cost for future work.

In the chart completed in September, 1930, controlling works were carried as an item, but no time was appointed for their construction. With respect to the chart Mr. Ramey testified:

"There was no time set in this diagram [Exhibit 22] for the construction of control works, but in a supporting diagram I find that we had placed controlling works in the year 1935, that is, we had shown $4,000,000 in the year 1935. * * * That was just put down in that year. There was no time

shown as to when those works were to be built because there was a certain amount of uncertainty as to the controlling works" (Rec. 393).

"We put the controlling works in there but we did not put any time because we did not just know what was to be built and just when. Now that program, of course, was worked out to give the Board of Trustees a picture of the work so that they might arrange financing, and it is my understanding that they did make certain arrangements. * * * We set the time somewhere around, I think, 1935. That was the date of the reduction in the diversion to 5,000 cubic feet per second" (Rec. 406).

The Special Master states:

"This chart if followed meant that they [controlling works] would not be completed at the earliest before autumn of 1936, nearly a year behind the requirements of the Special Master's conclusions" (Rep. 19).

It is obvious, we believe, from Mr. Ramey's testimony, that it was not the purpose of the Sanitary District in carrying controlling works as of 1935, that the Sanitary District intended construction should be begun in that year. The question was an open one at the time of the preparation of the chart, with a possibility of construction under the chart before the end of 1935.

(h) The Special Master errs in adopting as a premise that the facts found by the former Special Master must be taken as unchangeable in this reference; he errs in ignoring the uncontroverted testimony that controlling works are not necessary with a diversion of 5,000 c.f.s. and he errs in his assumption that the former Special Master made a positive finding that controlling works are essential with such a diversion.

The Special Master makes a finding that the engineers of the Sanitary District hold the opinion that controlling works are not necessary and that it will be safe to do without controlling works if the diversion of 5,000 c.f.s.

continues, assuming that intercepting sewers parallel to the Chicago River adjacent to Lake Michigan are completed before December 31, 1935. Both Mr. Ramey and Mr. Pearse testified to this effect (Rec. 449, 450, 935,-937, 1710).

The former Special Master adopted a statement made by the complainants in their brief as follows:

> " 'It is agreed that the practicability of these further reductions' (after the initial reduction to 6,500 c.f.s., plus pumpage) 'during the construction of the program depends upon whether controlling works are installed to prevent the reversal of the Chicago River in time of storm or whether the hydraulics of the Chicago River and Drainage Canal will permit the prevention of reversal of the River with controlling works at Lockport. The witnesses for both sides agree that subsequent to December 31, 1929, no progressive reductions may be had in the diversion beyond the point where substantial reversals of the Chicago River are prevented' " (Re-ref. 107).

It was the judgment of the former Special Master in 1929 on the question of controlling works,

> "That there is no adequate basis, so far as the testimony on the hydraulics of the river and canal is concerned, for a finding that pending the completion of the sewage treatment program it would be proper *to require* a further reduction of the annual average direct diversion below 6,500 c.f.s. without the installation of new controlling works" (Re-ref. 107). (Italics ours.)

The former Special Master stated that,

> "On all the evidence, it does not seem to me that an *absolute requirement* would be justified *at this time* for a reduction in the diversion below 6,500 c.f.s. pending the completion of the sewage treatment works and without new controlling works" (Re-ref. 117). (Italics ours.)

The former Special Master stated further that,

> "* * * as the sanitary experts, even those of the complainants, have not been ready to testify to the feasibility of further reductions of the diversion without the installation of such works, that is, pending the completion of the sewage treatment program, I am of the opinion that such further reduction should not be required unless permission is given to install controlling works * * *" (Re-ref. 117-118).

We contend that the judgment of the former Special Master was one of precaution based on the fact that under the testimony he did not feel justified *in requiring* a reduction in diversion from 6,500 c.f.s. to 5,000 c.f.s. without controlling works. He did not make a conclusive finding that the hydraulics of the river absolutely required controlling works, but he did not feel justified in requiring a reduction without controlling works on the testimony before him. At that time General Jadwin had expressed his opinion that the diversion could be reduced to 5,000 c.f.s. without controlling works, but there was no other evidence to this effect. In the last hearing the Sanitary District engineers testified that they had reached the same conclusion as that which has been held by the War Department and no contradictory testimony was offered.

The Special Master states:

> "The defendants argue now that the judgment of the Special Master in 1929, as to the need of controlling works was one of precaution and not of a final conviction that the hydraulics of the river absolutely required controlling works, and that in the present reference the Special Master has had the benefit of the opinions above described of the engineers of the Sanitary District. This is important, if it is my duty to reexamine the question, set at

rest by the Special Master in 1929. If I ought to reexamine that question, I could not do it without hearing further evidence, as the parties were discouraged by me from going into the question as thoroughly as should be, if so serious a matter is to be reexamined. The behavior of the river in times of storm up to 1929, when the average diversion was 8500 c.f.s. or more, was before the Special Master in 1929. Since then there has been an opportunity to observe its behavior with an average diversion of 6500 c.f.s. There has been no opportunity to observe its behavior with an average diversion of 1500 c.f.s or of 5000 c.f.s. The opinions of the engineers of the Sanitary District given me are no more emphatic than that which Major General Jadwin gave to the Special Master in 1929" (Rep. 12.)

The Special Master justifies his action in ignoring the testimony offered and in discouraging further testimony on the ground that:

"The present inquiry has been made with the belief that both the law and the facts decided by the former two opinions and by the decree must be taken as unchangeable in this reference and that those found by the former Special Master should be so taken in orderly deference and with no responsibility therefor, on the present Special Master. The defendants claim that this is an error" (Rep. 4).

As we have indicated, the apprehension expressed by the former Special Master cannot be deemed a positive finding that controlling works are absolutely essential to permit a reduction to 5,000 c.f.s. At the time his apprehension was expressed, the Sanitary District, which had the responsibility, was not satisfied that a reduction to 5,000 c.f.s. could be made safely without controlling works. But the Special Master in the last hearing

was given assurance that the reduction to 5,000 c.f.s. could be safely accepted, and that the Sanitary District assumes that the reduction will be made at the end of 1935 regardless of the construction of controlling works.

Moreover, the hypothesis that the facts found on the former references must be taken as unchangeable in this reference, is one which should not have been adopted by the Special Master. In our judgment such a hypothesis is not required by the order of reference. Both the decree and the report of the former Special Master suggest the possibility and make allowance for change. To us it seems imperative that consideration should be given to all knowledge gained since the hearings in 1929. The facts disclosed in the hearings recently concluded, which were not before the Special Master in the prior hearings, and which have a bearing on the proper solution of the problems of the Sanitary District and the questions to be decided, should not be ignored.

The conclusions reached since 1929 by the Sanitary District Engineers concerning the hydraulics of the Chicago River, based upon the experience of the Sanitary District in preventing pollution of Lake Michigan due to reversals of the River, with an annual average flow of 6,500 c.f.s., are of vital importance in determining the steps that should be taken now with respect to controlling works.

The former Special Master expressly recognized the possibility of unforeseen obstacles arising and changes taking place (Re-ref. 142, 145, 146). From an engineering standpoint it is manifest that no program involving a project of such magnitude could possibly be inflexible. The estimates presented by the Sanitary District in 1929, and the Special Master's conclusion based on all the evidence then available, cannot be taken as an infallible guide as to what actually might develop as the most de-

sirable and feasible means of accomplishing compliance with the decree. The present inquiry as to "the steps which should now be taken to secure such approval and construction" of controlling works, includes an inquiry as to whether any steps should be taken *at all* at the present time, and requires that consideration be given to the defendants' uncontradicted testimony that controlling works are not a condition precedent to the reduction of diversion from 6,500 c.f.s. to 5,000 c.f.s.

(i) The recommendation of the Special Master that an injunctional order be added to the decree providing for an immediate application and submission of plans to the War Department and construction of controlling works under the direction of the State of Illinois should not be confirmed; there is no necessity for such an enlargement of the decree.

The decree provides:

> "That on and after December 31, 1935, unless good cause be shown to the contrary, the defendants, the State of Illinois and the Sanitary District of Chicago, * * * be and they hereby are enjoined from diverting any of the waters of the Great Lakes-St. Lawrence System or watershed through the Chicago Drainage Canal and its auxiliary channels or otherwise in excess of an annual average of 5,000 cubic feet per second in addition to domestic pumpage."
>
> * * *
>
> "That on and after December 31, 1938, unless good cause be shown to the contrary, the defendants, * * * be and they hereby are enjoined from diverting any of the waters of the Great Lakes-St. Lawrence System * * * in excess of the annual average of 1,500 cubic feet per second in addition to domestic pumpage" (281 U. S. 696-697).

The decree when read with the opinion of the Court contemplates the construction of all works necessary to render compliance possible with safety. Sew-

age treatment plants must be constructed so that the Chicago River, Drainage Canal, Des Plaines and Illinois Rivers will be free from undue pollution upon the effective dates for reductions in diversion, and if necessary, controlling works must be constructed under the decree so that Lake Michigan will be free from undue pollution. In the hearings before the present Special Master, witnesses for the Sanitary District evinced an intention on the part of the Sanitary District to comply with the decree in every respect. The conclusion has been reached by the Sanitary District Engineers that controlling works are not necessary so long as the diversion does not fall below 5,000 c.f.s. and that a reduction can be made to 5,000 c.f.s. with safety without controlling works (Rep. 6). The Sanitary District is prepared, upon the completion of the intercepting sewers along the main channel of the Chicago River adjacent to Lake Michigan, to accept the reduction to 5,000 c.f.s. without controlling works. Upon this determination by the Sanitary District involving a conclusion on an engineering and sanitation problem which is not challenged by the complaining States, this Court has been relieved of responsibility and the grounds for the apprehension of the former Special Master have been removed. If the provision of the decree, directing a reduction in diversion to 1,500 c.f.s. at the end of 1938, is not changed as a result of the study to be made by the Chief of Engineers under the Rivers and Harbors Act of July 3, 1930, and if it appears that controlling works are necessary to keep Lake Michigan free of pollution upon the completion of all sewage treatment projects, with a diversion of 1,500 c.f.s., controlling works will be designed and constructed, if the War Department approves, to meet the reduction. Compulsion will be unnecessary. If a diversion of 5,000 c.f.s. should continue

upon a direction from Congress based upon the study to be made by the Secretary of War, controlling works will be unnecessary for the purpose of preventing pollution of Lake Michigan.

Mr. Ramey testified:

> "In the Engineering Department we have been working to adapt ourselves to a diversion of 5,000 c.f.s. after December 31, 1935; we have been working to that end, and have had no thought other than that the diversion would be reduced to 5,000 c.f.s. at the end of 1935" (Rec. 447).
>
> "We endeavored at all times to comply with the requirements of the decree. The Sanitary District has at all times attempted in good faith to comply with the requirements of the decree of the Supreme Court" (Rec. 660).
>
> "It is my impression that the decree provides that certain reductions in the diversion are to be made at certain times, and that the Sanitary District is expected to construct certain structures. It has not been my understanding that the exact schedule proposed in the report of the Chief Justice is an inflexible schedule, and subject to no change whatever in any detail, but that the Sanitary District shall carry out the sewage treatment construction schedule submitted by the Sanitary District in a reasonable manner, so far as it can, and I have assumed that irrespective of whether that was carried out or not, the decree would be enforced" (Rec. 663-664).
>
> "It has been our assumption that those reductions would be made on that date, unless something happened to change the situation. In so far as the 1935 reduction is concerned we have assumed that nothing could happen to change it" (Rec. 664).
>
> "It is not my attitude that there will never be any definite action if it is necessary for the Sanitary District to take the initiative" (Rec. 675).

"There is only one thing that we have been considering and that is a reduction in the diversion, and we have been working to the end that we will be prepared for those reductions" (Rec. 832).

Mr. Pearse testified:

"In my opinion it is entirely practicable for the District to adapt itself to the cutting of the diversion at the end of 1935 to 5,000 second feet" (Rec. 935-936, 1710).

"My answers with reference to the advisability of the reductions to 5,000 second feet on December 31, 1935, are made on the assumption that there are no controlling works" (Rec. 1719).

Mr. Woodhull, chairman of the Finance Committee, testified:

"The engineering department had been instructed by the Board to put its program into shape and execute it as rapidly as they could and finish within the prescribed time, and we had confidence in their ability to do so" (Rec. 1137-1138).

"I do not know whether all the Trustees read the findings of the Chief Justice on re-reference. I know I did, and I presume most of them did, because they were all very anxious to perform * * * they knew what was in it. They knew that we had a job to do and wanted to do it" (Rec. 1281).

"I am of the opinion, and as the result of discussion, and if you want to say, some examination, that the program of the engineering department has been at all times consistent with the court order, or program, and that the only thing that has interfered with it has been the sanction, or difficulties, whatever they were, encountered in it, in lack of moneys" (Rec. 1284).

"We have a good engineering department, and we know that there has been no wilful delay, or they would not ignore it, and we have got a board which

is anxious to cooperate with that department, and there is no controversy between the engineering department and us, and there is no reason for delaying this work, except unsurmountable obstacles, and therefore, we are not apprehensive that the engineering department is going to ignore any phase of this program, and they are not apprehensive that we will make the money available as needed" (Rec. 1287).

"I will say that our instruction to the Engineering Department was to comply with the order of the court" (Rec. 1292).

We submit that there is no basis for the following statement made by the Special Master:

"It has become apparent that the proposed plan of the Sanitary District will not be carried out before 1936 at the earliest as to the controlling works or on time as to the intercepting sewers and treatment works unless there is a decree which makes progress possible" (Rep. 39).

The evidence is clear that there is an avowed purpose on the part of the Sanitary District to perform its obligations under the decree and to do all that is necessary to facilitate safety in making the specified reductions. No enlargement of the decree is necessary to define the duty of the defendants.

The question of enlarging the decree so as to place responsibility upon the State in order to finance the program, which we contend is unreasonable and unnecessary, will be considered in our discussion of the financial measures recommended by the Special Master. The legal aspects of this question are discussed in our brief on the law.

III.

Southwest Side Treatment Works.

(a) The program adopted by the Sanitary District allowed adequate time for the physical construction of the Southwest Side Treatment Works.

The Special Master finds (Rep. 50) as one of the causes of alleged delay in providing for the construction of the Southwest Side Treatment Works,

> "An inexcusable and planned postponement of the beginning of construction of these Works to January 1, 1935 which left an inadequate time for their completion before December 31, 1938, at the rate of progress expected or to be expected under the methods pursued by the Sanitary District * * *."

The evidence introduced in the last reference was all to the effect that the program adopted by the Sanitary District (Exhibit 22) was intended to be a reasonable program from the standpoint of financing and construction, which, if substantially followed, would enable the Sanitary District to accept the reductions in diversion as required by the decree. The work was laid out in an orderly manner to effect compliance with the decree. The dates recommended by the former Special Master for the beginning and completion of each project were not considered to be fixed and inflexible, and subject to no modification whatever.

The chart dated September 10, 1930 and introduced in evidence as Exhibit 22, provides for the physical construction of the Southwest Side Treatment Works to begin on January 1, 1935 which would leave four years for completion. The Special Master's finding that four years is an inadequate time is not based upon any evidence offered by the complaining States in the last reference, but is based upon what he regards to be the finding of the

former Special Master and which he assumes to be unchangeable and the only test of the efficacy of the program adopted by the Sanitary District.

In the former reference Mr. Herbert P. Linnell, a witness for the complainants testified that he was of the opinion that it would take four years from the award of the contract to complete the Southwest Side Plant (Re-Ref. 60). The former Special Master refers to Mr. Linnell's testimony in part, as follows:

> "In arriving at his opinion, which he called his 'firm opinion,' that the plant could be built in four years, he stated that he took into consideration availability of material and labor, and the time necessary for procuring plant and equipment. For shutdowns in winter and storm conditions, he provided practically twenty per cent. of twelve months or roughly two and a half months. He believed that the actual time in which the work could be done would be three or three and a quarter years. He stated that the four year limit included layoffs due to seasons, inclement weather; he gave no consideration to the five and a half day week that prevails in Chicago. All contingencies, 'due to inclement weather, winter weather, the five and a half day week and contingencies of a construction job' would be included in the twenty per cent. which he had allowed. He had not heard of a proposed rule providing for a five day week in Chicago, and he would not take that into consideration in arriving at the time of construction; that in his opinion would not make a difference in the computation of time but might affect the cost" (Re-ref. 61).
>
> * * *
>
> "He believed that if he had absolute specifications the maximum time for completion would be three and a half years. Actual detailed plans and specifications might make a difference of six months in his computation, but he did not think they would require

> a longer time than four years. He assumed that the Southwest Side plant would be substantially the same as the North and West Side plants. His time estimate included the turning of the completed plant over to the owner for acceptance and operation'' (Re-Ref. 63).

Another witness for the complaining States, W. J. Hunkin, testified that it was his opinion that the Southwest Side Sewage Treatment plant could be completed within fifteen hundred calendar days which he thought was a liberal estimate. In estimating fifteen hundred calendar days he allowed two hundred fifty days for Sundays and Holidays in the four years, two hundred days for lost time during the winter months and one hundred days for lost time during bad weather. In his fifteen hundred calendar days he had thus included five hundred and fifty days in which no work would be done. ''He believed'' that all projects, including sewage, could be completed within nine hundred fifty working days (Re-Ref. 64).

John C. Ruettinger, who testified that the defendants testified that if he would receive the contract to build the entire plant on January 1, 1930 it could be completed about October 1, 1937, a period of seven calendar years and nine months. He figured on one hundred seventy-one working days in a year as being available for excavating in open areas and pouring concrete for the tank construction. He said that this computation was arrived at

> ''by deducting four winter months'' (December to March inclusive), ''the Sundays in the remaining months, two days for rain in each working month, the half holidays on Saturdays and the regular holidays, making a total deduction of 194 days, which allows for no unusual conditions such as extraordinary rain, breakdown in transportation, strikes or jurisdictional disputes'' (Re-Ref. 66).

In discussing the testimony the former Special Master said:

> "One matter stands out prominently and accounts in considerable measure for the disparity in the estimates of time. That is the calculation of the number of working days in a calendar year. For the complainants, Mr. Linnell, in his estimate of four years for construction, allowed twenty per cent, or roughly two and a half months, for shutdowns in winter and storm conditions. Mr. Hunkin, in his estimate of fifteen hundred calendar days, assumed that there would be nine hundred and fifty working days in that period; that is, that there would be only five hundred and fifty days without work. Mr. Ruettinger, on the other hand, in his period of seven calendar years and nine months, figured on only one hundred and seventy-one working days in a year as permitting the prosecution of a very large part of the work which would consist of excavation and pouring concrete. * * * It seems to me that Mr. Ruettinger is too liberal in his deductions for lost time" (Re-Ref. 68).
>
> * * *
>
> "The other differences in the estimates of time, on the part of the building experts, relate to many technical details of construction which it would be impracticable to attempt to review in this report. They concern the time required to obtain and erect cableways so as to begin work, the rate of pour of the concrete for the tanks with cableways, and the question of the concurrent construction of different parts of the plant such as tanks and buildings. It is manifest that such matters easily permit of variations in calculations relating to a vast plant, the construction of which from any point of view must extend over several years. * * * *Common experience shows that works of magnitude, especially public works, admit of many delays which are not demonstrably due to neglect and that much depends on the vigor with*

which the work is pressed. Much time can be saved or lost in large building operations according to the attitude which is taken as to the importance of early completion. * * * I think, however, that the period of four years, or four years and thirty-nine days (1,500 calendar days) for such construction is too short to be laid down as a *definite requirement"* (Italics ours). (Re-ref. 69.)

In allowing a period of five and one-half calendar years for physical construction, the former Special Master stated:

"The requirement to be laid down, while demanding expedition, should be reasonable in all respects. *It should not fix what could be considered to be the shortest conceivable time* under highly favorable conditions of work, but should have regard to what may fairly be expected under average conditions without unjustified delay. * * * * My conclusion on all the evidence is that a reasonable allowance of time for the physical construction of the Southwest Side Treatment Plant, including tuning up, so that it would be ready for complete operation, would be a period of five and one-half calendar years. * * *

"Taking the time required for the preliminary steps that is, acquisition of site and preliminary studies, for preparation of plans and specifications for the securing of and passing upon bids, and for physical construction and tuning up, I conclude that the Southwest Side Sewage Treatment Plant, separately considered and assuming available funds, could be completed within eight calendar years." (Italics ours.) (Re-ref. 70.)

Clearly there is nothing in the findings or recommendations of the former Special Master which precludes the possibility of construction of the Southwest Side Treatment Works in four years, even though the former Special Master did not find that he could recommend a four-year construction period as a "definite requirement."

Upon the presentation of testimony in the last reference by Sanitary District engineers by which it was shown that substantially a four-year construction period for the Southwest Side Treatment Works was adopted by the Sanitary District and which was capable of accomplishment according to the testimony which was unchallenged by the complaining States, it is error, we contend for the Special Master to find the period prescribed to be inadequate.

Disregarding for the moment the presumptions which exist in favor of municipal action, the uncontradicted testimony as to the *necessary* time required for the construction of the Southwest Side Works, under the conditions which we shall mention, is sufficient to overcome any doubt which might arise concerning necessary time *required,* based upon the previous finding as to what time should be set as a *definite requirement* for completion of the Works. There is no inconsistency between the former Special Master's finding, as qualified by him and the testimony offered in the last reference. The complaining States offered no contradictory testimony. Under these circumstances we do not think it was within the province of the Special Master to make a finding contrary to the evidence upon a point not at issue.

Mr. Ramey, under whose direction Exhibit 22 was prepared, testified as follows:

> "Consideration was given as to the amount of time that would be required by the engineering organization to prepare plans and specifications for the various items in the sewage treatment program, for the amount of physical time which would be required by contractors to perform the work, for the amount of time that would be required to advertise for bids and to let the contracts, and consideration was given to the financial angle in that the work should be spread somewhat evenly over the eight

and one-half year construction period which had been allowed, to the end that not only could the work be carried out in the most reasonable and perhaps the most efficient manner, but the financing could be made in a reasonable manner. To this end the works were spread out over the eight year period so that there was a reasonably even distribution of cost for each year. The program called for a lesser expenditure the first five years of the period than in the last three years. That was because of the fact that in the latter part of the program we would be working on the larger plants, particularly at the Southwest Side Plant, and in that we presumed that the work would be let in larger units, the contracts larger and more money would be required (Rec. 377).

"This program was to be an elastic thing (Rec. 406-407). * * * *

"I knew that the decree provided for a reduction in diversion on December 31, 1935. I also knew that the Special Master found that certain sewage disposal works, with reasonable expedition, could be constructed and placed in operation on or before December 31, 1935. And I knew that there was a relation between the dates fixed for the reduction in diversion in 1935 and the extent of the construction of sewage disposal works, which the Master found could reasonably be accomplished on or before that date. The program was laid out with that in mind. And if you will examine that program carefully you will see that all the West Side sewers and all of the preliminary parts of the West Side Treatment Plant were to be finished by the end of 1933, and all that sewage would be taken out of the river, and that the work on the activated sludge portion of the treatment plant would be well on its way to completion. Some of that work, as indicated on the program, would have run over into 1936 (Rec. 543-544). * * *

"Our program for the Southwest Side Plant was

not adopted in conscious disregard of the finding of Mr. Chief Justice Hughes that two years and six months would be a reasonable time for preliminary steps. We did not adopt our program without any intention to comply with the findings and conclusions of the Special Master with respect to the time suggested for the acquisition of a site, the preparation of plans, and advertising and passing of bids for the Southwest Side Plant (Rec. 564). * * *

"We laid out this construction program as best we could to comply with the time set by the decree of the reduction in the diversion, and we laid it out in a way which would give a reasonably even distribution of the construction and of the cost over the eight-year period. Those were the considerations that we had in mind. I personally did not check back the chart to see whether or not it checked with the testimony given by the various experts in this case (Rec. 571).

"The 'additional work,' shown on page 2 of Exhibit 22, consists of needed sanitary improvements, but if any part of the work cannot be financed at the present time, obviously it is that type of work which should be deferred, and that is what we had in mind in showing the construction of those items in the latter part of the construction period (Rec. 576).

"It was not a consciously determined conclusion that we would not provide a program which would satisfy the decree (Rec. 577).

"We assumed that on December 31, 1935, the diversion would be reduced to 5,000 cubic feet per second. And we assumed that on January 1, 1939, the diversion would be reduced to 1500 cubic feet a second, unless good cause be shown to the contrary. We can see definitely ahead to the end of 1935. The thing we have principally in mind in that regard is that we will have by that time all of the sewers which parallel the river adjacent to

the lake, constructed. Our program calls for that. And we will take out of the river, except in times of heavy storms, all of the sewage that enters the river east of Halsted Street (Rec. 602-603).

"There is only one thing that we have been considering and that is a reduction in the diversion, and we have been working to the end that we will be prepared for those reductions (Rec. 832).

"The decision in making up the estimate was made by all the engineers who had to do with the construction. We had the total estimate from Exhibit 1387 which had been introduced in the case, so we used the figures in that estimate; then we had all of the heads of the various departments design division, such as mechanical engineer, structural engineer, sewage treatment engineer, architectural engineer, the electrical design engineer and the sewer design engineer, and we called in the field men who had been in charge of construction work; we determined just when we could get these various items designed, the field engineers gave the times as to how long it would take contractors to do the work, and the chart is the result of the study of all the engineers interested in making it out. It was to get a picture of the whole program so that we could readily see what we had to do from time to time, and give our trustees the picture of what they would have to finance (Rec. 391)."

Mr. Pearse testified as follows:

"The matter of beginning construction on the Southwest Side Plant in 1935 was discussed at the time the diagram was prepared, in the light of the variations in the testimony before the Master (Rec. 994).

"* * * as I surveyed the situation, it looked to me as though we could let work earlier than the program showed, but I regarded the time shown as the last

minute we could afford to get the work under construction (Rec. 994-995).

"I have explained that we discussed the whole situation with our men who were responsible for construction and design. We had reviewed this testimony and what the Master found, and we drew this conclusion, that as a minimum time that was the shortest we could show (Rec. 995).

"We discussed Mr. Ruettinger's opinion with the men who might have to build the plant, and we said 'What is the shortest time that it will take?' And we set this down as the shortest, bearing in mind that we hoped to get started on it earlier than this program showed (Rec. 996). * * *

"The main reason was to balance up the work there through the office and distribute the expenditures over the period (Rec. 996).

"It is my opinion that the program outlined on Exhibit 22 can be completed according to schedule if adequate financing is provided within the next few months (Rec. 1017). * * *

"I have not changed my views as to the possibility of progress on sewage construction work since I testified before Special Master Hughes. The opinion there given was based on the time that I thought would be reasonably possible to carry out, taking proper precautions in handling the work, and what a municipality would do, and taking into account some of the unknowns that might be forthcoming, and from what I have seen in the last three years, there were a good many unknowns that apparently were forthcoming. So that there may be no misconstruction, I testified to the Master that I had analyzed the situation on the yardstick of dollars, and I took into account the burden that I thought might properly be put on a municipality in estimating the rate of time (Rec. 1022-1023). * * *

"If funds become available within the next three

months or so, I think possibly all the plants and structures could be completed and placed in operation by December 31, 1938 (Rec. 1025). * * *

"Under pressure I think it can be accomplished if no work is done prior to June 1, 1933 (Rec. 1677-1678).

"Assuming that adequate financing is provided by June 1, 1933, and keeping in mind the present status of design and construction work, it is my belief that with reasonable expedition it would be an up-hill proposition to complete the whole program shown on Exhibit 22 and place it in operation on or before December 31, 1938. The chances would be against the completion of everything on Exhibit 22 by the end of 1938. It would be possible, by some pressure, to go on forced draft and possibly complete the work by the end of 1938 (Rec. 1680). * * *

"I would say that with those things done there will be no difficulty in the way of dropping to 5,000 c. f. s., with additional pumpage, at the end of 1935. The necessary sewer program to accomplish the reduction can be completed without forced draft if financing is promptly available. The forced draft situation relates to the pushing of the treatment part of the program" (Rec. 1718-1719).

On the question of distribution of costs referred to by the Special Master (Rep. 55) Mr. Ramey testified that the works were spread out over the eight-year period so that there was a reasonably even distribution of cost. The program called for a lesser expenditure per year during the first five years of the period than in the last three years because of the fact that the latter part of the program involved larger plants and the work would be let in larger units. The contracts would be larger and more money would be required (Rec. 377).

In further explanation Mr. Ramey said:

> "With regard to the distribution of expenditures which appears to be heavier in the latter years, we started more slowly because we were working on the Calumet plant first and the items that go to make up that Calumet plant are less expensive than the similar items at the West Side and Southwest Side plants. For instance, at the Calumet plant those aeration tanks cost about $2,400,000. Similar aeration tanks, but larger, are estimated at the West Side plant to cost about $10,000,000 (chart shows over $13,000,000 for aeration and final settling tanks), and at the Southwest Side to cost about $16,000,000 (chart shows a little over $9,000,000). The same thing applied to the other units of the plants and the contracts would be let in larger units, or rather, the work would be let in larger contracts on the Southwest Side project. Of the $31,000,000 that is shown for 1938, there is an item of $14,700,000 which is called "Total Additional Work." That includes the Oak Park Intercepting Sewer, the Howard Street Intercepting Sewer, the California Intercepting Sewer, and Blue Island Intercepting Sewer. Those items were put in the year 1938 because they were not as essential as the sewage treatment project proper. They were sanitary improvements which, if anything had to be omitted from the program or delayed, those items could be postponed with less harm than any others" (Rec. 393).

The former Special Master had contemplated that the West Side Works should be completed by the end of 1935, and that the Southwest Side Works would be started in the latter part of the year 1933, allowing five and one-half years for the construction of the Southwest Side Works. The chart (Exhibit 22) showed the completion of all of the West Side Works by the end of 1936, and the beginning of physical construction on

the Southwest Side Works on January 1, 1931. Manifestly, there was some reason why the Sanitary District, in laying out a program in 1930, did not follow precisely the dates recommended by the former Special Master. The purpose in laying out the program was to finish the work in 1938, as suggested by the former Special Master.

The sewage treatment construction program was submitted to the Court in the hearings on re-reference in March, 1929. The program was outlined and estimated in Exhibit 1387. This exhibit summarized the sewage treatment construction program as of December 31, 1928.

Between the time of submission of this program to the former Special Master in March, 1929, and the time of filing of the Report of the former Special Master on December 17, 1929, a period of nine months had elapsed; by the date of the decree of the Supreme Court, April 21, 1930, a period of thirteen months had elapsed; and by the date of the preparation of Exhibit 22, namely, September 10, 1930, a period of eighteen months had elapsed.

In any construction program of this magnitude changes in detail are inevitable as time goes on.

From December 1928 to September 1929 there was an interruption in the financing of the sewage treatment construction program (Woodhull, Rec. 1109-1120), due to the failure to sell $27,000,000 of bonds in December 1928. There was a consequent interruption in construction until September 1929, when $10,650,000 of bonds were sold. (Rec. 1125.)

This interruption naturally has disarranged the construction schedule. In the entire trial of the case on re-reference and in the Report of the Special Master on Re-reference, the program as originally submitted in

March 1929 was followed. No consideration was given to changes which were taking place even during the trial of the case.

When a survey of the whole situation was begun in July 1930, culminating in the design, finance and construction schedule indicated on Exhibit 22 in September 1930, the situation had been changed regarding progress on the construction. The principal construction work during 1929 was taking place at the West Side Plant. (Compare Table 3, page 3, Semi-annual Report of July 1, 1930, and Defendants' Exhibit 1385, page 1 of the same Report), and the interruption of progress affected this plant the most. (See page 6, Semi-annual Report of July 1, 1930.)

So, when Exhibit 22 was prepared, the work on the Calumet project was laid out to conform to the date of completion indicated in the Report of the former Special Master, with smaller proportionate cost because of the smaller units. (Rec. 377, 408-409.)

But the work on the West Side Plant could not be shown for final completion on the date indicated by the former Special Master, namely, December 31, 1935, unless the contracts were grouped in an unreasonable way and perhaps an unworkable fashion. The work on the Southwest Side Plant is similar to that on the West Side Plant. The same engineering organization would have been carrying out the Southwest Side works both as to design and construction.

Hence, the explanation as to why the dates shown on Exhibit 22 for the completion of the West Side Plant and for the beginning of work on the Southwest Side Plant do not conform exactly to the dates indicated for these works in the Report of the former Special Master, is obviously because of the delay at the West Side works during 1929. This necessitated the crowding

of the construction on the Southwest Side Plant into a period of four years and the extending of a portion of the work on the West Side Plant into 1936. These were the only two items about which serious complaint had been made. It was the belief of the engineers of the Sanitary District that taking the whole program as it appeared in the summer of 1930, the schedule as laid out in Exhibit 22 was an honest effort to provide for the carrying out of the sewage construction program in the most reasonable and orderly fashion.

As shown by the testimony, it was the belief of the engineers of the Sanitary District that taking the whole program as it appeared in the summer of 1930, the schedule as laid out in Exhibit 22 represented the best effort of the Sanitary District to provide for the carrying out of the sewage construction program in the most reasonable and orderly fashion.

Moreover, as indicated by the return of the defendants filed October 10, 1932 (P. 26), by the testimony of Mr. Pearse and the finding of the Special Master, the sewage treatment projects may yet be completed, assuming available funds, notwithstanding the unanticipated delays, before December 31, 1938.

Mr. Pearse testified:

> "Assuming that the money is forthcoming and that the men are provided, I think we would make a fight to get the balance of the program, shown on Exhibit 22, completed by December 31, 1938, but it all depends on how promptly the money is provided. The best we can do is to try to get it done. I think that if it could be taken up immediately, I think it is very probable that it could be pushed, but it would mean a rate of work which would be higher than we have ever attempted" (Rec. 993).

The Special Master states:

> "It is only by the exercise of unusual diligence

that the time already lost to progress on the Southwest Side Treatment Works can be counteracted and the Works completed before December 31, 1938. *They can be completed by that date if the work of design and construction begins before July* 1, 1933, *and is pressed vigorously.*" (Italics ours.) (Rep. 59.)

(b) The opposition to the proposed Southwest Side site and the difficulties encountered in the digestion of sludge at the West Side plant justified the Sanitary District in conducting a research to discover a less obnoxious method of sludge disposal requiring less space, which has proved successful. No delay in the construction of the Southwest Side works or its equivalent is attributable to the alleged indecision in the selection of a site or an efficient substitute.

The Application filed by the complainant States on October 3, 1932 contains the following charge:

> "* * * The Sanitary District of Chicago had selected the site for this project as early as 1926. Although this project was known to be the controlling factor in the determination of the time within which complete sewage treatment could be provided, no steps were thereafter taken by the Sanitary District throughout this long litigation to acquire the site so selected. The Sanitary District of Chicago on the contrary complacently permitted the site so selected to be sub-divided. It then set forward such subdivision as an additional reason for delay. * * * So far as the reports filed with this Court show, the defendants have made no attempt to perform the decree in this important and controlling particular" (Application, pp. 10-11).

The report of the Special Master does not adequately state the extent of the opposition to the proposed site for the Southwest Side plant, the difficulties in the selection of another site, and the problem presented in the handling of sludge which necessitated a deviation from the program submitted to the former Special Master in 1929.

With respect to the acquisition of the proposed site the former Special Master said:

> "The Sanitary District has had in contemplation for this plant about six hundred acres lying to the south of the West Side plant and south of the main channel of the Drainage Canal. This location has been designated generally by the Sanitary District on its map, but the site has not yet been acquired" (Re-ref. 50).
>
> "* * * On taking up the question of acquiring the contemplated site for the Southwest Side Plant, it was found that the proposed tract had been subdivided for purposes of sale in lots and that there were many separate owners. The Sanitary District has considered another site in the same general location, but from a quarter to half a mile further west, and this project at the last hearing on this re-reference was under consideration by the engineers of the Sanitary District. This question can be determined promptly and there seems to be no reason why proceedings for purchase or condemnation should not go speedily forward." (Re-ref. 51.)

It appeared from the testimony in the last reference that the site referred to by the former Special Master as being in "the same general location, but from a quarter to a half a mile further west" was a site which overlapped the previously mentioned site. The major portion of the sites was identical, the only difference being that in one case the easterly boundary extended to Cicero Avenue and in the other case to LaVergne Avenue which is one quarter of a mile west of Cicero Avenue (Rec. 886).

An ordinance was passed on December 26, 1929 to acquire a site bounded on the east by LaVergne Avenue. The "ordinance map" showing the boundaries of the site was introduced in evidence as Exhibit 24 (Rec.

384), and the ordinance for the acquisition of the site was introduced in evidence as Exhibit 31 (Rec. 891).

The reason for the removal of the eastern boundary of the tract to be acquired, to LaVergne Avenue was that the cost of the frontage on Cicero Avenue was too great; Cicero Avenue was a through street and had business frontage (Rec. 897).

The site included 570 acres consisting of 2,400 separate parcels of subdivided property and 228 acres of unsubdivided property (Rec. 901, 1396).

After the passage of the ordinance the first step taken was by the Engineering Department to supply the Law Department with the necessary maps and plats so that they could proceed to obtain opinions of title. In January, 1930, arrangements were made with the Chicago Title and Trust Company and descriptions and maps were forwarded to them to be used in their work (Rec. 900, 1396). The opinions of title were completed on March 24, 1930 (Rec. 1397). At the time the opinions of title were ordered from the Chicago Title and Trust Company an appraisal of the properties was ordered from the Chicago Real Estate Board (Rec. 906-907, 1398).

It was found that a great many of the subdivided parts had been purchased on contract from the subdividers, while others were held under trust agreements by various banks and other organizations (Rec. 901, 1398). After getting opinions of title two investigators were delegated to go to the office of the subdivider for the purpose of ascertaining the names of the parties who were purchasing the property under contract. It was also necessary to go to the County Treasurer's office and find out the addresses of the people who the opinions indicated were the title holders, so that an offer could be made to them or service

obtained on them in a condemnation suit. The Chicago Title and Trust Company report showed only the person who held the title. The investigation in the office of the County Treasurer was also necessary in order to obtain the names of the people who were the beneficiaries under the trust agreements (Rec. 905-906, 1400). The search in the County Treasurer's office took two men several months (Rec. 1425).

In the meantime, conferences were held with the owners of the property; such owners as could be reached were informed of the contemplated purchase of the property and were advised to make no improvements upon it (Rec. 1407). The Board of Local Improvements was advised of the situation and was requested to permit no further improvements to be made on the property by special assessment (Rec. 1404). There were six subdivisions in the property covered by the ordinance, all of which existed prior to January 1, 1926 (Rec. 1408-1410).

Forms of pleadings were prepared for contemplated condemnation suits. Petitions for condemnation were not filed because of the opposition of the Board of Education, property owners, and others who were objecting to the acquisition of the site for the purpose intended (Rec. 1412). After the passage of the ordinance of December 26, 1929, opposition to the acquisition of the site developed from several sources (Rec. 907).

The Board of Education operated a school near the southern boundary of the proposed site (Rec. 899-900). The Board of Education also owned a section of land approximately one-half a mile distant which was operated and used as a Municipal airport (Rec. 899).

As a result of the character and seriousness of the objections, a Committee, consisting of three public spirited citizens, was selected by the Board of Trustees

of the Sanitary District to report on the relative merits of the site covered by the ordinance and an alternate site in Argo, some five and one-half miles away which had been proposed by certain objectors (Rec. 908-909). The committe reported in July, 1930 recommending that the ordinance site be purchased (Rec. 910).

The report of the committee created a storm of protest from citizens, the School Board, and others. Thereafter the Board of Trustees of the Sanitary District held public hearings commencing July 31, 1930 and ending August 22, 1930 in the Board rooms of the District (Rec. 910). Representatives from the School Board, from the Chicago & Alton Railroad, and from the Chicago Real Estate Board (Rec. 1171) attended, and sixteen witnesses were heard on behalf of the objectors, including four sanitary engineers, three of whom had previously testified before the former Special Master (Rec. 911). In addition to the complaint that the location of the sewage treatment works would establish a nuisance and render the property in the vicinity unfit for residential purposes, the objectors contended that the proposed site was unnecessary and that the West Side site was large enough for both works (Rep. 51). Messrs. Gascoigne, Townsend, and Howson testified to this effect (Rec. 911). They had previously appeared as witnesses for the complainant States in these causes.

The Trustees of the Sanitary District then became apprehensive. They did not want to go ahead and buy a piece of ground they did not need and the Sanitary District engineers, in the meantime, decided that they would go into the matter more exhaustively and do some experimental work (Rec. 1172).

The Trustees asked the engineers to recheck and be definite about the absolute necessity of the acquisition of the site (Rec. 1173). In the meantime, they were go-

ing ahead with the examination of titles. About $10,000 was spent in the preliminary steps. The Engineering Department was requested to look into the matter further and determine what could be done in the situation, both as to checking up on the availability of the site north of the channel, known as the West Side site, and as to such modifications as could be made in the plant being located south of the channel as proposed, which would remove the source of objections and reduce the area required, and the engineers were also asked to check up on the possibility of splitting the plant or its functions and utilizing perhaps a portion of the Argo site suggested (Rec. 920).

On August 15, 1930 the Sanitary District had prepared a lay-out for a combined plant to be located north of the channel on the present West Side site (Exhibit 34; Rec. 933, 1087). Both the West Side plant and the Southwest Side Plant were included in the lay-out but it necessitated the acquisition of about two hundred (200) acres contiguous to the western boundary of the West Side site (Rec. 1090, 1091). This lay-out contemplated sludge drying beds. In the opinion of the Sanitary District engineers the 501 acres of the West Side site would not furnish enough area for sludge drying beds for both plants and they believed 200 acres more should be acquired (Rec. 59, 1030).

A bond issue of $36,000,000 was under consideration and was to be presented to the electorate in February, 1931. Of this amount $3,100,000 was to be used to acquire a site for the Southwest Side Plant and to commence work on the Southwest Side project (Rec. 922, 1173; Semi-annual Report July 1, 1931, p. 6). There was so much opposition to the proposed site in the town of Stickney, and so many people involved in the controversy, and there being only one site covered by the ordi-

nance a question was raised concerning the advisability of submitting the bond proposition to the voters with the site ordinance of December 26, 1929 of record. On January 22, 1931, the ordinance of December 26, 1929 was repealed. The Trustees were also apprehensive of a question being raised as to whether the bonds would be confined to the purchase of the Southwest Side site described in the ordinance and felt that there was a greater probability of the bond issue being approved if the site ordinance were repealed (Rec. 1174).

One of the clauses in the preamble of the repealing ordinance (Exhibit 32) provides as follows:

> "*Whereas,* the Board of Trustees desires to leave open for further consideration the choice of a definite site for said Southwest Side Sewage Treatment Works and wishes to consider other possible sites therefor and does not wish to be limited to the site specified and described in said ordinance, now therefore,"

The Special Master indicates that the ordinance should not have been repealed until the Sanitary District had decided that the West Side site was adequate for both treatment works or that a better site was obtainable promptly (Rep. 52). The repeal of the ordinance in no way delayed the determination of the site. A new ordinance could be adopted at any time providing for a new site or readopting the old site without causing any delay whatsoever.

During this time the Sanitary District was having difficulty with the digestion of sludge at the West Side Plant. Mr. Pearse testified:

> "We have made a study in the first place of certain plant layouts, to see what could be done in lessening the area required south of the channel; that was from the standpoint, you might say, of plant design, and then, further, we entered into a line of

investigation of the treatment of sludge and its dewatering, which applied to the procedure at both the Southwest and the future procedure at the West Side Works. This came about from the fact that when we had started the original operation of the West Side Works considerable difficulty came about in the digestion of mixed sludge, the mixed activated and fresh sludge and the inability to bring the moisture content down to low enough percentage to meet the original designed requirements.

"In other words, we found that the moisture contained content would remain upwards of 94 per cent instead of dropping down to 87 or lower.

"This indicated that we had to investigate ways and means of digesting sludge to see if we could improve upon it and also to find other ways of handling these solids.

"When the first battery went into service in June of 1930, and the second battery went in, I think, some six months later, and confirmed our opinion that we had to investigate; as result we set up at the West Side first a couple of large steel digestion tanks for the purpose of having separate digestion controlled by heat in an endeavor to see if we could not reduce the moisture content and obtain more work out of a given capacity of digestion space.

"Those experiments were put under way. * * * They went into operation in 1931. We spent $197,000.00 on that work * * *. As we began to find that the moisture content was not appreciably different from that in our Imhoff Tanks, and having had in the meantime some complaint from neighboring property owners adjacent to the West Side Works of odors from the disposal of the sludge in our dump areas west of Harlem Avenue, we decided to look into a different train of investigation and eliminate, if possible, both the sludge drying beds and the digestion of the sludge, thereby if successful, simplify the processes, cutting out the neces-

sary tanks for digestion and cutting down the area required for sludge drying beds by their omission. We started, I think, in the late spring of 1931 on investigations first with vacuum filters, * * *. This work went along and was continued into the late spring of 1932.

"In the meantime, in, I think it was July of 1931, we took up first the question of incinerating the sludge, because we realized that first, solids filtered in the manner we proposed would have to be disposed of promptly in some very definite and final manner, otherwise decomposition might ensue in the cake.

"We first made incineration tests for a few days out at Maywood, in the dryer, we had in there, in our Des Plaines River Works; then we arranged for a cooperative test with the Whiting Company at Harvey and carried on an extended investigation of the burning of different kinds of sludge, with the result that we satisfied ourselves that with the heat units available in them, that the sludge could be burned with a minimum of additional fuel and that there was a possibility of carrying out what we desired, namely, the handling of the sludge directly from the settling tanks, with the addition of excess activated sludge, then dewatering, and incineration, but the results we had on a small scale led us to feel that on the size of the plant we would be called upon to put in service on the West Side and Southwest also, even the Calumet Works, that further investigation on a working basis was desirable.

"That led us to design and build the so-called twenty-four ton test plant * * *.

"We went ahead and that plant went into service early in August, 1932. It cost us approximately $147,000.00. We desired to operate it through four seasons to determine the variation of the sludge in its reactions to the chemicals used and the rates of filtration and also to determine the variations

in the heat units in the material and test out the working adequate capacity of the different devices.

"That work is still continuing." (Rec. 923-926.)

Mr. Pearse testified further:

"In my opinion this experimentation in the matter of incineration of sludge does not result in a delay in carrying out the construction program as shown in Exhibit 22. In the meantime, before that final decision is reached, the work is proceeding on the general details required to build up the combined layout for the West Side and Southwest Side plants.

"If the incineration method is adopted there will be an economy to the District in the construction cost, that is, the first cost will be less, and there will be economy in operating cost, and thereby in the total annual cost. There will also be an economy in the amount of space required, because the area required for future sludge beds at that particular location will be eliminated, and if so, its place taken by the relatively small space required for the machinery to carry out the process" (Rec. 935).

"We did not delay the acquiring of the Southwest Side site in order to make plans to put the whole thing north of the channel [location of West Side site]. At the time that we ran foul of the objections, and ran short of money, we were not in that hole in order to deliberately try to put the thing north of the channel, but we have come to the idea of putting it north of the channel through the development we have made in the interim.

"At the start, whatever delay there was in the acquisition of the Southwest Side site was not by reason of any experiments we were carrying on in connection with sewage disposal. Since the process that we worked out became more convincing to us, we have perhaps postponed going ahead with any-

thing south of the channel, in order to determine whether we cannot put the whole thing north of the channel. But at the start, in 1930, in the summer, we had no thought of postponing the acquiring of the site simply to make experiments." (Rec. 961.)

"As the matter began to develop, in the fall of 1931 and the early part of 1932, we realized that we might have a very good chance of putting the whole plant north of the channel."

* * *

"We have not proceeded upon the assumption that experimentation with a view to developing something new in the way of sewage disposal is an adequate ground for postponing performance under the decree. Under our program the construction of the Southwest Side Plant was to start in 1935, and we had no intent of postponing performance, if the money was forthcoming." (Rec. 962-963.)

"If I were confronted with the problem of beginning in a large way to go forward with these two plants on May 1, 1933, my opinion is that I would simply have to go ahead and take the incineration plan." (Rec. 1033-1034.)

Mr. Ramey testified that in all probability the Southwest Side plant will be constructed on the West Side site (Rec. 598). The question is practically settled (Rec. 597).

Mr. Woodhull testified:

"It is practically settled that the so-called Southwest Side plant will be built on the West Side area. I think there has been no formal action by the Board, but the sentiment, it is generally conceded. The Trustees have made inquiries to determine whether it is a practical program and they are satisfied that it can be carried out and they expect to

carry it out. The only thing that is worrying us is the money" (Rec. 1298-1299).

The record indicates that no delay has been caused by the investigation conducted by the Sanitary District; it has resulted in a reduction in cost, a reduction in space required and a reduction in time required for construction.

(c) The Sanitary District has proceeded with reasonable diligence in the design of the Southwest Side Treatment Works.

The record clearly shows a diligence in proceeding with the necessary planning, and that studies were made in the summer of 1930 at the time of the hearings before the Board of Trustees as to the location on the West Side site (Rec. 1086). Further studies were continued thereafter on different alternatives and possibilities (Rec. 920, 963, 1086). The West Side site was explored for a determination as to the character of the foundations available (Rec. 985, 986, 988). Other preliminary work included a field investigation of the packing house wastes and a determination now practically completed to show the effect on the design (as shown in the semi-annual reports) covering a full year of examination in the field. An extended survey was made of population figures based on the 1930 Census and the probable future population (Rec. 1582, 1699, 1700, 1714). A search was made into the water pumpage of the city by districts and the changes which may occur, as metering proceeds. The probable flow to the Southwest Side Treatment Works was determined for design purposes (Rec. 1707-1708).

The time that has been spent by the Sanitary District in experimenting with the disposal of sludge by de-watering and incineration has not been assigned by the

Sanitary District as a reason for delay in the ultimate completion of the Southwest Side Treatment Works. These experiments which have proved successful have not operated to cause any delay. Mr. Ramey testified that these experiments did not operate to arrest development on the whole treatment program and that they were not losing time because of the experiment but that they were slowed up by a lack of money (Rec. 600, 601).

Mr. Pearse testified that in his opinion the experimentation in the matter of incineration of sludge has not resulted in delay in carrying out the construction program (Rec. 935).

Mr. Ramey testified further that the present state of progress with respect to the Southwest Side Plant complies, to a reasonable extent, with the general finding of the former Special Master on page 70 of his report on Re-reference. Mr. Ramey stated:

> "We have done a considerable amount of preliminary work. We have made preliminary investigations; we have made studies; we have made preliminary layouts. I know we have enough information now to begin preparation of detailed contract plans" (Rec. 579, 641).
>
> "Some work has been done on plans for all of the sewers" (Rec. 642, 643).
>
> "The profile has been worked out on contracts 1, 2, 3, 4 and 5 (all the Southwest Side sewers), the sewer sizes have been determined but detailed plans have not yet been drawn" (Rec. 642, 643).

As stated by the Special Master, the Sanitary District, in May, 1932, prepared a plan for a layout of a combined West Side Works and Southwest Side Works on the present site of the West Side Works with an incineration plant substituted for sludge drying beds (Rep. 52; Ex. 33).

The Special Master concedes that in spite of the delay that has resulted because of a lack of funds, the construction work can still be completed if pressed vigorously by the end of 1938 (Rep. 59).

The Special Master refers to the investigation of Stockyards and Packingtown wastes as follows:

> "The other delays were so effective, that the halting search for information concerning these wastes has not delayed construction" (Rep. 57).

We submit that diligence has been shown in the search for this information. In the first report filed with the Court on July 1, 1930, this statement is made:

> "Meanwhile the Sanitary District of Chicago is proceeding with certain tests on the flow in the sewers leading from Packingtown and the Stock Yards in order to determine as accurately as possible under the circumstances the character and volume of most of these wastes" (Semi-Annual Report, July 1, 1930, p. 8).

In the Semi-Annual reports filed with the Court on January 1, 1931, and July 1, 1931, respectively, the statement is made that:

> "The Sanitary District is continuing the testing of flow from certain sewers leading from Packingtown and the Stock Yards" (Semi-Annual Report, January 1, 1931, p. 6; Semi-Annual Report, July 1, 1931, p. 6).

In the Semi-Annual report filed with the Court on January 1, 1932, appears the following statement:

> "The testing on certain sewers leading from Packingtown and the Stock Yards *has been completed* and the results are being studied" (Semi-Annual Report, January 1, 1932, p. 6).

The statement in the return of the defendants that good engineering practice required a check upon the

information obtained more than fifteen years ago regarding industrial wastes, both as to quantity and as to quality, stands unchallenged (Return 34).

Mr. Ramey testified:

> "We are not in the same situation as we were in 1929 with respect to the Southwest Side Plant. We have considerable more information as to the amount of sewage. We have had a check up on the amount of Stockyards wastes. We had studies made of the Southwest Side sewage, considerable work was done on that. I would say that we are in a much better position now to design that plant than we were four years ago" (Rec. 582).

We find nothing in the record to sustain the Master's finding that the alleged failure to proceed with reasonable diligence to prepare designs, plans and specifications for the Southwest Side Works, has been a contributing cause in the assumed delay in providing for the construction of the Southwest Side Treatment Works.

If money becomes available the works can be constructed and the entire program completed before the end of 1938, and the requirements of the decree will be met.

(d) The Special Master's recommendation concerning the Southwest Side Treatment Works should not be adopted; there is no necessity for a modification of the decree at this time.

The Special Master has recommended that an injunctional order be added to the decree enjoining the State of Illinois to provide the necessary money for, and, through the Sanitary District of Chicago or through some other instrumentality chosen by the State, forthwith to design and construct the Southwest Side Treatment Works as originally proposed, or a sufficient sub-

stitute, at a rate of progress that will result in the completion of the works and the beginning of their operation before December 31, 1938, barring unforeseen casualties. (Rep. 60.)

Passing the question of the reasonableness and necessity of entering an injunctional order specifically directing the State to undertake the work for financial reasons, which we shall discuss separately, there is no necessity for the addition of a paragraph to the decree consisting of a command to do certain specific things which the Sanitary District has undertaken to do and will do if funds become available.

The position of the Sanitary District with regard to the proposed recommendations is summarized by the Special Master in his report as follows:

> "The Sanitary District opposes an order to the State of Illinois to provide the necessary money and to construct the Southwest Side Treatment Works, on the alleged grounds that the obligation is not the State's and that the Sanitary District has determined to construct these works on the West Side site which it now owns and is prepared to construct these Works as soon as the necessary funds which the District is endeavoring to get are available, and ample time remains for this construction assuming that funds will be available and that a finding that the District will not obtain the necessary funds or will not construct these Works by December 31, 1938 is premature and unwarranted." (Rep. 61.)

If funds are not immediately forthcoming there is ample time to apply for an extension, either to this Court or to the Department of War, as the case may be, in the event that the study to be made by the War Department does not result in a continuation of the 5,000 c.f.s diversion after 1938. There is a possibility

that this diversion may continue and that there will be no compelling necessity to complete the Southwest Side Treatment Works or its equivalent before the end of 1938.

An enlargement of the decree is not required to define the duty of the defendants. No delay has occurred which will affect the ultimate completion of the works before the end of 1938, except the delay caused by a lack of money. The evidence does not disclose that there need be any apprehension on the part of this Court as to the diligence it may expect from the Sanitary District. On the contrary, the testimony to which we have referred indicates that this Court may anticipate that the Sanitary District will act with all possible speed in the performance of work necessary to effect compliance with the decree.

We respectfully submit that upon the showing that has been made of due diligence, under all the circumstances, the decree should not be modified at the present time even though, from the standpoint of future accomplishment with proper diligence, an apprehension might exist that the works will not be completed before the end of 1938. There is due time in which to ask for a modification of the decree if good cause requiring modification should intervene.

IV.

Reasonable and necessary financial measures to be taken to carry out the decree.

The Special Master has found that the Sanitary District is not responsible for its financial plight and that there is no reasonable financial measure that the Sanitary District can take which it is failing to take (Rec. 78, 82).

The latest estimate of the Sanitary District is that all the remaining work in the sewage treatment construction program will cost approximately $139,000,000 (Report 62). Exhibit 51 shows the exact figure to be $138,575.500 which includes the sum of $27,068,000 for the items shown on Exhibit 22 as "Additional Work." This figure for "Additional Work" is made up of the following items:

> Upper DesPlaines Intercepting Sewer, $4,025,000 (Exhibit 22, Sheet 2, Lines 53-56). This item is included in the figure of $19,699,000 for sewers under West Side project on Exhibit 51.
>
> Oak Park Intercepting Sewer, $3,500,000 (Exhibit 22, Sheet 2, Lines 57-60). This item is included in the figure of $19,699,000 for sewers under West Side project on Exhibit 51.
>
> Racine Avenue Pump Station, $4,000,000 (Exhibit 51. This appears as $4,968,000 in Exhibit 22, Sheet 2, lines 34-38).
>
> South Side sewers, $15,543,000 (Exhibit 51. This appears as $19,429,000 on Exhibit 22, Sheet 2, lines 39-52).

Mr. Ramey testified:

> "Now that additional work will not bring in any additional sewage to the treatment plants; it is a needed sanitary improvement, but if any part of the work can not be finished at the present time, obviously it is that type of work which should be deferred and that is what we had in mind in showing the construction of those items in the latter part of the construction period" (Rec. 576).

The significance of this testimony is that the additional work referred to is not a condition precedent to the reductions in diversion in 1935 and in 1938.

If financial considerations make it necessary, this $27,068,000 of "additional work" can be deferred until after 1938 without endangering the local water supply.

The work is essential to a complete sanitary program and must eventually be done. But if this work should be deferred for the present or postponed until after 1938, the total estimate for future work of $138,575,500 would be thereby reduced to $111,507,500; this latter figure may be taken as the maximum estimate of costs of essential sewage treatment works to be considered by this court in determining the financial requirements to effect compliance with the decree. The total amount of $111,507,500 includes an estimate of $3,200,000 for the construction of controlling works which may be found to be unnecessary. Another possible saving may be effected by the consolidation of the construction of the Southwest Side sewage treatment works and the West Side sewage treatment works on structures which are common to both plants. No account has as yet been taken of this possible saving, which may be a considerable amount. All this is in addition to the saving of $9,775,000 referred to by the Special Master (Rep. 62).

The only practical way for the Sanitary District to raise the money required is by the sale of bonds. In order to show the capacity of the Sanitary District to finance the sewage treatment construction program a financial tabulation was introduced in evidence. This tabulation, dated January 24, 1933, is set out in full in the report of the Special Master (p. 75). It was introduced in evidence as Exhibit No. 53 (Rec. 1216). On February 3, 1933, Mr. Ramey testified that he made a closer estimate and re-computed Exhibit No. 53, taking into account the interest on defaulted bonds and putting in the power contract at $18,850,000; he estimated that the liability under that contract would be reduced at an annual rate of $700,000 a year (Rec. 1785). The Special Master then stated: "This is borrowing power computation, now, and it takes the place of 53, so that 53 can be ignored" (Rec. 1785). The latter computation was introduced in evidence as Exhibit 73 (Rec.

1786). Notwithstanding the substitution of Exhibit 73 for Exhibit 53, the Special Master in his report refers only to Exhibit 53 and ignores Exhibit 73. The difference between Exhibit 53 and Exhibit 73 is in three items: (1) Exhibit 73 includes an item of $5,442,900 for interest on defaulted bonds, omitted from Exhibit 53; (2) the liability under the electric power contract is estimated at $18,850,000 instead of the round figure of $19,000,000 appearing in Exhibit 53; (3) the increase in debt incurring capacity accruing from the annual reduction in the liability under the power contract is figured at the rate of $700,000 per year or a total of $4,200,000 in Exhibit 73, as against an old estimate of $500,000 or a total of $3,000,000 as used in Exhibit 53.

In explanation of the adoption of the figure of $700,000 in Exhibit 73 instead of $500,000 as was used in Exhibit 53 for the annual liability under the power contract, Mr. Ramey testified:

> "The reduction each year was estimated then at an arbitrary figure, and about $500,000 has been used in computations by the Sanitary District in * * * reducing that liability to get a figure to use in advertisement for bonds; the amount paid for this figure in 1932 was about $700,000 and this is the amount that is appropriated in 1933" (Rec. 1783).

The Special Master comments with some skepticism upon the reduction of the liability under the electric power contract from $29,108,523, an amount previously used, to $19,000,000 (Rep. 67, 68, 69). Mr. Ramey fully explained the reason for making the reduction and the method of arriving at the figure of $18,850,000. The revised figure was based on actual operating experience of the Sanitary District as distinguished from the arbitrary figure estimated (1929) before any power was used under this contract. Mr. Ramey's testimony on this point is as follows:

"Now, our experience in operating the North Side Treatment Plant since July, 1930, indicated a much less use of power than was estimated in 1929. The greatest saving has been made in power for compressing air for the aeration tanks. The basis of design for these tanks and blowers was about one cubic foot of air per gallon of sewage. We actually used apparently about one-half a cubic foot. Of course, this has resulted in a much less use of power than we had anticipated. What has happened at the North Side Plant, of course, will happen at the Calumet, West Side and Southwest Side Plants. * * * I requested our electrical engineer to give me an estimate of what the saving would be, assuming that from now on we would use the power as we are now using it, and they gave me a figure of a future liability throughout the balance of the life of that contract at $18,850,000 * * * that is a reduction of about 35 per cent over the original estimate. Now, in preparing Exhibit 53, this figure was rounded out to $19,000,000 to get round numbers" (Rec. 1783-1784).

The total debt incurring capacity of the Sanitary District over the period 1933-1938 as shown by Exhibit 73 is $150,596,600. Both Exhibits 73 and 53 contain a tabulation showing the estimated construction expenditures equal to bond sales by years. The Special Master in his report makes no reference to this tabulation, identical in both exhibits, which is as follows:

Estimated Construction Expenditures equal to Bond Sales by years,

Year	Construction Expenditure
1933	$14,000,000
1934	20,000,000
1935	21,000,000
1936	24,000,000
1937	25,000,000
1938	35,000,000
Total Debt Incurring Capacity Required	$139,000,000

Using the foregoing tabulation as a basis, the excess of the debt incurring capacity over the estimated construction expenditures at the end of 1938 would be $11,596,600, as shown on Exhibit 73. If the figure of $111,507,500, referred to on page 124, *supra,* is used as a basis of calculation, instead of $138,575,500 the excess of the debt incurring capacity over the estimated construction expenditures would be $39,089,100.

These estimates of the Sanitary District assume the collection of taxes and the retirement of bonds as they fall due. The Special Master discounts the possibility that the Sanitary District may be able to finance the construction of the sewage treatment works required before December 31, 1938, on the supposition that there may be no improvement in the collection of taxes and the sale of bonds (Rep. 76).

The Special Master attempts to demonstrate (Rep. 76) that the present unencumbered debt incurring capacity of the Sanitary District, which the Sanitary District estimates at $48,864,600 (Exhibit 73), and which the Special Master estimates at $38,086,950.81 (Rep. 68), may not be substantially increased during the next six years, and that the present amount of the unencumbered debt incurring capacity may be the only amount that will be available for carrying out the sewage treatment construction program up to December 31, 1938. We believe that any adverse forecast at this time with respect to the possible maximum unencumbered debt incurring capacity is premature, and that there is no necessity for indulging in such gloomy speculation until the present available amount is materially diminished. The Sanitary District may acquire more bonding power later by paying off existing debts, from collections of delinquent and future taxes (Rep. 69). The Special Master has found that "it is believed locally that payment of

taxes is improving" (Rep. 74). Objectionable features in the assessment of taxes have been removed; other legal obstacles have been obviated, and practically the only remaining feature to consider with respect to the possibility of collecting taxes is the ability of the taxpayers to pay (Return 49-51; Rec. 1600-1618).

The following observation is made by the Special Master concerning the "hope" of the Sanitary District as to its ability to finance the construction of the sewage treatment project:

> "The defendants when requested on February 15, 1933 felt unable to assert and therefore declined to assert and do not assert and cannot assert a confident hope that ever, the Sanitary District will be able financially to resume construction in a large way on this project." (Rep. 108.)

The statement made by the Sanitary District, to which the Special Master has reference, was as follows:

> "* * * we wish to make our statements conservative; in other words, we do not wish to indulge in any extravagant claims or any claims or statements that we do not feel can not be carried out.
>
> "The time within which sufficient funds will become available depends upon the salability of bonds, which in turn is dependent upon the following factors. As shown by the testimony introduced, there is an improvement in the tax situation in Cook County resulting from progressive elimination of sundry difficulties that led up to the so-called tax strike.
>
> "Features of the taxing machinery which were objectionable to the taxpayers have been removed by action of the State legislature. Obstacles to the collection of taxes of 1928, 1929 and 1930, which were kept up by litigation in cases like the Cesar case and the Massachusetts Insurance cases, have been removed by the final disposition of those cases

in the Federal Supreme Court. Legal objections pending in the Cook County court are being disposed of at the rate of hundreds of cases per day; consequently it is reasonable to say that there will be no unnecessary delay from now on in the collection of taxes, which may be attributed to a refusal on the part of the taxpayers to pay because of lack of confidence in the taxing bodies, or because of belief in the illegality or invalidity of the taxes. Their ability to pay is a practical problem upon which we are not able to express a definite opinion. It is impossible to estimate at this time what proportion of the taxes will be slow in coming in due to the inability of the taxpayers to pay their bills. The bills for the 1931 taxes are now being sent out by the county collector. The 1931 taxes have been by legislative action made payable in two installments, in order to make it as easy as possible for the taxpayers to pay." (Transcript of Washington Proceedings, 534-536.)

"It is our hope that the taxes will come in in sufficient volume and in time enough to enable us to cure our defaults on financing the construction program outlined so as to have sufficient work completed in time to accept the next reduction in diversion specified in the decree. However, at this time we can not conscientiously assert that we have a confident hope, as phrased by your Master, but perhaps we could say that we have a confident hope but we can not be sure because of the uncertainty that still exists in the general economic situation with which we are all familiar. We therefore do not feel justified at this time in making positive forecasts, nor do we feel justified in expressing a belief that the work outlined can not be accomplished. It is our position that a forecast at this time would be premature, but the Court may assume * * * that unless it becomes necessary for us to apply to the Court at a later date for an extension of time, the work necessary to take the reduction specified in the decree will be accomplished." (Tr. of Wash. Pro. 537-538.)

If this Court adopts the Special Master's view that "The prospect, highly colored by the best hopes within reason, is that the Sanitary District will be unable financially to construct these Works before December 31, 1938," (Rep. 76) we submit that the exigency of the situation calls for an extension of time in which to complete the works rather than a transfer of the financial responsibility directly upon the State of Illinois.

When asked by the Special Master to submit suggestions respecting financial measures to be taken, which are reasonable and necessary the Sanitary District offered the following, which are here presented as the recommendations of the Sanitary District:

> "There are no financial measures which are reasonable and necessary to be taken by the Sanitary District, other than those which the Sanitary District already has under way. Those shall be diligently pursued.
>
> "These measures include the following:
>
> "(1) The sale of construction bonds, which is the only means which the Sanitary District possesses to obtain money to finance its construction program. More than $43,000,000 par value of such bonds are now available for immediate sale.
>
> "(2) Efforts to remove the existing and imminent defaults in principal of and interest on bonds, which efforts include the following: (a) Cooperation with other governmental authorities in Cook County to speed up the collection of taxes; (b) The effort to obtain passage by the Illinois General Assembly of a bill authorizing the issuance of refunding bonds without referendum restrictions.
>
> "(3) An effort to obtain legislation eliminating the requirement of a referendum on bonds hereafter to be issued and sold, to pay for the work made necessary by the Supreme Court decree.
>
> "(4) Prosecution of the Packingtown litigation to a conclusion prior to the putting in of operation

of the Southwest Side treatment works, so that it will be possible to make a charge for treatment of Packingtown wastes.

"(5) Continued efforts to obtain a loan from the Reconstruction Finance Corporation, or to obtain the necessary amendment of the Emergency Relief and Construction Act, in order that such a loan may be obtained.

"(6) Continued economies in operation and administrative expenses, thus conserving the resources and retaining the confidence of the taxpayers in the administration of the District." (Tr. of Wash. Pro. 545-546.)

"We respectfully suggest to the Master that the financing measures which are hereinafter specifically enumerated and commented upon, are in our opinion both unreasonable and unnecessary and in some cases, in our judgment, would be wholly ineffective. We name first that of requiring the State of Illinois to finance the construction program. Your Honor might say, well, why should you, a citizen of the Sanitary District, be exercised about what, if anything, is done to the State of Illinois? We answer, for the following reasons:

"Assuming without conceding, that the obligation to finance the District's construction program is a primary obligation of the State of Illinois, and assuming without conceding, that the Federal Supreme Court possesses the power to order or direct the State of Illinois to assume or undertake that obligation, it is respectfully submitted that such action would be highly inexpedient at this time or at any time. Manifestly such procedure would be anomalous and most unusual. Unquestionably, in so far as the people of Illinois outside the limits of the Sanitary District have any feeling upon the subject, they feel that the burden belongs to the Sanitary District and should be borne by the Sanitary District which is the territory immediately benefited by the improvement." (Tr. of Wash. Pro. 560-561.)

"Moreover, it is perfectly clear that such procedure not only would result in not saving time but probably would have the opposite effect. The taxpayers residing, let us say, in Danville or in a rural neighborhood would feel that there is not more reason why they should be taxed to pay for sewage treatment works in Chicago than there would be for requiring them to help pay for fire engine houses and police stations in Chicago, and an effort to levy a general tax for the purpose of financing this program would require first of all appropriate action by the General Assembly.

"Assuming such action, the proposed tax levy in our judgment would meet with vigorous resistance in the courts and otherwise. The litigation necessary to establish the validity or otherwise of the tax, therefore, would consume from one to three years. Should the State authorities undertake to sell bonds, they would be confronted by the provisions of the constitution which positively require after appropriate action by the legislature the submission of such a proposition at a general election to the voters. It is inconceivable that any considerable number of the voters of Illinois outside of Cook County would vote to approve such a bond issue, and it is doubtful whether, even in Cook County, a majority of the voters would favor such a procedure." (Tr. of Wash. Pro. 562-563.)

"We must respectfully ask your Honor not to overlook the practical aspect of the situation, however. Suppose such a levy were made by the legislature. It would not get into collection, of course, until about a year from now. As soon as that attempt is made to collect it, we would say that it is as certain as anything human can be that some taxpayer, or, perhaps, a large number of taxpayers would file objections to the validity of the tax." (Tr. of Wash. Pro. 565-566.)

"Assuming that all the obstacles in the way of the State financing the program should be overcome—

> which would, of course, involve a very material period of time—there would still remain a very considerable delay incident to the transfer of the management of a project of this magnitude from one administrative body to another, with the reorganization of forces, etc., that would be necessary." (Tr. of Wash. Pro. 569-570.)

Testimony was introduced on behalf of the State of Illinois which established that there was a deficit of $8,150,000 as of December 31, 1932 in receipts for general operating expenses for the year 1932 (Rec. 1879). The deficit arose out of the fact that the State, in its various funds, was unable to meet its obligations during the year 1932 from general revenue, and it was obliged to borrow $8,150,000. (Rec. 1890.) It is estimated by the State of Illinois that this deficiency will be increased to $15,300,000 on December 31, 1933 (Rec. 1926).

In order to balance expenditures as against receipts, and to keep the deficit at the level existing on December 31, 1932, it will be necessary for the administration of the State of Illinois to reduce expenditures or to provide other revenues to the extent of an additional $7,150,000 (Rec. 1946).

We submit that the Special Master has not given proper consideration to the financial requirements for unemployment relief. The Chairman of the Illinois Emergency Relief Commission has estimated the needs for unemployment relief in Cook County for 1933 at $80,000,000 (Rep. 73; Rec. 1537). It has been estimated that the Sales Tax referred to by the Special Master (Rep. 121), which has been passed, may produce between $30,000,000 and $60,000,000, of which Cook County will receive approximately 50% (Rec. 2019). The Sales Tax is to be distributed to the counties in the ratio that the population of the county bears to the population of the

State. Over half of the population of the State is in Cook County. On the basis of the highest estimate the most that Cook County will receive from the Sales Tax will approximate $30,000,000, leaving a deficit of approximately $50,000,000, which must come from some source.

The Special Master states: "The need of borrowing for other purposes is not to be overlooked. * * No necessity for these borrowings appears to be greater than the one before the Court" (Rep. 120).

We submit that the need of funds for unemployment relief, in the interests of self-preservation and for humanitarian purposes, is paramount. Governor Horner stated:

> "Approximately 800,000 persons throughout our state, by reason of widespread unemployment, have become entirely dependent upon private and public relief, and, of course, have enlisted the sympathetic interest and concern of both state and federal governments. At first, our efforts in Illinois were made to give aid through private subscriptions and agencies, and through local public charities. When those resources were exhausted, and they were shortly, every possible method was devised to meet the almost ghastly situation. Through the Illinois Emergency Relief Commission, with the aid of the Reconstruction Finance Corporation, public funds have been used to an almost fabulous extent. More than thirty odd million dollars have been furnished alone by the Reconstruction Finance Corporation.
>
> * * * * * *
>
> "It is not difficult to imagine the possibility of bread riots, and like difficulties, in the large centers of this state, where relief is not available and unemployment still continues. We are trying to meet the necessity for relief by a sales tax, which has already gone through our State Senate, and is now under consideration by our House of Representatives, and we are not sure of easy sailing by any means in that house.

> "With these difficulties facing the state entirely on the problem which deals so intensely with human sympathies, you can well imagine the insurmountable difficulties our state would have in carrying an additional burden resulting from asking the entire state to bear the cost of an obligation which the Supreme Court has fixed upon a limited locality in the state, such as the Sanitary District" (Rec. 1978-1980).

The Constitution of the United States was ordained, as stated in its preamble, to "insure domestic tranquillity" and "promote the general welfare." In a controversy between states, one of the considerations of this Court in entering a decree should be the effect of the decree upon domestic tranquillity and general welfare. Before entering an injunctional order having as its purpose the enforced construction of the sewage treatment works of the Sanitary District before 1938, at all hazards, regardless of the present expressed inability of the people of the State of Illinois or of the Sanitary District to assume the burden, this Court should consider the attitude of the sovereign state and its people toward the reasonableness of the burden placed upon them. If the State of Illinois is confronted with making a choice between providing for the unemployed and caring for the urgent needs of its people, or providing funds for the immediate construction of sewage treatment works which will have the effect of raising the level of Lake Michigan about three and one-half inches over that which has prevailed for the last twenty-five years, it may be anticipated as a possibility that the State will give prior consideration to the necessities of life for such of its people as are unable to sustain themselves because of economic conditions.

Even though the Court may have the power to enter an order as recommended by the Special Master, never-

theless the State of Illinois, with all due respect and deference, in the exercise of its sovereign power, may be compelled to defer to what it regards as a higher need. And unless this Court gives a like consideration to the human and practical aspects of the question, there may arise a situation which might disturb domestic tranquillity. Mutual deference by component parts of the government, each to the other, should always be the rule, regardless of the power of the Court and regardless of the rights of the States.

The Rivers and Harbors Act of July 3, 1930, contains an appropriation for compensating works which, when constructed, will restore the Lakes to their former level.

The Sanitary District respectfully submits that there is no necessity for an immediate enlargement or modification of the decree. Charges of bad faith on the part of the defendants have not been sustained. Due diligence has been exercised. Controlling works are not necessary to effect the reduction in diversion to 5,000 c.f.s. The diversion may never be reduced below 5,000 c.f.s in view of the Rivers and Harbors Act of July 3, 1930. The Southwest Side Treatment Works will be constructed in conjunction with the West Side Treatment Works on the West Side site. The Sanitary District is prepared to construct these works as soon as the necessary funds, which the Sanitary District is endeavoring to obtain, are available. Ample time remains for the construction of these works by December 31, 1938. There is no emergency which requires financial participation by the State in the sewage treatment program. In the judgment of the Sanitary District the measures suggested by the Special Master will not expedite the completion of the sewage treatment works; the Sanitary

District is opposed to the shifting of the responsibility and financial burden to the State because it is unreasonable and unnecessary.

Respectfully submitted,

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