

Chapter II

THE CORPS' ASSIGNMENT TO THE SEAWAY PROJECT

Approval of the St. Lawrence Seaway brought a great sense of relief as much as joy to project proponents. For almost 50 years a deep waterway into the American heartland via the Great Lakes had been discussed, and, since 1919, the Great Lakes-St. Lawrence Tidewater Association had worked diligently to get congressional approval. Through it all, the Corps of Engineers had played a highly important and supportive role to advocates of navigation and power works along the St. Lawrence. Indeed, the Corps' 1942 St. Lawrence report had shown in detail the feasibility of the joint power-navigation project. Both congressional and Great Lakes area supporters had assumed that the Corps would build the Seaway. The authorization of the Seaway project, however, had occurred in ways that its supporters had not anticipated. Certainly the Corps never expected that it would work on the project as the agent of the St. Lawrence Seaway Development Corporation and only as an advisor to the New York and Ontario power agencies which were to build the hydroelectric power works.

During the early 1950s the Corps prepared to work on an assignment which remained nebulous for many months as Congress, the President, and the Canadians slowly worked their way to approval of the joint navigation and power projects. Once its role was finally delineated as agent for the Seaway Department Corporation, the Corps faced difficult organizational problems involving internal operations as well as external relations with the other, numerous, official bodies participating in the project.

The Power Project

Throughout 1953 and much of 1954 the Corps faced a frustrating situation in two ways. First, what role, if any, the Corps was to play in the power project awaited the decisions of the Federal Power Commission (FPC) and the federal courts, as opponents of the power projects tried to block licensing of the Power Authority of the State of New York (PASNY) to build the hydroelectric works in cooperation with the Hydro-Electric Power Commission of Ontario (HEPCO). Second, the Corps had to wait several months before the new St. Lawrence Seaway Development Corporation formally determined that the Engineers would in fact be the planning and construction agent for the navigation project. Legal and political questions had divided what had always been contemplated as a joint project into separate enterprises for navigation and power and had complicated the role the Corps had in the St. Lawrence Seaway. Construction of the St. Lawrence power works was essential to the

later development of the Seaway because the two projects were intricately interconnected. Indeed, the Corps' 1942 plans saw them as a comprehensive package. Failure to coordinate the work done on power and navigation would have created critical delays, since the power project's timetable had an important impact on the completion of the works for navigation.

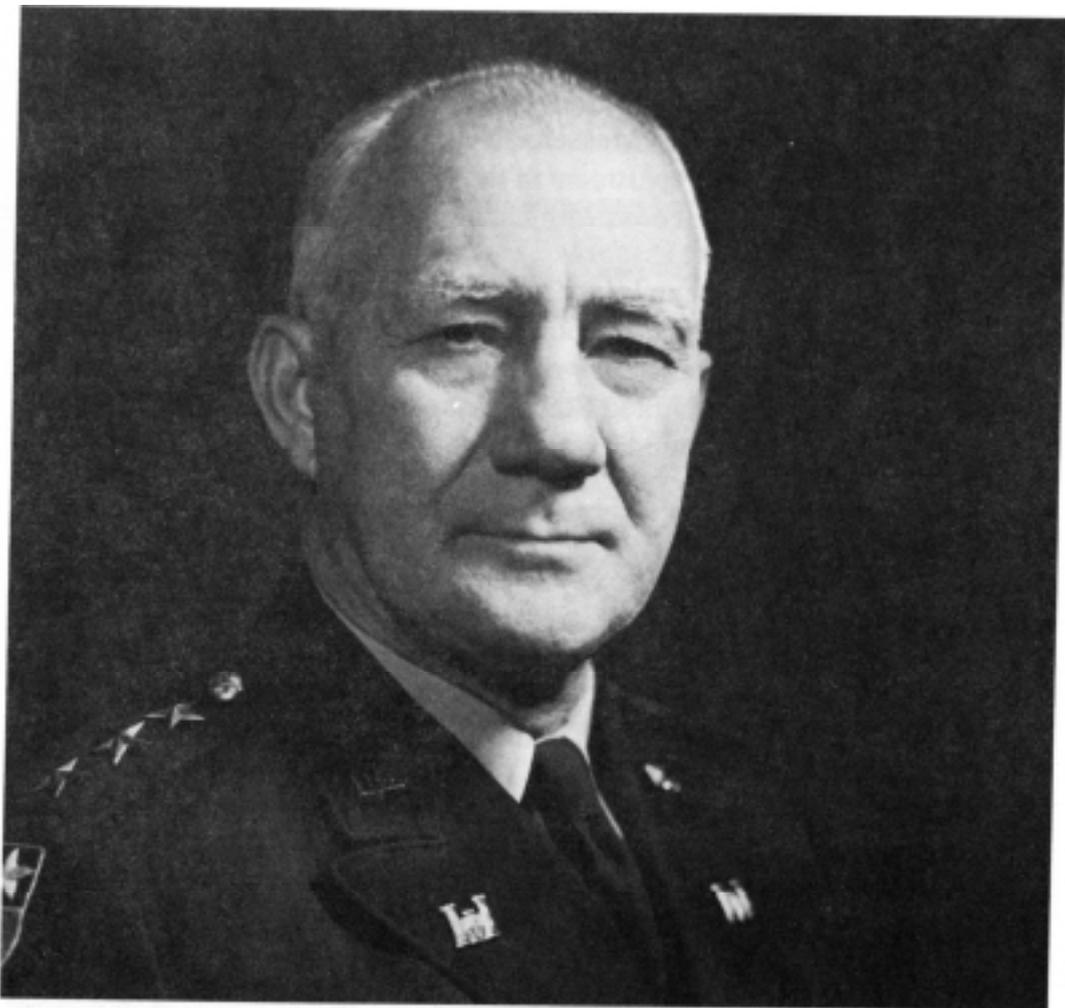
But the Corps' ultimate role in the Seaway and power projects remained unclear. On the sidelines for most of the political and legal debates discussed in the last chapter, the Corps became more directly involved when the United States government acquiesced in plans for an all-Canadian Seaway and New York State's proposed power project in 1953 and 1954.

The Corps had been closely involved with PASNY since that agency's formation in 1931. Indeed, the state agency had been instrumental in getting President Roosevelt to approve the original surveys in 1940 that led to the Corps' 1942 report, the basis for the St. Lawrence power and navigation projects completed in 1959. Since the 1930s the Corps had preferred a joint navigation-power plan for the St. Lawrence because of the interdependence of the two enterprises. The raising of the power pool anticipated flooding the 14-foot channels that traversed the river in the international sections. Such flooding required new canals and locks to allow traffic to circumvent the power pool.

Nevertheless, New York state's needs for new sources of power after 1945 were such that Governor Thomas B. Dewey pressed on until, in October 1952, the International Joint Commission (IJC) approved the plans of New York and Ontario to build the power works. The Truman administration continued to prefer the joint power-navigation project. By the summer of 1952, however, the administration was exasperated by congressional inability to approve an American role in building the St. Lawrence navigation works. Thus, in mid-June 1952 when the Canadians proposed a seaway of canals and locks solely on their side of the border, the United States acquiesced in the plan. Less than two weeks later, on 30 June 1952, the United States and Canada simultaneously submitted almost identical applications to the IJC to develop power in the International Rapids section of the river. The New York Power Authority's application to build the power works was already before the Federal Power Commission; the license was granted in May 1953.¹

The Corps of Engineers played an important role in PASNY's application to the FPC. The Power Authority made no secret of the fact that the plans first submitted to the commission in July 1948 were based on the 1942 St. Lawrence report prepared by the Engineers. Moreover, PASNY officials consulted Corps personnel in preparing their modified reapplication to the FPC in July 1952, as well as in their defense of the application in the lengthy commission hearings and federal court proceedings that followed. Neither PASNY nor the Corps wanted to repeat the FPC's 1950 rejection.

The Corps became directly involved in these efforts to gain approval of the power project in October 1952. At that time, President Truman appointed the Chief of Engineers, Major General Lewis A. Pick, to an interdepartmental committee to draw up detailed plans to be submitted for approval to the IJC. The Chief designated Corps personnel to represent him. The committee



¹ Lieutenant General Lewis A. Pick, Chief of Engineers (1949-1953).

based its recommendations heavily on the Corps 1942 report and on more recent data collected since the end of World War II.

On 29 October 1952 the International Joint Commission approved the proposed power project and recommended the creation of a St. Lawrence River Joint Board of Engineers which would include Corps representation. As a member of a board of engineers created to oversee the project the Corps gained formal responsibility. The American section of the board was eventually headed by Major General Bernard L. Robinson, Deputy Chief of Engineers for Construction.²

The Chief worked assiduously to ensure the Corps an important role in the power project. By the time the Federal Power Commission issued its license to PASNY to build the United States' part of the power project, there was no question that the Corps would have a major role in the work of the American section of the St. Lawrence River Joint Board of Engineers (JBE). Late in 1952 it was not clear whether or not PASNY would ask the Corps to be its construction agent on the project. But whether or not that happened, Pick made the case for the Corps having a major role in the work of the United States section of the Joint Board of Engineers. President Eisenhower complied in an executive order of 4 November 1953. It specified that the American sec-

tion of the Joint Board of Engineers be made up of the Secretary of the Army and the Chairman of the Federal Power Commission or their designated alternates. General Robinson represented the Secretary in the American headquarters of the board located in Massena, New York. The executive order also specifically instructed the Department of the Army and the FPC to furnish the United States section of the board with facilities, supplies, and personnel. The Corps' assignment to take on these responsibilities was logical since it was represented on the International Joint Commission, which provided the initial order of approval under which the power project was to be constructed. The Corps also had had experience in working with the Canadians, being represented on numerous other United States-Canadian joint boards that oversaw issues having to do with boundary waters.³



Major General Bernard L. Robinson, Deputy Chief of Engineers for Construction (1955-1956).

The Corps also played a role in the power project through its representation on the Joint Board of Control. (JBC) The IJC had established this body to oversee changes in the level of the river, something that would occur upon the completion of the power project. The JBC relied heavily on the Engineers' surveys of the Great Lakes and river levels, as well as on Corps personnel experienced in such matters.⁴

The Corps' influence on the power project, however, was most directly exercised by its role on the Joint Board of Engineers. The United States section of the board was to act for the United States in all technical issues raised

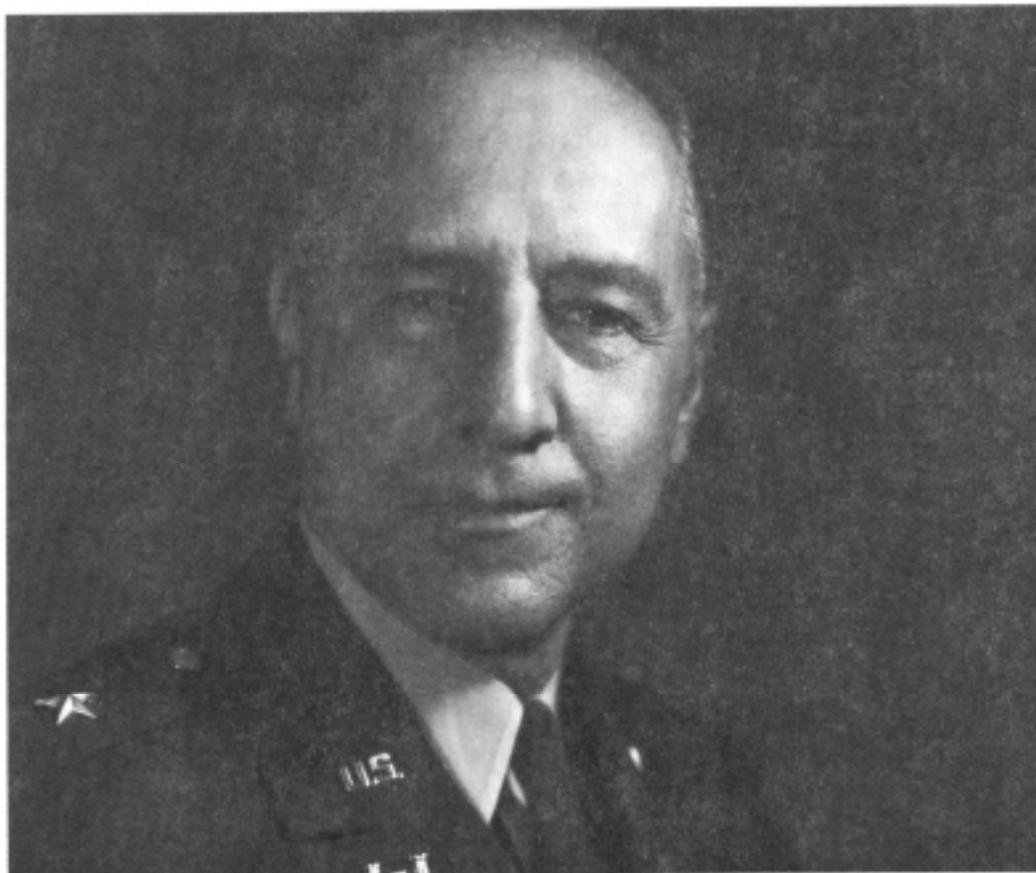
by the power project. The board's responsibilities included reviewing, approving, and coordinating the plans, specifications, and work schedules before construction began. Also, the board had the responsibility to review major changes made in the plans and ultimately to inspect the completed works to insure that they conformed to specifications.⁵

The case for the Corps' involvement in the Joint Board of Engineers was a good one. In the first place, the New York and Ontario power entities were to rely almost exclusively on the Corps' 1942 report as the basis of their project. Second, speed was essential to completing the project. It was to be costly (original estimates were about \$450 million). Both New York and Ontario wanted, needed, the revenues to be raised by providing power. They had to meet heavy interest charges on the project's financing. The Corps had the necessary experience in foundation engineering and structural design that would help speed the project along, and it also had the contacts with private consultants who might be needed at times during construction.⁶

For a period in 1953 it appeared that the Engineers' role in the power project was to be more than that of a very influential partner in the work of the Joint Board of Engineers. At a meeting of Corps officials from the Great Lakes Division and PASNY, the chairman of the Power Authority, John E. Burton, indicated that he was considering the Corps for the design and the construction of the power works. While no decision had been reached on the issue, the major reason for interest in utilizing the Engineers was to keep costs down. Burton saw no need at that time to build up a large design or construction organization when the Corps already had one in place. That the chairman's interest was serious seemed confirmed by the fact that PASNY approached Corps representatives with similar observations about the usefulness of the Engineers' cooperation.⁷

Nothing came of these discussions, however. By November 1953, when the President signed the executive order approving the power project, PASNY had decided on private engineers to design the power works and private construction companies to build them. The Power Authority's decision not to use the Corps was in large part the result of the political atmosphere in the early 1950s. For one thing, President Eisenhower had all but ruled out a direct federal role in building the power works. Concerned about balancing the budget, expensive power projects seemed a good place to cut spending, especially when a state such as New York was eager to take on the project.⁸

Corps officials were not unhappy about this decision. According to its attorneys, the Engineers did not have the legal authority to work for the State of New York without congressional authorization. The hostility to New York's power plan in Congress, as well as the prospect of court challenges to the FPC license, precluded that state seeking such legislative authority. Then, too, the Engineers were not sure that being the construction agent for PASNY was a good idea. In the first instance, the Corps was no more interested than PASNY in being trapped in a series of legal webs, woven by enemies of the project, over the authority of a state in using a federal agency. Of more significance, the Corps doubted that the state could delegate sufficient authority for the Engineers to successfully undertake the project. The legal hurdles would thus



Brigadier General Claude H. Chorpening, Assistant Chief of Engineers for Civil Works (1951-1954).

create organizational and command problems. From the perspective of command, it was not clear that the Chief of Engineers and the Division Engineer would have effective control of the project. Moreover, the Engineers anticipated other problems from the Power Authority's intractable enemies. Representatives of private power interests, who had fought the FPC's granting PASNY a license, were expected to seize on any difficulty to criticize the project. In such a charged political atmosphere, the Corps feared, it could become the scapegoat for any problems. In such circumstances, the Assistant Chief of Engineers for Civil Works, Brigadier General Claude H. Chorpening, wrote that "the Corps could expect" to get much of "the blame for difficulties and little of the credit for the achievement." Leaders in the Corps were also apprehensive that in working closely with PASNY there would be excess costs in a project that would end up with dual supervision. The Chief clearly did not want to be saddled with criticisms that the Corps contributed to an excessively costly project.⁹

Although the Corps was not to be a major partner with the New York Power Authority in building the power works, the latter were vitally important to the Corps' later responsibility for constructing the improvements for navigation. The Engineers, therefore, made the most of their role on the Joint Board of Engineers. They were able to have an important hand in the planning and construction of the power works because they possessed a vast collection of

work papers, records, title abstracts, property ownership research data, test boring cores, etc. worked up and expanded since 1940-1941. The Corps kept tight control of these files.

In October 1953, the New York Power Authority's chairman wrote to the Chief of Engineers requesting all these Corps technical materials. The Power Authority needed these data in preparing final estimates of cost, contract plans, and detailed specifications. Fifty cases of materials supplemented the printed reports, based on the work of the 1940s, which the power entity already had in its possession. The Corps was willing to cooperate with PASNY, but it was reluctant to turn over all of its papers and files. For one thing, the Defense Department did not think that PASNY had the authority to request the papers. This question of authority, however, did not really concern the Chief of Engineers. He wanted to keep these records because it would require the Power Authority to interact continually with the Corps in almost every phase of the project. This interaction between Corps and PASNY personnel had been going on since the State of New York had prepared its applications to both the International Joint Commission and the Federal Power Commission. The Chief and the Secretary of the Army were looking ahead to the possibility that the Corps might still have a role in the improvements in navigation, the Seaway itself, a project dependent on close coordination with the construction of the power project. Ultimately, the papers remained in the hands of the Corps, but they were moved to the Buffalo District office where the officials of the Power Authority could easily examine them.¹⁰

At this same time, supporters of an American role in building a seaway made their last congressional effort to gain approval of what was shaping up as an all-Canadian navigation project. The Corps supported these efforts which had begun while the New York Power Authority's application faced delays at the Federal Power Commission. In December 1952 President Truman took advantage of these delays and tried once again to get approval for United States involvement in improving navigation works on the American side of the International Rapids section of the St. Lawrence River. Truman failed to get approval before he left office, but the momentum begun in the last months of his administration carried over into the incoming Eisenhower administration.

Once the St. Lawrence Seaway Development Corporation designated the Corps as the construction agent for the navigation improvements, in September 1954, the contacts with PASNY in Buffalo became more and more important. It was essential that the Corps and the Power Authority work together closely. The power and navigation aspects of the project were inextricably connected. A failure to cooperate would have delayed the complex project where timing and coordination were essential.¹¹

The Corps' involvement with PASNY manifested itself in several ways during the building of the Seaway. As the construction agent for the St. Lawrence Seaway Development Corporation, which we will discuss shortly, Corps officials often dealt directly with officials of PASNY. PASNY representatives also attended informal weekly meetings initially held in Buffalo and later in Massena over the years that the project was under construction.

These meetings were with members of the Corps' Buffalo District staff and representatives of the Development Corporation.

The Corps' insistence on a leading role in the work of the Joint Board of Engineers proved important to the speedy beginning of the navigation project when in May 1954 Congress finally approved an American role in the construction of the Seaway. The Engineers had already been involved in PASNY's planning. The close working relationship between the Corps and PASNY was perhaps initially most important in developing the procedures for the acquisition of lands for the project. Under the terms of the Federal Power Commission license granted to PASNY, the Power Authority had to turn over, without cost, what lands were necessary to build the navigation works. Because of the Engineers' studies of land acquisition needs in 1942, PASNY invited Corps representatives to an Albany meeting on 18 August 1954 to discuss general policies and procedures for land acquisition. This meeting was a significant indication of the Engineers' important influence, because it occurred several weeks before the Development Corporation formally designated the Corps as its construction agent. Attending the meeting were representatives of the Office of the Chief of Engineers, the North Central Division, the Buffalo District, PASNY, the Attorney General of the State of New York, and the Superintendent of the New York Department of Public Works. The latter department was to be PASNY's agent for land acquisition. It traditionally had been the agency that acquired, on a reimbursable basis, lands, easements, and rights-of-way for federal flood control projects in the state. It was fully staffed with personnel experienced in acquiring the lands necessary for the Seaway and power projects.¹²

Essentially the Power Authority was to acquire all the lands that were to be flooded for the power pool and the lands upon which the dikes for the pool were to be built. Lands within the area of the power pool that were needed for navigation were eventually conveyed to the Development Corporation as required in PASNY's Federal Power Commission license. In view of the public works department's previous experience in acquiring lands for Corps flood-control projects, that department also agreed to acquire the land necessary for the navigation works. Title for these lands was also ultimately conveyed to the St. Lawrence Seaway Development Corporation.¹³

As with so many aspects of the projects for navigation and power, close coordination was essential in acquiring lands. In working with New York's Department of Public Works, the Buffalo District had to acquire land in time to meet the construction schedule being worked up by the Corps, PASNY, and the Development Corporation. One of the most critical tasks proved to be arranging with the state public works department for early access to the land to begin preliminary work. Buffalo also had to arrange joint appraisals of property for which the Development Corporation was obligated to reimburse PASNY.¹⁴

On the engineering aspects, the Corps also became more directly involved in PASNY's planning beyond its role on the Joint Board of Engineers. By September 1954 it was clear that close coordination between PASNY and the Development Corporation was essential. Within two weeks of being designated the Corporation's construction agent, joint meetings were

begun to coordinate the design of PASNY's dikes. Corps representatives were present at a meeting in New York on 15 September 1954 with PASNY and its consulting engineers, the firm of Uhl, Hall and Rich, who were to design the dikes. The designs, however, were subject to the approval of the Joint Board of Engineers. In return for PASNY's taking responsibility for the design, the Corps agreed to provide the plans for highway relocations and new road construction. The Engineers, especially the Buffalo District, also took the lead in work on other projects of interest to both the Seaway Development Corporation and PASNY, such as the relocation of power lines.¹⁵ These subjects will be covered fully in subsequent chapters, but the point is that the Corps' Buffalo District office became an important point of contact and interaction between PASNY and the Corporation.

Thus, the Corps' role in the power project was more significant than appeared on paper as a representative on the American section of the Joint Board of Engineers. As originators of the basic plans for both the power and navigation projects, the Corps exercised great influence. Both projects had to be completed as quickly as possible. Corps personnel and files were indispensable to PASNY in drawing up its own plans, which in many ways were little more than updated versions of the Corps' 1942 report on the St. Lawrence. The Engineers' experience with PASNY and the New York department charged with responsibility for public works also contributed to enlarging the Corps' role in the Seaway and power projects. Indeed, in its own way the legislation authorizing the Seaway almost seemed to mandate, whether intentionally or not, a major role for the Corps. The law creating the Seaway Development Corporation specified that work on the navigation project could not begin until PASNY was able to provide assurances that the dams and power works approved by the International Joint Commission could be completed concurrently with the navigation projects.¹⁶

This requirement prompted meetings between PASNY and Corps officials to assure that planning proceeded quickly on such issues as land acquisition and highway and power line relocations. Working out essential points of coordination, even before the Corps received the go-ahead from the Corporation in September 1954, PASNY was able to propose a detailed construction schedule on 27 October 1954. This overall schedule prepared by PASNY's consulting engineers promised completion of the works by December 1959. It also provided the necessary assurances mandated by Congress before work could begin on the Seaway.

Relations with PASNY were essential to the successful completion of the Seaway. As we shall see, relations were not always smooth. Nevertheless, the Corps had a history of cooperation with PASNY. The same could not be said, of course, for the new St. Lawrence Seaway Development Corporation which had only been formed in May 1954 to take charge of the financial planning and construction of the improvements in navigation. While some of its corporate officers were known to Corps leaders, it was new and untried. The Corps' reputation was perhaps more on the line because of its subordination to the Seaway Development Corporation than it had been or was in projects for which the Corps had fuller responsibility. To the Engineers the danger was

that failure would be attributed to the Corps, while the Corporation would take credit for successes.

Assigning the Corps Its Role

That the public law authorizing the Seaway left the designation of the construction agent to the President was a source of disappointment and some alarm to the Corps. In retrospect there seems little doubt that the Corps was to be assigned the job. But the Chief of Engineers, Lieutenant General Samuel D. Sturgis, could not afford to take such an assignment for granted. From his perspective the Corps was working in a time of troubling change. President Eisenhower had appointed the Hoover Commission to look into government reorganization. Sturgis and others in the Corps saw the commission as hostile—some members of its task force advocated reductions in the Corps' role in civil works projects. The Corps was also going through a protracted dispute with the Air Force over military construction. And President Eisenhower's commitment to cutting federal spending left open the possibility of fewer projects for the Corps. Sturgis also thought that public corporations like the Development Corporation might be the wave of the future. It was vital to the Corps that it not be denied the major role in the Seaway that the Engineers always assumed would be theirs. If public corporations were to be



Lieutenant General Samuel D. Sturgis, Jr., Chief of Engineers (1953-1956).

charged with future civil works projects, Sturgis wanted to assure that the Corps would carry on its traditional role as primary construction agent for such enterprises.

Congress had created the Seaway Development Corporation, as we have seen in the last chapter, in large part because it was to mirror the Canadian St. Lawrence Seaway Authority. As it turned out, the Corporation was not to presage the future. It was the product of special circumstances: the need to finance the Seaway through bonds sold to the U.S. Treasury and the need to work out a schedule of tolls with Canada to raise the revenue to retire the bonds.¹⁸

In any event, the Corps had joined enthusiastically the efforts in 1953 and early 1954 to get the United States to take part in the St. Lawrence Seaway project. The Secretaries of Defense and the Army had regularly gone on record in support of the project. The Defense Department advocated American participation to ensure that the United States had a voice in determining how to defend the navigation works in a time of war.¹⁹

While the Corps and the Defense Department favored an American role in the construction of the navigation improvements, neither was pleased with public discussion of a semi-public development corporation to build the Seaway. In responding to letters from the Senate Foreign Relations Committee chairman in February 1953, the Secretary of Defense, Charles E. Wilson, questioned whether the proposed St. Lawrence Seaway Development Corporation was the most appropriate way to ensure American participation in and protect American interests on the project. Wilson's questions were prompted by his concern over whether "such a corporation would establish a desirable precedent with respect to similar future projects." What particularly concerned the Secretary, however, was that "no provision is made in the bills and joint resolution for utilizing the services of the Corps of Engineers of the United States Army."²⁰

Even though the Secretaries of the Army and Defense had made the case for the Corps' participation in the project, the bill that passed Congress in May 1954 did not identify the Engineers as the construction agent of the new St. Lawrence Seaway Development Corporation. This omission caused more than a little anxiety. After all, the Corps had designed and built virtually every federal lock constructed during the previous 100 years. It had also been responsible for the design, construction, maintenance, and operation of all federal navigation channels and harbors in the Great Lakes since the 1850s. But these facts had not been enough to sway Congress.²¹

Many officials in the Defense Department, as well as private business supporters of the Corps in the Great Lakes area, thought that the Corps would eventually get the job. General Sturgis and others in the Corps, however, believed that nothing could be taken for granted. Indeed, as the bill approving the Seaway made its way through Congress for the last time, Sturgis's mood was one of genuine anxiety. He saw events as adding "up to a definite pattern" that would undermine the traditional role of the Corps. Part of the pattern that worried him was the make-up of the Hoover Commission task force, the body that would do the basic work for the study of government reorganization. Several of the appointments "indicate a concerted effort for pushing the

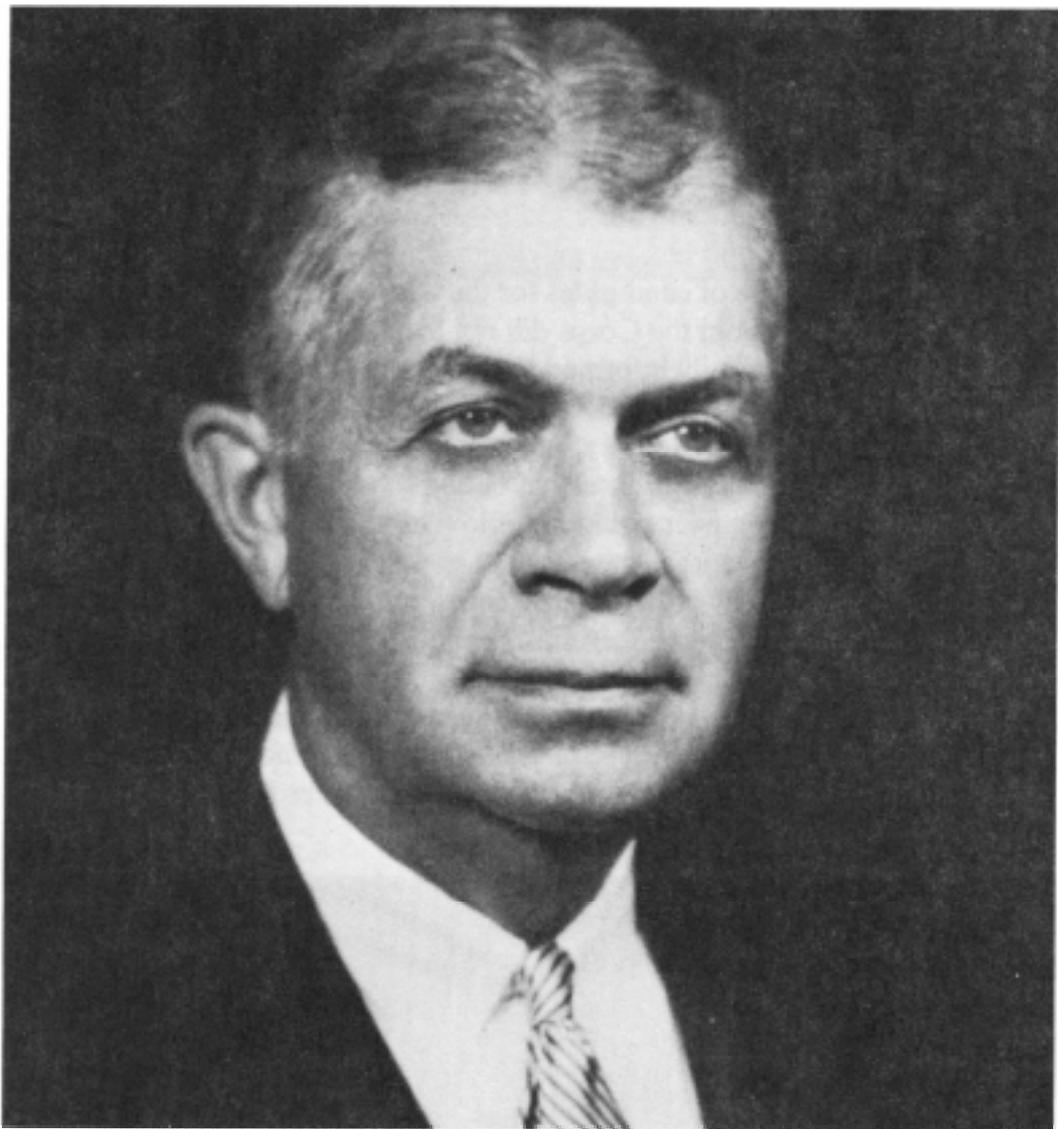
Navy Bureau of Yards and Docks to a favorable position over the Corps of Engineers.” Sturgis also feared that highly placed naval officials and the American Society of Civil Engineers, under the leadership of some prominent civil engineering firms, were engaged in a “very careful calculated plan” to make inroads into “the largest block of public work both military and civil—namely that of the Corps of Engineers.” The Chief of Engineers saw as evidence of the pattern the attacks by Senator Lyndon B. Johnson on the Corps, the formation of a private civil engineering contract group for Air Force construction in France, and the loss of construction projects in building United States bases in Spain.²²

Equally disturbing to General Sturgis was uncertainty over the Eisenhower administration’s approach to civil works. The President’s desire to keep down federal spending might make public corporations more likely in future civil works projects. As the St. Lawrence Seaway project received final approval, the President and members of Congress called for greater cooperation among federal, state, local, and private interests in the development of power in federal multi-purpose projects. Receiving much attention, for example, in that spring of 1954 were the Cougar and Green Peter projects in the Willamette River Valley in Oregon.²³

In any event, Sturgis wanted to assure that if public corporations were to be used for civil works, the Corps would continue its traditional role in such projects. Sturgis, therefore, campaigned to make certain that the Corps would get the Seaway assignment. He and his close subordinates, Generals Robinson and Chorpening, began with the Department of Defense itself. With the Eisenhower administration still inexperienced, the Engineers had to make a strong case to the upper reaches of the Defense Department to ensure support of the Corps’ role. The Secretary of Defense had direct access to the President, and both ultimately supported the Corps’ role in the Seaway. Once top-level support was secured, the key issue to Sturgis was to see that the new public corporation came under the control of the Secretary of the Army, something that eventually happened. The arrangement proved advantageous as the public corporation reported to the same office that the Engineers reported to, a common superior authority most solicitous of the interests of the Corps.²⁴

Sturgis, for his part, did his best to establish good relations with the Development Corporation’s administrator, Lewis G. Castle. The administrator would decide what agency would construct the Seaway for the Corporation. Continued good relations with Castle—a Duluth banker, long involved in the lobbying to get the Seaway project approved, who had had numerous dealings with the Corps over the years—were essential.²⁵

Sturgis openly cultivated Castle, both before and after he was formally named administrator of the St. Lawrence Seaway Development Corporation, and made the Corps available to the Corporation to help it get established. The Deputy Chief of Engineers, General Robinson, and his staff worked closely with Castle and his associates in revising the cost estimates for the project. Robinson also advised Castle on how to go about coordination with PASNY on technical issues. Robinson thus made the most of his position as head of the American section of the Joint Board of Engineers that had been set up to oversee the power works being built by PASNY and HEPSCO.²⁶



Lewis G. Castle, Administrator, St. Lawrence Seaway Development Corporation (1954-1960).

St. Lawrence Seaway Development Corporation

By the end of July, Sturgis believed that Castle favored giving the Corps the job. The Chief continued to make the Corps' case at every opportunity, although thinking it better to be indirect, talking "very tactfully on the outer fringes." Sturgis, for example, arranged for Castle to fly back to Washington with him after the Chief had given a speech in Duluth about the development of the city's port. Castle had flown out to Duluth with Robinson. Sturgis and Robinson had gone to great lengths to clear the speech with Castle and to take his suggestions for changes. As it turned out Castle's suggestions were useful, softening some points that the administrator thought might have been too strongly put for the Chief's audience. Castle, however, was under some pressure not to choose the Corps for the project, and Sturgis did not want to be too overt for "it would be only embarrassing if I decided to press him" directly.²⁷

One of the most serious of the local problems in the Great Lakes area that Sturgis had to address involved N. R. Danielian, president and treasurer

of the Great Lakes-St. Lawrence Association and editor of an influential business publication, *The Heartland*. Danielian was an influential figure in the area because of his tireless efforts on behalf of the Seaway project. Danielian, however, proved troublesome to the Corps. For one thing, he opposed giving the planning and construction assignment to the Buffalo District-according to Great Lakes Division Engineer Colonel Wendell P. Trower, Danielian thought it “would ‘downgrade’ the job too much.” In addition, Danielian was promoting his own slate of candidates for the Seaway Corporation’s Board of Advisors-many of whom the Corps did not like. Danielian resented that the Corps did not keep him fully informed about improvements in harbors and the connecting channels of the Great Lakes, tolls, and the like. And, after congressional approval of the Seaway, he wanted to assure a continued role for himself and his association in issues affecting the Great Lakes area. In any event, the Division Engineer could not allow him the level of interference in Corps affairs that he wanted.²⁸

Sturgis, as well as others in the Corps, personally disliked Danielian, but the Chief did his best to mollify him. He enlisted the assistance of other influential people from the area such as Castle and Congressman George Dondero, one of the most prominent sponsors of the Seaway bill, to keep Danielian in line. Unfortunately, Sturgis and Danielian had exchanged harsh words in December 1953. Danielian, whose main concern had been a seaway,



N. R. Danielian, President and Treasurer of the Great Lakes-St. Lawrence Association.

St. Lawrence Seaway Development Corporation



Colonel Wendell P. Trower, North Central Division Engineer (1951-1955).

not who built it, had acted “cocky” once the Canadians decided to build a seaway themselves. To his face, Sturgis called Danielian a “damn fool,” and no doubt some of the trouble that Danielian caused for the Corps was the result of this incident.²⁹

Sturgis also had to confront political problems on other levels. Senator Hubert H. Humphrey of Minnesota had come out in support of former Chief of Engineers Lewis A. Pick as deputy administrator of the Seaway Corporation. Pick had had close ties to President Truman and the Democratic party, and although Sturgis did not believe that a Republican administration would choose him, the maneuvering in favor of Pick was watched closely. The fear was that Pick would want a separate district, reporting directly to him, created to build the Seaway.³⁰

Another problem was that some of the people, friends from the private sector, influencing Castle’s personnel decisions were hostile to the Corps. But Sturgis concluded that ultimately there was little he could do about such hostility, and he concentrated his energies where he thought they would do the most good.³¹

Within the Defense Department itself, the Corps made its case for getting the assignment by reviewing its lengthy history of involvement in similar projects and its general experience with the Canadians. Under long-established law and custom, the Corps had been responsible for the planning, construction, maintenance, and operation of federal navigation works. In the Great Lakes area, the Corps’ involvement went back over 100 years, and the

Engineers had been responsible for the major plans for the navigation and power improvements in the St. Lawrence. Aside from that experience, the Corps underscored the fact that it had worked closely with the Canadians before, especially since 1909 when the Boundary Waters Treaty had established the International Joint Commission on the St. Lawrence. Indeed, this was only one of several joint American-Canadian boards having responsibility over boundary waters on which the Corps was represented. Another argument the Engineers made both within and outside of the Department of Defense was that the experienced Buffalo District could promptly expand “to handle the design and construction” of the Seaway.³²

While Sturgis wanted the Corps to get the assignment, he worked hard to ensure as much autonomy as possible for the Engineers as construction agent. The Chief of Engineers thought it essential that the Engineers have full responsibility for the construction. In part this was a result of Sturgis’ respon-



Martin W. Oettershagen, Administrator, St. Lawrence Seaway Development Corporation (1961).

St. Lawrence Seaway Development Corporation

sibility to protect the Corps' reputation. Freedom to do what they knew best—engineering and construction—was very important. One way to guarantee this independence was to have a Corps officer appointed deputy administrator of the St. Lawrence Seaway Development Corporation. The Chief also wanted to influence the make-up of the Corporation's five-man advisory board. He would have liked to have seen an Engineer officer experienced in navigation works and a civilian familiar with Great Lakes port management and shipping, someone likely to be a supporter of the Corps of Engineers, appointed.³³

As it turned out, the Corps received wide latitude for planning, designing, and constructing the project. It did not, however, have as much influence on the Corporation's board as Sturgis had hoped, nor did Castle appoint an engineer officer as deputy administrator. Castle insisted on greater distance from the Corps and appointed a deputy and a board of his own choosing. Sturgis confided to Chorpening in an "eyes only" memo that he was "not too happy" about the board members' general lack of relevant experience. Most disappointing, however, was Castle's appointment of Martin W. Oettershagen, a private engineer, as deputy administrator, Oettershagen, a Chicagoan, had wide hydraulic engineering experience in the Great Lakes area.³⁴

Despite the jockeying over the Corporation appointments, General Sturgis could take comfort in the fact that the Secretary of Defense, to whom the Seaway Corporation was responsible, had designated the Secretary of the Army as the official to whom the Corporation's administrator was to report. This made the final authority an individual sympathetic and understanding of the Corps' approach to civil works projects. On a more general level, Corps officials argued that the arrangement was sound administratively and an improvement over "accepted procedures of one federal department doing work for another in that both the Corps and the Corporation would be directly responsible to the Secretary of the Army."³⁵

Ultimately, the Engineers were not happy with their subordinate role vis-a-vis the Corporation. Sturgis thought it important that eventually the operation and maintenance of the Seaway become the responsibility of the Corps. As early as December 1955, only a year after the advertisement of the first contract, Sturgis ordered drafted proposals for the Corps' taking over operation and maintenance of the Seaway when completed. The issue was not finally determined, as we shall see, until 1958. And the Corps gained the enmity of both Corporation and Bureau of the Budget officials over the attempt to wrest that responsibility from the Corporation. But Sturgis was concerned about proper maintenance of the Seaway, not bureaucratic power plays. Lax maintenance, he feared, would lead to deterioration that would ultimately reflect badly on the Corps.³⁶

Underlying much of Sturgis's concern about the Corps' authority in the project was that he saw the Corporation making an already complex project even more so. The Seaway was to be built under the supervision of, from the Corps' point of view, a thoroughly inexperienced organization. The Corporation, in that context, heightened the possibility of both cost overruns and failures to meet deadlines. And at that time, when the Republican administra-

tion was looking for ways to reduce government spending, the Corps believed that it could not afford to be associated with a project that went over budget and missed deadlines. The St. Lawrence Seaway was simply too visible a project. These fears led the Engineers to insist on elaborate rules for inspection of works and formal procedures for approval of the works turned over to the Corporation as the project was completed.³⁷

Sturgis's problems were not limited to his dealings with external authorities and organizations. He had to face internal problems too. Corps personnel were dismayed, if not angered, that it had taken the Corporation from May to September 1954 to designate the Corps as its construction agent. Sturgis had to issue several directives reminding his subordinates of the need for cooperation with the Corporation. In one such directive, he ordered Chorpening and Trower to make clear to all concerned with the project that they "be frank, fair, and . . . give full recognition to the responsibilities of the Seaway [Corporation]." He went on to say that "we must fully and freely recognize that it is *not* an ordinary project. . . ." (Sturgis's emphasis). What the Chief wanted remembered, however, was "that under present philosophy and trends, [the Seaway Corporation] may well be the forerunner of other Government corporations." For that reason, the Corps "must aim to build a record of confidence, trust, and cooperation . . . that will recommend and stand us well in the future." Such a record would assure that the Corps continued to be chosen as the construction agent on such projects.³⁸

Morale was not the only internal consideration. As the power and navigation projects seemed more and more likely to receive congressional approval, Sturgis faced internal organizational decisions in 1953 and early 1954. As early as 1951 the Assistant Chief of Engineers for Special Projects, Brigadier General William E. Potter, had proposed the creation of a special district at Massena to construct the St. Lawrence Seaway and power projects. He had argued that the creation of a special district, which had been done on earlier projects, was justified because of the complexity of the proposed Seaway. His proposed Massena district, the early proposals advocated, would serve as a place to oversee the several projects that were to go into the overall task of the Seaway and power works. Each job would have been assigned to one project manager who would have reported to the top levels of the Corps. Much discussion followed, but no firm decisions could be reached about organization until it was clear whether the Corps would be responsible for a joint project, if any.³⁹

Sturgis and his subordinates began to focus more clearly on the organizational issues raised by the project once the Federal Power Commission began to take seriously the State of New York's application for a license late in 1952. So long as it seemed there was a chance that the Corps might be responsible for both the power works and the improvements in navigation, setting up a separate district remained a possibility. Once it became clear, however, that New York's Power Authority would not turn over the power works construction to the Corps, the organizational questions changed. Sturgis, Chorpening, and Robinson concluded that a separate district would not be necessary if the Corps' likely assignment would be in constructing the



Major General William E. Potter. As a brigadier general, Potter was the Assistant Chief of Engineers for Civil Works (1949-1951) and the Assistant Chief of Engineers for Special Projects (1951).

Seaway alone. The question then was what, if any, reorganization might be necessary within the Engineers to deal with the navigation project.⁴⁰

The initial organizational issue raised by the possibilities of the St. Lawrence navigation project centered on which Division should be assigned the task, the North Atlantic or the Great Lakes Division (which became the North Central Division on 1 September 1954). After studying the alternatives, the project was assigned to the Great Lakes Division primarily because that Division had considerably less work scheduled for it than the North Atlantic Division.⁴¹

Technical considerations also figured into the decision. "While careful adjustment of workloads between Divisions is a desirable objective," Chorpene observed, "Civil Works is of the opinion that the regional economic and physical aspects of the Great Lakes-St. Lawrence Basin should be given primary consideration. The close inter-relationship between hydrologic and hydraulic aspects with design and operational criteria is obvious."⁴²

The Great Lakes Division, particularly the Buffalo District, had the experience and expertise to deal effectively with the regional economic and physical aspects involved in the project. Watershed boundaries were not always the controlling factors in determining Division boundaries, but most of the American portion of the Great Lakes drainage basin was within the Great Lakes Division. Water uses in the Great Lakes were so interrelated that it sim-

plified the Corps' responsibilities to have projects within that system under the jurisdiction of the one Division. The Lake Survey District, one of the Districts in the Great Lakes Division, had been conducting topographic and hydrographic surveys as well as maintaining records of lake levels and outflows in the region since the 1840s. In 1952 that District had begun a water-level survey and study aimed at developing a coordinated system of lake regulation. The work included the upper reaches of the St. Lawrence, which affected the regulation of Lake Ontario. One of the survey's goals was to project the effects of power and navigation development, particularly silting, shore erosion, and flooding. Because of that project, Colonel Trower, the Great Lakes Division Engineer, maintained that his Division could best resolve problems that developed over the hydraulics of the system's outflows into the St. Lawrence River.⁴³

The Great Lakes Division's navigation experience also influenced its receiving the Seaway project assignment. And, in gaining its knowledge of the problems of Great Lakes navigation, the Great Lakes Division had developed close relations with shipping and port interests. Navigation requirements on the St. Lawrence were to be similar to those on the Great Lakes. Indeed, the Seaway was to be an extension of the Great Lakes navigation system. As Trower put it, "the work in the International Rapids Section would be merely an extension of the type of work in which the Great Lakes Division will be engaged in the connecting channels [among the Great Lakes] and of the type with which it is thoroughly experienced."⁴⁴

While Sturgis did not want the Great Lakes Division to think of the work on the connecting channels and the Seaway project as one and the same, he nevertheless found the Division's arguments convincing as its work had also given it long-term experience in working with the Canadians. The Division had harmoniously negotiated boundary-water issues with them for decades. This was an important consideration, since the work in the International Rapids section of the St. Lawrence was going to raise complex new issues that would have to be resolved in close cooperation with the Canadians and with local interests.⁴⁵

Once the determining factors were discussed, Sturgis quickly assigned the St. Lawrence project to the Great Lakes Division. By doing so early, in June 1953, he limited time-consuming jockeying over the issue within the Corps and gained preparation time for those assigned to the project. Congress soon began discussing the project again, and contractors and engineering firms began to approach the Corps about future contracts. Indeed, once the project was approved, prospective bidders increased their pressure on the Corps. The Engineers were thus placed in a difficult position since they had to wait several months before formally receiving the assignment as agent for the Seaway Development Corporation. During that time, bidder inquiries increased, and Sturgis, wanting to give full answers, ordered preliminary planning.⁴⁶

The major reason, however, for Sturgis's expeditious handling of these preliminary matters was the fact that the Seaway, if approved and assigned to the Corps, would be on a tight schedule. The navigation works were closely tied to the power project, and the state and provincial authorities involved were anxious to get it done as quickly as possible. They needed to generate revenues

to begin paying off the project's indebtedness. Moving quickly on the work was essential to allow the most time for planning and construction. Updating all of the plans would require "considerable work." In particular, the mechanical and electrical features of the locks, Trower thought, were going to take a great deal of time and attention. Moreover, the need to work with the Power Authority of the State of New York on a "fractionalized," instead of the originally proposed "comprehensive," project was going to increase the time needed to complete it. Bureaucratic coordination was always time consuming.⁴⁷

The ability of the Great Lakes Division's Buffalo District to quickly prepare for the project had been a compelling justification for giving the assignment to that Division. Buffalo lived up to expectations by beginning preliminary work on organizing and planning for the project three weeks after Sturgis's approval to proceed with planning. Colonel Trower set things in motion by requesting that the old St. Lawrence River District files, which formed the basis for the 1942 report, be transferred to the Buffalo District from the North Atlantic Division.⁴⁸

Thus, early in 1954, as Congress considered the project for the last time, the Corps had already spent six months preparing itself in anticipation of eventually getting the assignment. During the summer and fall of 1953, Trower and his staff worked with the Buffalo District Engineer, Colonel Philip R. Garges, to finalize the organization and procedures that would be needed to construct the navigation works of the St. Lawrence Seaway. They submitted their report to Sturgis and Chorpening on 11 January 1954.⁴⁹

This joint Division-District report outlined the fundamental organization of the project. It also anticipated design revisions which would be necessary to permit separate construction of the navigation and the power projects, since the original 1942 report had based its plans on a joint, or comprehensive, power-navigation project. On 25 February 1954, just after Congress started debate on the Seaway, Trower and his staff were called to a meeting at the Office of the Chief of Engineers. At that meeting, participants went over details of the proposed organization. The Office of the Chief questioned several aspects of the plan, including the need to set up, for example, a separate St. Lawrence Seaway branch in the District office. Other matters discussed included the assignment of specific individuals to fill the jobs the project would create, as well as more mundane questions about the necessary office space in Buffalo and at the Division's headquarters in Chicago. Most questions were over matters of detail. The overall plan to organize the work on the St. Lawrence navigation improvements was approved as outlined in the joint report.⁵⁰

In working up their plan of operations, Trower and Garges had tried to estimate the time necessary to update designs and specifications for advertising. They had also sought to take into account technical progress since 1942 and the fact that the power and navigation works were to be built by separate entities. This effort had been necessary in order to estimate the size and cost of the needed engineering staff. Fundamentally, the organization of the navigation project revolved around assignment of operating responsibility for all phases to the Buffalo District Engineer under the supervision of the Division

Engineer in Chicago. Buffalo was to have responsibility for designs, plans, and specifications. As mentioned earlier, acquisition of the land necessary to complete the project was to be handled by the real estate branch of the Buffalo District. That branch would have to be expanded to meet the anticipated increased demands of the project, even though much of the real estate acquisition was to be handled by the Power Authority of the State of New York. Buffalo had no difficulty with this latter procedure as it had just completed the Mount Morris Dam in New York and the acquisition of necessary real estate on that project had been accomplished by the state authorities. Supervision and inspection in the field were to be accomplished by a St. Lawrence Seaway Area Office located at or near Massena. Since Massena was a small town, the actual location had much to do with whether or not sufficient housing could be found for the assigned staff. A similar problem affected overall construction—the joint power and navigation works were estimated to require about 8000 workers, most of whom would move to the area.⁵¹

The Division-District report of January 1954 provided detailed plans for this field supervision of the works, which would cover about 31 miles of river. Each of the locks—originally planned at three but later reduced to two—were major works requiring on-site personnel to ensure efficient construction and effective inspection. Essentially, both the Division and the District proposed a decentralized administrative structure. The canals, locks, dikes, dredging, and relocation aspects of the project each lent itself to fairly clear divisions for the purposes of supervision and inspection. The coordination of the major phases of construction, top-level field supervision, assignment of laboratory tasks, and basic administrative support would be the responsibility of the area office. The latter was initially to be in Buffalo, although later to be assigned to Massena once the project was fully under way. The area engineer was to be responsible directly to the District Engineer, although his operation was to receive staff support and supervision from the Division level. Division Engineer Trower estimated that this arrangement would provide necessary field supervision at a cost of about 3.8 percent of the total cost of the Seaway. Staffing estimates, which were for the most part later reached, were placed at 186 for maximum strength at both the area and District offices.⁵²

The District and Division offices had worked out tentative schedules of letting contracts, estimating that they could award contracts for excavation within three to four months. Buffalo anticipated that within one year they could place the major contracts for lock masonry, gates, and machinery. Both the District and the Division anticipated that the major problems would be timely acquisition of necessary real estate, coordination of construction of navigation works with those for power development, and coordination of some aspects of excavation and dike construction with New York State and Canada.⁵³

As thorough as the January 1954 joint report was, the Chief of Engineers had to decide whether to go further and make more detailed studies and plans even before the program was approved by Congress. General Sturgis ordered that such studies be made, something that the joint report advocated. Much needed to be done to complete all the necessary engineering studies, designs, plans, and specifications. The Engineers began a

detailed review to thoroughly analyze all features of the project and to develop a detailed engineering program. Buffalo estimated that the necessary work would require about "15 or 20 months" to complete. Sturgis's decision to go ahead was important for the later comparatively on-schedule completion of the project. Trower proposed to assign five or six engineers to the project for three to four months of intensive work. Receiving general approval to proceed, the Division Engineer then informally requested supplemental funds to recruit personnel and begin the review of existing plans to determine the extent of additional design work needed.⁵⁴

The result of these studies was that by the summer of 1954 the Chief had three design memos reviewing the 1942 plans, recommending necessary changes, and showing in detail the scheduling and organization necessary for the project. Once these studies were in hand, Sturgis called a two-day meeting in August 1954 in Washington for a full-scale review. The meeting, attended by the Division and District Engineers and their staffs, as well as several representatives from the Chief's office, discussed what in fact were to become the on-going issues of the navigation project: whether there were to be two or three locks, changes in guide walls from 1942 suggestions, problems of relocating utilities, the use of hydraulic models, relations with New York's Power Authority, etc. Perhaps the most important result of this gathering was the determination of a construction schedule and agreement "on the design criteria which were within the authority of the Office, Chief of Engineers to decide."⁵⁵

Trower's staff, by this time, had already begun subsurface explorations and other field work. They were also recruiting personnel for the engineering division of the Buffalo District so that design work could be completed. These early efforts enabled them to complete several other design memos soon after the Corps formally received the assignment as the Corporation's construction agent on 17 September 1954. Design memos IV(A), V, and VIII dealt with excavation and a comprehensive review of design criteria for the important Long Sault Canal. The memos were completed by the Buffalo office in October and December 1954 and February 1955. While these documents were subject to extensive review, their early completion contributed to the timely beginning of work on the Seaway. Indeed, the Corps was able to issue advance notice to prospective bidders for construction on 27 October 1954.⁵⁶

The Corps and the Corporation

The Corporation ultimately assigned broad authority to the Corps in the construction of the St. Lawrence Seaway. Nevertheless, the relationship between the two organizations was to prove a difficult one. In large part, this resulted from the Corporation's responsibility for the overall coordination of the project. Both the Corps and the Corporation had a large stake in the success of the Seaway. The Corps' task was more clearly focused than that faced by the Corporation. The Corporation had to pay attention to many problem-strewn facets of the project, among them a responsibility to Congress for assur-

ing that toll funds would be adequate to pay off the Seaway's construction debt. It also had the responsibility for dealing with the Canadians on all levels including political, financial, and legal.

One source of great tension between the Corps and the Corporation was the Corps' sense of Corporation "interference." For its part, the Corps wanted the project to be a success, that is, completed on time and at a cost somewhere near estimates. General Sturgis was determined that the relationship between the Corps and the Corporation be a good one. Nevertheless, the fact remained that officers in the Corps felt that the Corporation did not fully understand the complex engineering and construction problems involved in the Seaway project. As a result, personnel in the North Central Division and the Buffalo District expressed concern at times that the Corporation's procedures were slowing the project.

The Engineers, however, had to face the fact that Congress had given final responsibility for the Seaway to the Corporation. To be sure, the formal requirements of the enacting legislation gave way in practice to informal working relationships. Relationships which, despite the tensions created by teaming two such differently structured organizations, grew out of warm and cooperative interaction between individual Corps and Corporation officials. At the highest level, for instance, Sturgis was able to empathize with the problems Castle faced, such as maintaining good public relations and being wary of critics waiting for a slip-up in order to denounce the entire project.⁵⁷

In any event, Castle formally notified the Secretary of the Army in September 1954 that the Corps was to be the Corporation's design and construction agent for the navigation project. At the last minute, however, he made the Corps apprehensive about its role. On 2 September, in a letter to the Secretary of the Army, he formally requested the Corps of Engineers "to render certain services to this corporation in connection with the St. Lawrence River navigation project" In that request, perhaps unintentionally, he left vague the critical issue of authority and command in supervising construction. The Corps was to exercise "such supervision of construction operations as may be, from time to time, delegated to the U.S. Army Corps of Engineers by the St. Lawrence Seaway Development Corporation." Sturgis wanted a clearer statement of responsibility. On 17 September, Castle responded with a letter "in amplification of that [2 September] letter," in which he requested the Corps to serve as the Corporation's "agent for design and construction," specifically delegating to the Engineers "field construction supervision including job control to assure compliance with contract provisions." Nonetheless, "all of the activities assigned to the Corps of Engineers will be subject to the general direction, review and supervision of the Administrator or his designee."⁵⁸

While the second letter was better than the first, Sturgis later regretted not having further clarified the relationship. A little over a year later, in November 1955, he observed that "Perhaps anxiety to get the job curbed proper foresight." By then, organizational differences were readily apparent and he was bothered by breakdowns in the Corps command structure and the potential of "decisions by the Seaway [Corporation] which in our opinion are against sound engineering and economics."⁵⁹

Despite these concerns, on paper at least the Engineers were given broad authority for the acquisition of lands needed for the project; for the design of the navigation works; for the planning of construction and preparation of specifications and contracts; and for the actual supervision of the construction of the Seaway. All of these responsibilities were to be fulfilled by the office of the District Engineer in Buffalo, which, as we have seen, had begun work on the plans several months before the Corps' assignment as the Corporation's agent.

The relationship between the Corporation and the Corps in practice was more complex than the designation "agent" implied. The St. Lawrence Seaway Development Corporation was charged with overall supervision of the project and of the funds appropriate to build the Seaway. As a result, the Corporation required oversight over the responsibilities delegated to the Corps. This requirement became the area where the Corps and the Corporation tended to offend the sensibilities of each other. Both were engaged in a new experience. The Corporation, a newly created entity, had obviously never undertaken such a project before. In contrast, the Corps had vast experience in such civil works projects, but had never had to work so clearly in a subordinate role.

Despite Sturgis's later misgivings, an elaborate set of understandings, attempting to describe in detail the role the Corporation was to play in the Corps' work, had been worked out in the fall of 1954. The Corporation had to give formal approval to all matters which in the Corps' experience on similar projects had been submitted to the Chief of Engineers. Such matters were to be forwarded through command channels to the Chief's office, whence they would be transmitted to the Corporation. The arrangement also stipulated that the Corporation must endorse plans and specifications which were normally reviewed and approved by the Division Engineer and not forwarded to the Chief's office for further review.

To facilitate planning and scheduling, the Buffalo District office was to prepare a design memorandum for each major part of the project. To avoid repetition of certain overall procedures and design criteria, a General Design Memorandum (Design Memo IV) covered such issues as hydrology and geology. That memo was to be supplemented by specific design memoranda for the various major elements of the project. Each of these latter memoranda was to cover all engineering aspects and contain detailed design criteria and design analyses.⁶⁰

Eighteen of these design documents were approved in 1954. Once they were approved by the Chief of Engineers and the Corporation administrator, the Buffalo District office would prepare the final plans and the detailed specifications for each of the contracts to be let as part of the project. The detailed plans and specifications were then to move through channels—North Central Division and then the Office of the Chief of Engineers—eventually to be reviewed and approved by the Corporation administrator. In submitting its plans and specifications, the Buffalo District followed standard Corps procedure and kept to a schedule previously prepared by Colonel Trower. The District also submitted advertisements for contracts and progress reports according to that schedule.⁶¹

Accounting methods also followed standard Corps procedures. The project was broken down into its various worksites and component features. Costs were then estimated for those elements. That initial project breakdown served as the basis for all subsequent scheduling, budgeting, accounting, and reports of work performed. This strict accounting allowed both the Corps and the Corporation to keep abreast of costs, as well as enabling the Engineers to prepare a detailed project schedule. This schedule established the work that was to be performed, the chronological order by which it was to be completed, and the work's estimated cost. This standard Corps procedure allowed both the Engineers and the Corporation to plan for the orderly allocation of necessary funds, even though there would be changes in estimates, plans, and schedules.⁶²

To ensure time for full review by both the Corps and the Corporation, the Chief's office wanted about two to three months lead time on the design memos before the plans and specifications were worked up. That much time was not always necessary, especially with the first several contracts which were for relatively simple excavation projects. Nor was it always available as there was pressure from congressional supporters to get the project under way as quickly as possible.⁶³ A shorter time—four to six weeks—was anticipated for the necessary review and approval of the plans and specifications based on approved design memos. Work was to be advertised for 30 to 45 days; two weeks were scheduled for the consideration of bids.

Plans and specifications, however, were not the only matters subject to the Corporation's review. Contracts for more than \$100,000 had to be approved by the Corporation as well as being recommended by the Corps of Engineers. Contracts for under \$100,000 were subject to the approval of the District Engineer. Contract modifications involving more than a ten percent change in costs had to be coordinated with representatives of the Corporation.⁶⁴

Both the Corps and the Corporation carefully laid out inspection procedures. The Engineers were sensitive about these inspections. The Corps had its reputation to protect on general principles, but more specifically it had to accede to the wishes of a corporation with little experience in what was to be undertaken in building the St. Lawrence Seaway. The Corps insisted that the Corporation's oversight be no more than part of its general supervisory responsibilities; the Corporation was not to relieve the Corps of Engineers of any of its direct responsibility for the project. The Corps wanted to ensure that if there were problems, they would be addressed immediately, preferably in the field where the inspection was being made. To protect itself against criticism after the fact, the Corps insisted on a highly formal procedure of turning over the project to the Corporation. As the various contracts neared completion, representatives of both the Corps and the Corporation prepared for a joint inspection of the completed work to ensure that all requirements of the contract had been satisfactorily met. The Corps and the Corporation also elaborated a procedure for formal transfer of completed sections of the project. The Corps would formally notify the Corporation that particular part of the project was ready to be turned over to them, and the Corporation would then formally accept the completed work.⁶⁵

One of the more complex tasks of the Seaway project would be relocation of highways, railroad track, electric transmission lines, and water and sewer pipes. In most instances, these projects were less engineering and construction problems than they were tasks requiring legal, political, and public relations expertise. Because of the potential for legal and local political problems, the Corporation insisted on having a representative involved in all negotiations on relocation issues.⁶⁶

To achieve the necessary coordination between the Corporation and the Corps, the former established an office in Buffalo. While the formal procedures were carefully followed for most of the project, informal contacts grew and proved essential to the completion of the Seaway. From mid-1955 through 1958, when the project was almost complete, informal coordination conferences were held almost every two weeks. These meetings provided Corps, Corporation, and New York Power Authority personnel an opportunity to stay abreast of progress as well as problems.⁶⁷

This informal coordination was essential as a breakdown in working relationships could have delayed the entire project. Attention had to be paid to every serious issue that arose. Since so many parts of the complex project were related to other parts, a delay in one area had the potential of delaying the entire Seaway's completion. And neither the Corporation nor the Corps wanted delays. The Corporation always had to keep an eye on its critics, who would pounce on delay as an example of inefficiency. The Corps was sensitive to the fact that whether responsible or not, the Corporation might blame the Engineers for delays. The project remained remarkably on schedule for the most part, and that achievement can be attributed to the fact that the Corps had had extensive plans for the project ready by the time the Corporation chose the Engineers as its construction and planning agent. It was also a result of the two organizations working hard at cooperation despite Corps unease at being ultimately responsible to the Corporation, and the latter's sense that the Corps was trying to undermine its authority.