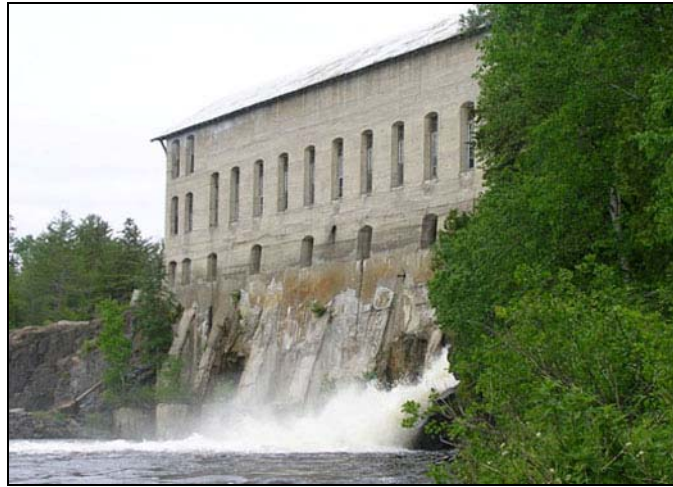


**CULTURAL HERITAGE RESOURCE
ASSESSMENT REPORT
CULTURAL HERITAGE LANDSCAPES &
BUILT HERITAGE**

**CLASS ENVIRONMENTAL ASSESSMENT
HOUND CHUTE HYDROELECTRIC GENERATING STATION
LOWER MONTREAL RIVER
TOWNSHIP OF LATCHFORD & TOWNSHIP OF COLEMAN
DISTRICT OF TIMISKAMING, ONTARIO**



December 2006

**Prepared for:
SENES Consultants Limited**

Prepared by:
UNTERMAN McPHAIL ASSOCIATES
Heritage Resource Management Consultants

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1.0 INTRODUCTION

SENES Consultants Limited retained Unterman McPhail Associates, Heritage Resource Management Consultants, to undertake a cultural heritage resource assessment and to present mitigation recommendations for the built heritage and cultural heritage landscape resources as part of the study for a new replacement hydroelectric generating station at the site of the existing Hound Chute plant on the Lower Montreal River, District of Timiskaming. Ontario Power Generation Inc. (OPG) is proposing to replace the small run-of-the-river hydroelectric generating station at Hound Chute to increase capacity from the existing 3.6 megawatts to a proposed 10 megawatts. The project includes construction of a new powerhouse and refurbishment of the associated civil works, such as the dams. The proposed undertaking is subject to the requirements of OPG's Class Environmental Assessment for Modifications to Hydroelectric Facilities (1993, renewed 1998, 2000, 2003 and 2005). The cultural heritage resource assessment forms part of the environmental assessment planning process for this undertaking.

The principal objectives of this assessment report are:

- to prepare an historical summary of the Euro-Canadian settlement history and development of the study area through the review of both primary and secondary sources as well as historical mapping;
- to conduct a field survey to identify built heritage features and cultural heritage landscape units found within the study area;
- to identify sensitivities for change in the study area; and,
- to make general mitigation recommendations respecting the proposed undertaking.

The legislative framework for environmental assessments and cultural heritage resources is outlined in Section 2 and the study methodology is described in Section 3. The historical summary is included in Section 4. Section 5 contains the description of the cultural heritage landscape and the built heritage features, based on the on-site recording fieldwork undertaken on June 12, 2006. Section 6 outlines potential effects of the proposed work to the resources while Section 7 sets out mitigation measures to alleviate the effects. Historical maps, design drawings and photographs are included in Appendix A. Photographs relating to Hound Chute Generating Station are found in Appendix B.

Hound Chute Generating Station is located 9.7 km (6 miles) south of the Town of Cobalt and 9.7 km (6 miles) east of the Town of Latchford (*Figure 1*). The east-west boundary between Coleman Township and Latchford runs through the OPG lease site. The powerhouse is located in the Town of Latchford and the weir is located in Coleman Township. An all-season road leading from Silver Fields Road provides access to the station site. The first three units of the plant were placed in service in 1910 with a fourth unit added in 1911.

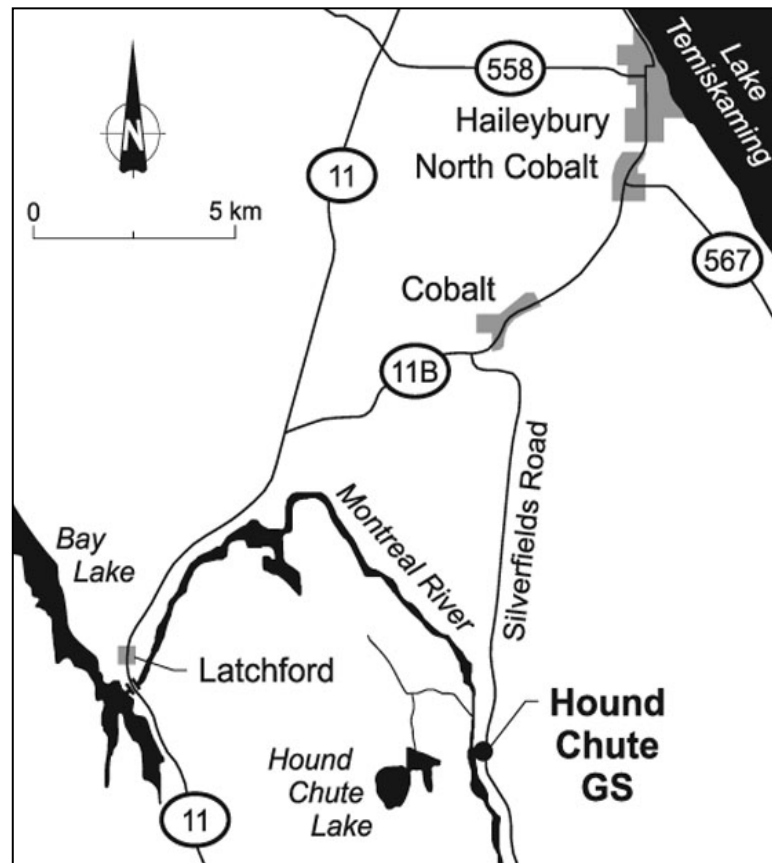


Figure 1. Location Plan, OPG (2006).

2.0 ENVIRONMENTAL ASSESSMENT & CULTURAL HERITAGE RESOURCES

The need for the identification, evaluation, management and conservation of Ontario's heritage is acknowledged as an essential component of environmental assessment and municipal planning in Ontario.

This analysis of cultural heritage resources in the study area addresses those above-ground, person-made heritage features over 40 years old. The application of this rolling forty-year principle is an accepted federal and provincial practice for the preliminary identification of cultural heritage features that may be of heritage value. Its application does not imply however that all built heritage features or cultural heritage landscapes that are over forty years old are worthy of the same levels of protection or preservation. The analysis throughout the study process addresses that part of the *Environmental*

Assessment Act, subsection 1(c), that defines “*environment*” to include:

“...cultural conditions that influence the life of humans or a community”;

as well as,

“any building, structure, machine or other device or thing made by humans”.

Design and construction activities may potentially affect cultural heritage resources in a number of ways. The effects may include displacement through removal or demolition and/or disruption by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with the character of the cultural heritage resources and, or their setting.

3.0 CULTURAL HERITAGE LANDSCAPES & BUILT HERITAGE FEATURES

3.1 Introduction

The *Ontario Heritage Act* gives the Ontario Ministry of Culture (MCL) the responsibility for the conservation, protection and preservation of Ontario’s culture heritage resources. Section 2 of the *Ontario Heritage Act* charges the Minister with the responsibility to,

“...determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario.”

MCL describes heritage buildings and structures, cultural heritage landscapes and archaeological resources as cultural heritage resources. Since cultural heritage resources may be adversely impacted by both public and private land development, it is incumbent upon planning and approval authorities to consider heritage resources when making planning decisions. Criteria for determining cultural heritage value or interest of provincial significance were set out under Ontario Regulation 10/06 made under the *Ontario Heritage Act*, as amended in 2005.

“A property may be designated under section 34.5 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest of provincial significance:

1. The property represents or demonstrates a theme or pattern in Ontario’s history.
2. The property yields, or has the potential to yield, information that contributes to an understanding of Ontario’s history.
3. The property demonstrates an uncommon, rare or unique aspect of Ontario’s cultural heritage.
4. The property is of aesthetic, visual or contextual importance to the province.
5. The property demonstrates a high degree of excellence or creative, technical or scientific achievement at a provincial level in a given period.

6. The property has a strong or special association with the entire province or with a community that is found in more than one part of the province. The association exists for historic, social, or cultural reasons or because of traditional use.
7. The property has a strong or special association with the life or work of a person, group or organization of importance to the province or with an event of importance to the province.
8. The property is located in unorganized territory and the Minister determines that there is a provincial interest in the protection of the property.” O.Reg 10/06, s. 1(2).

The two guidelines assist in the assessment of cultural heritage resources as part of an environmental assessment. They are, *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (October 1992), and, *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (1980). The *Guidelines on the Man-Made Heritage Component of Environmental Assessments* state:

“When speaking of man-made heritage we are concerned with works of man and the effects of his activities in the environment rather than with moveable human artifacts or those environments that are natural and completely undisturbed by man.”

Both guidelines state one may distinguish broadly between two basic ways of visually experiencing cultural heritage resources in the environment, that is, as cultural heritage landscapes and as built heritage features. Cultural heritage landscapes are a geographical area perceived as a collection of individual person-made built heritage features set into a whole such as historical settlements, farm complexes, waterscapes, roadscape, railways, tourist and recreation facilities, etc. They emphasize the interrelationship of people and the natural environment and convey information about the processes and activities that have shaped a community. Cultural heritage landscapes may be organically evolved landscapes as opposed to designed landscapes. Some are ‘continuing landscapes’, which maintain the historic use and continue to evolve, while others are ‘relict landscapes’ where the evolutionary process has come to an end but important landscape or built heritage features from its historic use are still visible.

Built heritage features are individual, person-made or modified, parts of a cultural heritage landscape such as buildings or structures of various types, cemeteries, planting and landscaping structures, etc.

The guidelines describe the attributes necessary for the identification and evaluation of any discrete aggregation of person-made features or cultural heritage landscapes and the attributes necessary for the identification and evaluation of cultural features or built heritage features. Aggregations of individual cultural features usually form areas of homogenous character such as a rural area, a village, and a streetscape, etc. Heritage attributes, in relation to a property, are defined in the *Ontario Heritage Act* as the attributes of the property that cause it to have cultural heritage value or interest.

In addition, the Ministry of Culture and the former Ontario Hydro had a Memorandum of Understanding that provided guidance in undertaking environmental assessments for hydroelectric generating stations.

The Ontario Regulation 10/06, two MCL Guidelines and OPG's Class Environmental Assessment for Modifications to Hydroelectric Generating Stations were consulted for this report.

3.2 Assessment Methodology

For the purposes of this built heritage and cultural heritage landscape assessment Unterman McPhail Associates undertook the following tasks:

- the identification of major historical themes and activities of the study area through historical research and a review of topographical and historic mapping;
- the identification of built heritage features and cultural heritage landscape units within the study area through major historical themes and activities and historic mapping; and,
- field survey of Hound Chute Generating Station to identify any of built heritage features and principal cultural heritage landscape units within the study area.

The field survey work for the generating station and its cultural landscape context was undertaken on June 12, 2006.

3.3 Public Consultation and Recognition

Representatives of the Ontario Ministry of Culture were consulted. *Planning for Hydroelectric Generating Station as a Cultural Resources*, a study undertaken in the early 1980s by the former Ministry of Citizenship and Culture, in co-operation with Ontario Hydro provided a preliminary ranking, Class A, B or C, of the hydroelectric generating stations now owned by OPG. Class A stations were deemed to be those of the greatest heritage importance, Class B a good example of a type and Class C a fair example. Hound Chute was identified as a Class A structure as typical example of a low-head development from the early 20th century and for its association with the Cobalt Mining Camp.

The National Historic Sites and Monuments Board recognized the Cobalt Mining District as a National Historic Site in 2001. A provincial plaque commemorating the Cobalt Mining Camp is located on Silver Street in Cobalt. The historical theme segment relating to the development of the Cobalt Silver Camp was identified in *A Topical Organization of Ontario History* (1972). It was rated 'A' in terms of its provincial heritage significance. The Cobalt Mining Museum considers the Hound Chute Generating Station to be a significant heritage feature in the interpretation of the Cobalt Mining Camp. There are no identified Ontario Heritage Trust easement properties, federally recognized properties or cemeteries within, beside or abutting the study area.

Hound Chute Generating Station is located in the Townships of Latchford and Coleman. Historically, the Towns of Cobalt and Latchford and the Township of Coleman were connected to the development of the plant. As a result of these linkages all three of these municipalities were contacted concerning any heritage issues in regard to the Hound Chute Generating Station. The Town of Cobalt has no municipal jurisdiction over the property, however, it does have concerns as to the future of Hound Chute as it relates to Cobalt's various tourism initiatives. The Clerk Treasurer of Coleman Township has stated the municipality does not consider the dam to be of cultural heritage significance. The Clerk Treasurer for the Township of Latchford has stated the powerhouse of the Hound Chute Generating Station is not included on a municipal heritage inventory or designated under the *Ontario Heritage Act*.

4.0 DESCRIPTION OF THE PROJECT

4.1 Background

The information contained in Section 4.0 regarding anticipated changes to Hound Chute Generating Station and the rationale as to why the changes will occur is provided by SENES Consultants Limited and OPG.

The Hound Chute Generating Stations is a small run-of-the-river hydroelectric facility that has provided hydro-power since 1910. Small hydroelectric generating stations are comprised of a number of elements including: civil works such as dams, weirs and spillways; water conveyance structures such as intake canals or penstocks; powerhouses where generators and turbines are located; transformer and transmission lines; accessory buildings; and access roads and parking lots; on the landscape that all contribute to power production and water management. The general layout of this facility will remain unchanged from the present situation and the station will continue with its historic role of providing power to Ontario.

The powerhouse and water conveyance structures at the Hound Chute Generating Station are now at the end of its designed service life and need to be replaced; however, the dams and other infrastructure can be refurbished and the overall layout of the facilities will be unchanged.

OPG's proposal is to continue to operate Hound Chute as it has historically operated - as a hydroelectric generating station. While the facility will be upgraded, the generating capacity increased, civil structures refurbished and latest technology employed, the same basic run-of-the-river generating station concept remains in place since the first small hydroelectric generating stations were developed at the turn of the twentieth century.

4.2 Hound Chute Generating Station

The 3.6 megawatt Hound Chute GS is Hound Chute Generating Station is located 9.7 km (6 miles) south of the Town of Cobalt and 9.7 km (6 miles) east of the Town of Latchford. The east-west boundary between Coleman Township and Latchford runs through the OPG lease site. The powerhouse is located in the Town of Latchford and the weir is located in Coleman Township.

The hydroelectric generating station has a dam, intake, canal, powerhouse, equipment, transmission line, access road and a former log chute. The first three units of the plant at were placed in service in 1910 with a fourth unit added in 1911. An all-season road leading from Silver Fields Road provides access to the station site.

OPG plans to locate the new Hound Chute powerhouse on the site of the existing powerhouse. The operation of the facility will remain the same as will the overall layout of the facility with respect to the dam, intake, forebay, transmission line and access road.

4.3 Summary of Changes and OPG's Rationale for Change

In general, the overall layout of the Hound Chute Generating Station, with respect to its orientation to the river, will remain intact. The dam, intake and canal, will require refurbishment and will remain in their present locations. The overall layout of the site with respect to infrastructure, access and parking will remain the same. The major change with respect to the generating station is the replacement of the existing powerhouse.

The proposed new powerhouse is to be located on the footprint of the existing one therefore making its retention impossible. Extensive external and internal studies by OPG have concluded that the complete demolition and then re-build of the Hound Chute powerhouse is the most economical solution (i.e. the projects aren't feasible without building on the same footprint), as well as the preferred with respect to worker and public safety and liability.

5.0 HISTORICAL SUMMARY

5.1 Historical Overview of Study Area

European settlement in the Cobalt area has its roots in the fur trade of the early 1600s. Historically the Montreal River was an important transportation route that connected the region through Lake Temiskaming/Ottawa River system with the St. Lawrence River. The French built the fur trade fort, Fort Témiscamingue in the early 1700s. It was located

at roughly the midpoint of Lake Temiskaming where the west (Ontario) and east (Quebec) banks almost meet. The strategic site known in Algonquin as Obadjiwan, “at the Narrows”, has a long history for the Algonquin and Anishnabe people as an economic, social and cultural centre. Fort Témiscamingue, later Fort Temiskaming under the English, played a major role in the fur trade throughout the 1700 and 1800s. Its operation passed from the French to the North West Company and finally to the Hudson’s Bay Company until its closure in 1902. As the fur trade declined in importance through the second half of the 1800s, the timber trade replaced it as the economic basis of the region. Once the land was cleared by the lumberman, settlers began to move in. “Humphrey’s Depot”, later Haileybury, was established in 1889 by Charles Farr, a former Hudson’s Bay Company chief agent at Fort Temiskaming. The community of New Liskeard, 8.1 km (5 miles) to the north of Haileybury, was founded in 1891.

Settlement was slow as a result of the long and difficult journey to access the region. Fortunately, the provincial government became interested in promoting the colonization of Northern Ontario, particularly the agricultural settlement of the rich clay belt at the north end of Lake Temiskaming. The Ontario Legislature committed \$40,000 in 1900 for the construction of a rail line. The Timiskaming & Northern Ontario Railroad (T&NO), now the Ontario Northland Railway (ONR), initially ran from North Bay to New Liskeard and was later extended to Englehart, Monteith and Cochrane. As construction proceeded northward, a large silver deposit was discovered in August 1903 at Mile 103 just south of Haileybury. The silver ore discovery adjacent the rail line led to the development of Cobalt mining area.

Easy rail access directly from Toronto hastened the rapid growth of the mining camp. Within two years, Cobalt recorded 16 mines in operation, had a population of 20,000.¹ At the time of discovery, the Cobalt mining camp contained the world’s richest deposits of silver.² The first silver finds were shallow veins of native silver that were easily mined with picks. Once the silver near the surface was exhausted, vertical shafts and horizontal tunnels (adits) were constructed to access the silver underground. The ore was processed and concentrated in Cobalt before being shipped south by train for refining. At the height of the boom in 1911 the Cobalt mining camp comprised 70 mines and 13 concentrating mills.³ Production of silver was falling by 1915 and by the late 1920s the boom was over.

The rapid development of Cobalt mining area created a distinctive landscape. The mines were generally located to the east of the T&NO rail line in Coleman Township while the town of Cobalt grew up to the west of the tracks. Head frames, processing plants, shafts, adits, pits, tailings, auxiliary buildings, roads, streetcar line (originally a rail freight line), compressed air pipelines and hydro lines characterized the mining landscape. The Cobalt

¹ “Historic Cobalt National Historic Site brochure”, (Town of Cobalt, n.d.).

² Parks Canada. “Commemorative Integrity Statement: Cobalt Mining District” (National Historic Site of Canada, Cobalt, Ontario. March 26, 2004), 18.

³ Ibid, 18.

townsite grew up haphazardly on a steep hillside to the west of the rail line before roads and services could be properly laid out. Commercial and institutional buildings clustered around the train station while the residential neighbourhoods consisting of narrow streets, stairways and frame buildings straggled up the side of the hill. Unlike later planned resource towns industrial and residential areas intersected in Cobalt. Some miners' housing existed at the mines and three mines were located within the town itself.

The flood of prospectors who arrived in Cobalt in 1903 quickly fanned out to the north and west. In the following years silver was discovered at Elk Lake and Gowganda and gold at Larder Lake, the Porcupine, Swastika, Kirkland Lake and Timmins. The financial resources and organizational expertise acquired at Cobalt aided in the development of the other hardrock mining camps of northeastern Ontario.

The expansion of the mining industry across northeastern Ontario in the first part of the 20th century created a demand for power. Many of the waterfalls on the rivers in proximity to the mines were developed for hydroelectric power and in one case, for compressed air. The Mines Power, Limited at Matabitchuan⁴ and the Cobalt Power Company at Ragged Chute and Hound Chute opened plants in 1910, providing much needed power to the Cobalt mining camp. The Cobalt Power Company produced compressed air hydraulically at the Ragged Chute plant. Initially the mines had individual steam boilers for power that numbered 158 boilers operated by 92 mining companies by 1908.⁵ The Bureau of Mines noted in 1923 that:

“Soon after the discovery in 1903 of the rich silver mines of Cobalt, it became apparent that the long haul required to bring coal from Pennsylvania and West Virginia for the production of power imposed a severe burden upon the silver mining industry and this was speedily removed by utilizing the falls on several of the rivers in the Cobalt area where waterpower is abundant.”⁶

The construction of the power plants in close proximity to the Cobalt mining area significantly reduced the operating costs of the mines and promoted further exploration and longevity of the mining operations. The first plants were augmented with the construction of Fountain Falls in 1914 and Lower Notch in 1930.

The arrival of the T&NO also benefited the forest industry. Timber limits, notably by the Gilkes Brothers and J. R. Booth of Ottawa, had extended to the Montreal River by the late 1800s. The square-timber trade that had been the mainstay of the industry had run its course in Northeastern Ontario by the early 1900s; however, the market for sawn lumber was strong as reflected in the growth of the communities of Latchford and Elk Lake on

⁴ E. A. Wallberg and F. John Bell of Montreal formed the Mines Power, Limited that developed the Matabitchan plant. E. A. Wallberg was also involved in the development of the Wawaitin plant on the Mattagami River.

⁵ Alex Gray, “Compressed Air for Mining in Cobalt”, *Mineral World* (Vol. 29, December 12, 1908), 877.

⁶ *Ontario Department of Mines Bulletin* (No. 46, 1923), 2.

the Montreal River. The pulp and paper business in towns such as Iroquois Falls was just beginning its rise. To preserve the region's massive timber stands for future, managed use, the government of Ontario created the Temagami Forest Reserve in 1901, expanded in 1904. The Montreal River provided an ideal transportation route to drive logs from the interior to mills at Latchford on the Montreal River or New Liskeard on Lake Temiskaming. At the time of construction of Hound Chute Generating Station it was noted that logs were piled 30 feet deep on the frozen Montreal River waiting for the spring freshet.⁷

The T&NO rail line served as the only link to the south to Toronto until the Ontario Department of Northern Development commenced construction on the new Ferguson Highway in 1925. The first section opened was the Cobalt-Latchford stretch, graveled in 1925. The North Bay-Cochrane Trunk Road was finished in 1927 and officially opened on July 2 of that year. The highway was named after George Howard Ferguson, the Ontario premier of the day. The entire route from north of Severn Bridge at the southern boundary of Muskoka became known as the Ferguson Highway. The Department of Highways assumed responsibility for all highways in the province in 1937 and designated the route as King's Highway No. 11. The original gravel roadway was paved in sections over the intervening years. Highway 11 currently forms part of the Trans-Canada Highway. A new section of Highway 11 constructed in 1963 bypassed the Tri-Town communities of Cobalt, Haileybury and New Liskeard. The old Highway 11 was renumbered Highway 11B at that time.

The mining of cobalt, new silver discoveries and the reprocessing of tailing revitalized the Town of Cobalt from the 1940s until about 1960. Since that time production has steadily declined and the remaining Cobalt silver mines ceased operation in 1989. With its rich history, distinctive mining landscape and abundance of physical resources, the Cobalt Mining Camp is now being developed into a heritage tourism destination.

5.2 Hound Chute Generating Station

Hound Chute Generating Station is located on the Lower Montreal River, approximately 9.7 km (6 miles) south of Cobalt and 9.7 km (6 miles) east of Latchford, in the geographic Townships of Latchford and Coleman, formerly the unorganized territory of Gillies Limited. It is roughly the same distance below Gillies' Depot on the T&NO railway at the Montreal River. The plant is situated on the east side of the river with the dam and headworks to the north of the powerhouse.

The Cobalt mining camp was supplied with power from the Matabitchuan Generating Station of the Mines Power, Limited in March 1910 and the Hound Chute Generating Station of the Cobalt Power Company in April 1910. Ragged Chute Compressed Air

⁷ *The Canadian Engineer* (October 13, 1910), 500-501.

Plant was in production by late summer of the same year. Hound Chute Generating Station was the second plant to provide power to the Cobalt mines and the first on the Montreal River.

C. A. and B. C. Beck incorporated the Cobalt Power Company, Limited in December 1906 with capital of \$500,000.⁸ The company secured a lease for waterpower on the Montreal River at Hound Chute Falls together with about 70 acres of land and “had permission to construct, maintain, complete, and operate works for the production, sale and distribution of electricity for the purposes of light, heat, and power”.⁹ Preliminary investigations were carried out in 1906 and 1907 with construction commencing in Fall 1908.

A. Vonaesch, M. E., Hydraulic Engineer of the William Kennedy & Sons, Limited, Owen Sound, Ontario, designed the Hound Chute plant including the hydraulic machinery. The resident engineer was A. Gillies, B. A. Sc. William Kennedy & Sons furnished the hydraulic equipment and General Electric Company of Sweden through dealers Kilman, Pullen and Burnham, Toronto supplied the electric equipment.

The natural head at the Hound Chute Falls was 4.9 m (16-ft.) at the average low water discharge. The engineers determined that by going downstream from the falls roughly 427 m (1,400-ft.) the head was increased to 5.6 m (18-ft. 4-in.). It was also shown that the high riverbanks between Hound Chute Falls and Latchford permitted the water level to be raised 4.6 m (15-ft.) without affecting the waterpower at Latchford by back swell. With these measures, an average operating head of 9.2 m (32.2-ft.) was achieved at the plant.

The design of the plant made use of an old riverbed to the east of the current course of the Montreal River. A temporary timber dam was built at the narrows just above Hound Chute Falls to raise the water level the desired 4.6 m (15-ft.). A log slide was provided for lumbering operations at low water. The intention was to replace the timber dam with a concrete spillway.¹⁰

A headrace following the old riverbed was prepared. Two concrete stop log piers and abutments were built at the intake for the headrace. The concrete in the piers was reinforced with steel rods. The tops of the piers and abutments were set 5-ft. higher than the crest of the dam as a protection against high water. The headrace intake was built right at the beginning to act as a cofferdam during the construction of the canal and powerhouse. It could also be used in a similar way for future repairs in the canal and to the powerhouse. The distance between the piers and abutments was 4.9 m (16-ft.).

⁸ M. E. Vonaesch, “The Hydro-Electric Plant of the Cobalt Power Company at Hound Chute”, *The Canadian Engineer* (October 13, 1916), 499-503. This article provides the basis for the description of the plant at the time of construction.

⁹ *The Canadian Engineer* (October 13, 1910), 499.

¹⁰ *Ibid*, 501.

Rock-filled cribs were built from the abutment core walls to rock bottom, into both sides. Additional cribs protected the canal banks where necessary. The east bank of the headrace was rip-rapped while the west bank being rock was left in its natural state. The old riverbed was followed as much as possible resulting in little blasting except at the powerhouse.

The powerhouse was built about 427 m (1,400ft.) below the headrace intake. It angles across the south end of the canal, generally oriented north to south. The concrete structure, partially reinforced was set on rock. It measured 9.6 m (31-ft. 6-in.) wide by 39.6 m (130-ft.) long. Timber trusses framed the gable roof. A large round-headed doorway for the movement of machinery was offset to the east end of the south end wall. The initials 'C. P. Co.' and the date '1910' were incised in the concrete above the door. Rows of rectangular window openings fitted with operable sash extended along the long east and west walls.

The capacity of the plant was four vertical generating units of which three were installed in 1910 and the fourth the following year. Vertically the powerhouse could be divided into four sections for a total height of 25 m (82-ft.): foundation with draft tubes, wheel chambers, thrust deck and generator floor. The draft tubes for the four vertical units were made of concrete with 6.1 m (20-ft.) draft, while the exciter units had steel draft tubes of roughly the same length. The thrust deck was not built the full width of the powerhouse to permit a clear opening from the generator floor into the wheel chamber to allow access for the crane to lift any part of the turbine onto the generator floor. A gate, 3.1 m (10-ft.) high by 4.6 m (15-ft.) wide with bypass and gate lifting apparatus and two stoplog checks was located at the intake of each turbine chamber. A rack with platform was situated at the head of each intake. A switchboard room, 4.6 m (15-ft.) wide, was located at the west end of the generating floor.

The selection of vertical turbine and generating units was related to the potential for flooding as a result of high water in the spring and logjams. A vertical turbine, direct connected to a vertical generator, allowed the generator to be set above high water levels. A single runner was chosen for simplicity, efficiency and reliability. Each of the four units had a capacity of 1,335 hp under 32.5-ft. head, running at 150 rpm. A Francis type turbine was used. An oil-pressured governor manufactured by Riva & Company of Milan, Italy regulated each unit.¹¹ Swedish General Electric supplied the 875 kVa, 60 cycle, 3-phase, alternating generators.

The Cobalt Power Company, Limited and the British Canadian Power Company, Limited, formerly the Mines Power, Limited, amalgamated in 1911 to form the Northern Ontario Light and Power Company. The company operated Hound Chute and

¹¹ William Kennedy & Sons, Limited, Owen Sound were noted as the sole agents of the Riva governors in North America in *The Canadian Engineer* (October 13, 1910), 503.

Matabitchuan generating stations in addition to Ragged Chute Compressed Air Plant. Additional capacity was developed at Fountain Falls on the Montreal River and Charlton on the Blanche River in 1914. A transmission line was extended from the Cobalt substation to the developing mines at Kirkland Lake in 1916. By 1923 the Northern Ontario Light and Power Company provided power to Kirkland Lake, Cobalt, South Lorrain, New Liskeard and Haileybury.¹² Power from Hound Chute and Fountain Falls was transmitted to the Cobalt substation. The Cobalt substation served as the distribution point for the greater part of the load. Transformers stepped down the voltage from the Montreal River plants as well as Matabitchuan. The substation also contained two air compressors to supplement the compressed air produced hydraulically at Ragged Chute.

The capacity in the system of the Northern Ontario Light and Power Company was increased in 1923 and 1924 by the replacement of the turbines at the Matabitchuan plant with four new units of additional horsepower. The storage of water was increased for the plants on the Montreal River by a new dam at Matawapika Falls, about 29 km (18 miles) north of Latchford at the outlet of Lady Evelyn Lake.

Canada Northern Power Corporation, controlled by Nesbitt, Thomson and Company a Montreal based securities firm, acquired the Northern Ontario Light and Power Company in 1926. At that time, the Northern Ontario Light and Power Company operated generating stations on the Montreal and Matabitchuan rivers and the hydraulic compressed air plant that supplied power to the Cobalt, South Lorrain and Kirkland Lake areas. The Canada Northern Power Corporation had acquired the Northern Canada Power Company and the Quinze Power Company in 1925. With these acquisitions, the Canada Northern Power Corporation controlled all the hydroelectric power in the gold and silver mining areas of Northern Ontario in the Districts of Timiskaming and Cochrane. In addition the Canada Northern Power Corporation owned Great Northern Power Company and Porcupine Power and Telephone Company. Two new subsidiaries were created in December 1928 to separate the Ontario operations from those in Quebec. The Northern Ontario Power Company Limited controlling all operations in Ontario had its head office in New Liskeard. Capacity on the Montreal River was increased with the construction of Upper Notch Generating Station in 1930.

The Hydro Electric Power Commission (HEPC) acquired all the assets of the Canada Northern Power Corporation on November 30, 1944. The headrace intake was largely removed sometime prior to 1952 (*See Appendix A: Hound Chute Development, Nov. 6, 1952*). Initially the Hound Chute plant was fully manned and the operators, one per shift, were housed at the hydro colony at Ragged Chute. The station was modified to automatic shutdown in 1969. The control centre was located at Upper Notch Generating Station. With the redevelopment of Upper Notch and Fountain Falls for the new Lower Notch

¹² *Ontario Department of Mines Bulletin* (No. 46, 1923), 13.

Generating Station, control of the Hound Chute plant was transferred to New Liskeard TS.

Concrete repairs were undertaken on the downstream wall of the powerhouse and the tailrace piers in 1971-1972. On July 10, 1989, G4 unit was shutdown for a major overhaul including the following mechanical work: new headgate, cement work to scroll case and draft tube, new cast steel runner, new ac and dc motor gear driven gate operator, new air brake system, new digital speed switches. A major overhaul of the rotor station was undertaken as well. Work was completed on March 30, 1990.

6.0 IDENTIFICATION OF CULTURAL HERITAGE LANDSCAPES & BUILT HERITAGE FEATURES

6.1 Introduction

For the purposes of cultural heritage landscape and built heritage feature identification, this section provides a brief description of the existing environment, the principal built heritage features and the principal cultural heritage landscape units affected by the undertaking.

6.2 Description of Existing Environment

The Precambrian Shield underlies most of Northern Ontario. In some areas, such as around Cobalt, a wealth of precious and base minerals lay beneath the Boreal forest of conifers and occasional stands of hardwood. The land near Hound Chute was noted in 1910 as being forest-covered with gentle slopes and a rocky base.¹³

The Montreal River was an important transportation route for aboriginals, fur traders and early lumberman before being adapted to produce power. It was well suited for the development of hydroelectric power with a number of waterfalls in relatively close proximity of the Cobalt mining camp. First exploited for the Cobalt mining companies, the power was provided to other mining camps, notably Kirkland Lake, residential users and pulp and paper companies. Hound Chute Generating Station, constructed in 1910, was the first site developed on the Montreal River for hydroelectric power. Ragged Chute, 3.2 km (2 miles) downstream, went into service in 1910 as well. Capacity along the river was increased with the construction two plants further downstream: Fountain Falls (1914) and Upper Notch (1930) and one plant upstream: Indian Chute (1922). The construction of Lower Notch in 1970 combined the available heads of the Fountain Falls and Upper Notch into the new station. The redevelopment entailed the flooding out of the two earlier facilities. A private company, Canadian Hydro, redeveloped the Ragged Chute site in 1991 for hydroelectricity.

¹³ *The Canadian Engineer* (October 13, 1910), 500.

The Montreal River has its headwaters on the heights of land between Hudson's Bay and the St. Lawrence River, 321 m (1250-ft.) above sea level. The length of the river is approximately 282 km (175 miles). The headwaters include Shining, Sams, Pigeon and Duncan Lakes. The river flows into Lake Temiskaming, which is an expansion of the Upper Ottawa River, roughly 25.8 km (16 miles) below Hound Chute. A dam at Matawapika Falls, at the outlet of Lady Evelyn Lake, 29 km (18 miles) north of Latchford, stored water for the Hound Chute plant when it was first built. This dam was rebuilt in 1926 to a height of 5.6 m (18-ft. 6-in.). It was described in 1926 as having one wing of earth and rock fill, 187-ft. long, between an island the south shore and a concrete wing 99-ft. long, with four sluices, across the north channel¹⁴. The Evelyn Dam replaced the Matawapika Dam in 1972. The Evelyn Dam consists of four sluices; the stoplogs are removed/replaced with a power operated spud winch. A dam at Latchford, at the outlet of Bay Lake, was historically owned and controlled by the Federal Government for the benefit of the power stations, except during navigation season.

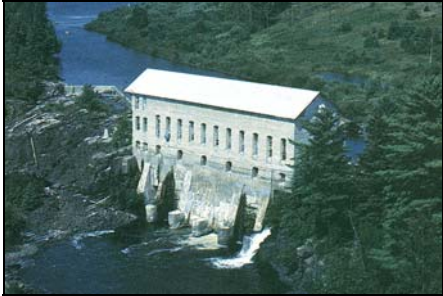


A Water Management Plan for the Montreal River System addressing the management of water levels and flows in the river as they are affected by the operation of waterpower and water control projects has been developed recently. The plan was the result of a partnership between OPG, Ontario Ministry of Natural Resources, the Department of Public Works and Government Services and Canadian Hydro Developers that have facilities along the river and affect the river's levels and flows.

6.3 Description of Identified Cultural Heritage Landscapes & Built Heritage Features

Unterman McPhail Associates identified principal cultural heritage landscapes and principal, above-ground, built heritage features older than forty years within and adjacent to the study area. The existing Hound Chute Generating Station was surveyed on June 12, 2006. A description of the identified built heritage features and cultural heritage landscapes is contained in Table 1. The sites are mapped on Figure 2. Photographs for Hound Chute Generating Station are located in Appendix B.

¹⁴ *Ontario Department of Mines Bulletin* (No. 46, 1926), 11.

**TABLE 1: HOUND CHUTE GENERATING STATION:
 IDENTIFIED CULTURAL HERITAGE LANDSCAPES AND BUILT HERITAGE FEATURES**

Site #	Resource Type	Category	Location/Description	Photographs of Resources
1.	CHL	Generating Station	<p>Hound Chute Generating Station, Lower Montreal River, geographic Townships of Latchford and Coleman.</p> <p>Hydroelectric generating station, 3.6 megawatt facility with dam, intake, canal, powerhouse, equipment, transmission line, access road as well as former log chute. Built in 1910.</p>	
2.	BHF	Generating Station	<p>Hound Chute GS dam, north of the powerhouse.</p> <p>Concrete dam built <i>circa</i> 1910, replaced a temporary timber dam. Dam formerly incorporated a log chute.</p>	
3.	CHL	Generating Station	<p>Hound Chute GS headrace intake (ruins).</p> <p>Two concrete stoplog piers and abutments were built at the headrace intake at the beginning of construction in 1908. The distance between the piers and abutments was 4.9 m (16-ft.). The intake structure was removed pre-1952.</p>	

**TABLE 1: HOUND CHUTE GENERATING STATION:
 IDENTIFIED CULTURAL HERITAGE LANDSCAPES AND BUILT HERITAGE FEATURES**




Site #	Resource Type	Category	Location/Description	Photographs of Resources
4.	CHL	Generating Station	<p>Hound Chute GS, canal.</p> <p>The canal or headrace extends 427 m (1,400-ft.) from the former intake to the powerhouse. The canal built 1908-10, made use of an old riverbed along the east bank of the river. The dam diverts the water into the canal directly to the headgates.</p>	
5.	CHL	Generating Station	<p>Hound Chute GS, powerhouse.</p> <p>The concrete powerhouse measures 9.6 m (31-ft. 6-in.) wide by 39.6 m (130-ft.) long. The initials 'C. P. Co.' and the date '1910' are incised in the wall above the large round-headed doorway. The timber frame gable roof is clad in sheet metal. The east end of the building at the headworks has been modified. Interior includes turbines, generators, governors and crane.</p>	
6.	CHL	Waterscape	<p>Montreal River</p> <p>The Montreal River flows approximately 282 km (175 miles) south from its source close to Matachewan to join the Matabitchuan River; both rivers empty into Lake Timiskaming, an expansion of the Upper Ottawa River. In the vicinity of Hound Chute it flows north to south. Historically it has been used as a trading route and for logging and power generation</p>	



Figure 2. Hound Chute Generating Station: Identified Cultural Heritage Landscapes and Built Heritage Features. SENES Consultant Limited as modified by Unterman McPhail Associates (2006).

The federal interest in Cobalt has been recognized through its designation as a National Historic Site. The provincial interest in the Cobalt Silver Camp has been identified through a commemorative plaque located in Cobalt. None of the cultural heritage landscapes or built heritage features has been designated under the *Ontario Heritage Act*. There are no identified Ontario Heritage Trust easement properties or federally recognized properties, or known cemeteries within, beside or abutting the study area.

6.4 Heritage Evaluation of Hound Chute Hydroelectric Generating Station

Unterman McPhail Associates evaluated Hound Chute Hydroelectric Generating Station using the criteria for determining cultural heritage value or interest of provincial significance set out under Ontario Regulation 10/06 (*Section 3.1*). These criteria address cultural heritage values such as historical associations, physical characteristics such as design/construction, information potential and context. The heritage attributes of the generating station are summarized under the relevant criteria.

6.4.1 Hound Chute Generating Station

Hound Chute Generating Station meets three of the eight criteria of cultural value or interest of provincial significance, namely criteria 1, 2 and 3, as outlined below.

1. The property represents or demonstrates a theme or pattern in Ontario's history.

Hound Chute Generating Station has a direct association with the development of the silver mines of the Cobalt area, a significant theme in the history of Canada and Ontario. The Cobalt Mining District was designated as a National Historic Site in 2001. The provincial interest in the Cobalt mining area has been identified and is commemorated with a plaque of the Ontario Heritage Trust. The importance of the development of the Cobalt Silver Camp was also recognized in *A Topical Organization of Ontario History* (1972). The Cobalt Mining Museum considers the Hound Chute Generating Station to be a significant heritage feature in the interpretation of the Cobalt Mining Camp. Hound Chute was the second hydroelectric generating station developed to provide power to the mines of the Cobalt silver mining camp and the first constructed on the Montreal River. The Cobalt Power Company developed the Hound Chute Generating Station, in service 1910. The company also built the Ragged Chute Compressed Air Plant, in service 1910. The dependable supply of electrical power benefited the Cobalt mining camp significantly by reducing the need for importing coal from the United States to operate steam boilers. The resulting cut in operating costs to run equipment at the mines contributed to the financial success of the Cobalt mining camp. The plant has generated power for over 90 years at 60 cycles, initially for use in the nearby mines. The power was later used in the Kirkland Lake mines and the pulp and paper industry.

- 2. The property yields, or has the potential to yield, information that contributes to an understanding of Ontario's history.*

Hound Chute Generating Station conveys well a technical understanding of how hydroelectric power was generated to support the mines of the Cobalt silver camp in the early part of the 20th century.

Hound Chute Generating Station is described as a small-scale, run-of-the-river plant. By virtue of its size and design it conveys its function as a generating station extremely well. The movement of water from the Montreal River is clearly expressed in the dam, former headrace intake and canal. The equipment in the plant is typical of a development from the early part of the 20th century but is considered obsolete and outdated by today's standards. The discharge of the water is clearly visible on the downstream side of the powerhouse. The transformers to the east of the powerhouse and transmission lines on the hill above relate to the transportation of the generated electricity. The site is easily accessed from Cobalt, 9.7 km (6 miles) to the north by a gravel road.

- 3. The property demonstrates an uncommon, rare or unique aspect of Ontario's cultural heritage.*

Hound Chute Generating Station represents a rare example Ontario's cultural heritage as an early example of a hydroelectric facility in the province, retaining its original equipment including four vertical single runner Francis type turbines direct connected to four vertical 60 cycle generators.

Hydroelectric generating stations are relatively rare as a building type within the Province of Ontario. OPG owned 69 hydroelectric generating stations throughout the province in 1993. Ontario Power Generating Station (1905) has since been decommissioned. The oldest station is DeCew Falls No. 1 Generating Station (1898); however, the oldest equipment in this plant has been removed. The hydroelectric generating stations in Ontario represent the period from 1898 on. This follows the fundamental inventions that made large-scale generation of electricity possible and represents refinement of technology, improvement in detail and increase in scale rather than radical changes in principle. OPG operates 19 stations that represent the first period of large-scale development for hydroelectric power in the province spanning the years from 1898 to 1919.

Hound Chute Generating Station was constructed in 1910 with three units; a fourth unit was added in 1911. The original equipment at the plant including turbines, generators, exciters, governors and crane are still in operation. The concrete powerhouse features a timber frame, gable roof. The initials "C. P. Co." and the date '1910' are incised over a large round-headed door on the east wall. Rows of rectangular window openings fitted with multi-paned operable sash extend along the long north and south walls.

The Canadian company of William Kennedy & Sons, Limited of Owen Sound, Ontario designed the plant including the hydraulic equipment. A. Vonaesch was the engineer in charge with A. Gillies as the resident engineer. Hound Chute was a significant undertaking by a Canadian firm in the first part of the 20th century. William Kennedy, a millwright, established the company in Owen Sound in 1863. After William's death in 1885, his son, Matthew added a steel factory. It employed 150 people by 1911 and manufactured turbines, mill gearings, steel castings and propellers. Through the first half of the 20th century, Kennedy's foundry manufactured propellers for many Canadian naval ships and merchant marine vessels as well as for ships internationally. The firm was involved intensely with the war effort during World War I and II. Wm. Kennedy & Sons remained a family-owned business until 1951. It remained in operation until 1997.

7.0 POTENTIAL EFFECTS OF UNDERTAKING ON CULTURAL HERITAGE RESOURCES

7.1 Introduction

The conservation of cultural heritage resources in planning is considered to be a matter of public interest. This section provides a preliminary assessment of the potential adverse effects of the proposed redevelopment of Hound Chute Hydroelectric Generating Station on the Lower Montreal River. As defined in OPG's Class Environmental Assessment for Modifications to Hydroelectric Facilities:

“Redevelopment involves the replacement of a facility or a substantial portion thereof, e.g., major mechanical-electrical equipment, and may include replacement or modification to the powerhouse and associated civil structures, such as headworks and water conveying facilities.” [3-1]

Generally, hydroelectric generating station improvements or replacement have the potential to adversely affect cultural heritage landscapes and built heritage features by displacement and/or disruption during, as well as after construction. Built heritage features and/or cultural heritage landscapes may experience displacement, i.e., removal, if they are located within the same general area of the undertaking. There may also be potential for disruption, or indirect impacts, to cultural heritage resources by the introduction of physical, visual, audible or atmospheric elements that are not in keeping with their character and, or setting. Isolation of cultural heritage resources may occur due to severance of land for new access roads. Isolation of a built heritage feature often leads to demolition due to neglect and/or vandalism.

The potential displacement and disruption effects of this undertaking are principally associated with the proposed redevelopment of Hound Chute Generating Station on the Lower Montreal River.

7.2. Direct Impacts

The new powerhouse will be located on the same footprint as the existing powerhouse. The generating unit(s) will have an expected nameplate capacity of 10 megawatts. The proposed undertaking will remove the 1910 powerhouse and equipment and the existing powerhouse and associated electricity connections will be decommissioned. There will also be refurbishments and modifications made to the civil works, such as the dam. The generating station will connect to the local distribution system via an existing 44 kilovolt feeder.

7.3 Indirect Impacts

The proposed replacement of the Hound Chute Generating Station may result in modifications to the dam that may affect the former log chute.

8.0 MITIGATION RECOMMENDATIONS

The proposed undertaking should not adversely affect cultural heritage resources and intervention should be managed in such a way that its impact is sympathetic with the value of the resources. When the nature of the undertaking is such that adverse impacts are unavoidable it may be necessary to implement management or mitigation strategies that alleviate deleterious effects to cultural heritage resources. Mitigation measures lessen or negate anticipated adverse impacts to cultural heritage resources. These measures may include such actions as avoidance, monitoring, protection, relocation documentation, salvage, remedial landscaping, etc., and may be a temporary or permanent action. Hound Chute Generating Station has demonstrated cultural heritage value of provincial significance.

Hound Chute Generating Station is located in close proximity to Cobalt mining camp, a National Historic Site. The powerhouse, dam and canal are familiar elements in the landscape. It is well accessed by an all-season gravel road. The vestige of the Ragged Chute Compressed Air Pipeline, that is identified in the Commemorative Integrity Statement for the Cobalt Mining District, National Historic Site, is visible beside the access road. The former air plant itself is situated 3.2 km (2 miles) to the south of Hound Chute.

The principal philosophy in the protection of culturally significant heritage features is to preserve in-situ the historic structural and material integrity to the maximum extent

possible, consistent with public safety. The following conservation options for generating stations were adapted from the Ministry of Cultures guidelines for conserving heritage bridges¹⁵. They are listed in descending order of preference, with Option 1 being the most preferable and Option 9 the least preferable:

1. Restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) can be used for their design;
2. Retention of existing generating station (including, where applicable, a) overall layout of the site including access road, b) the powerhouse and c) dams, weirs, intake structures and other civil structures with no major modifications undertaken;
3. Retention of existing generating station (including, where applicable, a) overall layout of the site including access road, b) the powerhouse and c) dams, weirs, intake structures and other civil structures with sympathetic modification;
4. Retention of existing generating station (including, where applicable, a) overall layout of the site including access road, b) the powerhouse and c) dams, weirs, intake structures and other civil structures with sympathetically designed new structure in proximity;
5. Retention of existing generating station (including, where applicable, a) overall layout of the site including access road, b) the powerhouse and c) dams, weirs, intake structures and other civil structures no longer in use for power generation purposes but adapted for interpretive, scenic viewing, recreational purposes etc.;
6. Relocation of generating station.
7. Retention of generating station (including, where applicable, a) overall layout of the site including access road, b) the powerhouse and c) dams, weirs, intake structures and other civil structures as a heritage monument for viewing purposes only;
8. Salvage of elements/members of generating station for incorporation into new structure or for future conservation work or displays;
9. Full recording and documentation of the generating station if it is to be demolished.

OPG proposes to redevelop the site for increased power generation. Hydroelectric generation stations are of necessity secure sites in accordance with public health and safety concerns. The sites are fenced and not open to the public on a regular basis. Some typical mitigation measures, such as commemoration and interpretation of the existing stations on site, may not be feasible options in this situation.

The Cobalt Northern Ontario Mining Museum strives to preserve as much of Cobalt's past as possible. The Museum's collection of artifacts relates to mining and the cultural and social life of the Cobalt camp. It houses a collection of rare photographs and early

¹⁵ *Ontario Heritage Bridge Program*, Ministry of Transportation and Ministry of Culture and Communications, 1983, revised 2005, 10 and 11.

newspapers, such as the *Cobalt Nugget* and the *Northern Miner*. The museum maintains the Silver Trail developed by the Ontario Ministry of Northern Development to preserve and illustrate some of the historical mining attributes of the area. In addition to the Cobalt Northern Ontario Mining Museum, the Cobalt Welcome Centre, housed in the former T&NO train station, opened in 2005. The Welcome Centre serves as a starting point where people can begin a tour of the Cobalt mining camp area. The Cradle of Canadian Mining exhibit area, located in the Station, includes a state-of-the-art visitor theatre and exhibition featuring the history of Cobalt. The interpretation of the hydroelectric generating station in respect to its role in providing power to the Cobalt silver mines and in developing the Cobalt area would appear to fall within the mandate of the museum and welcome centre. In addition, the Marine & Rail Museum in Owen Sound maintains information on Wm. Kennedy & Sons company within its collection.

Nevertheless, local museums and other attractions generally have extremely limited resources. Financial support, possibly in the form of an endowment, would likely be required should the museums and/or welcome centre be requested to accept materials, provide interpretation and/or commemorate the generating site.

OPG has identified that the existing powerhouse will not be retained, therefore the preferred heritage conservation options (Conservation Options 1 and 2) will not be fully met. The overall design and layout of the site will remain unchanged from the existing state.

In recognition of the demonstrated heritage value of the Hound Chute Generating Station the following recommendations will be considered for incorporation into the final detail design in order to mitigate the adverse effects of the redevelopment.

- It is recommended that the dam with any vestige of the former log chute and the former headrace structure at the north end of the forebay be retained as elements in the landscape with a sympathetically designed new powerhouse (***Conservation Options 4 and 7***). OPG is to encourage the selected Design Build Contractor to design the new powerhouses in such a way as to maintain where possible the footprint, shape, window and door openings and rooflines that reflect the heritage character of the original buildings. As part of this approach, elements of the cultural heritage landscape such as the access road and transmission line would be retained in the same location. Ensure that nearby heritage resources, such as the Ragged Chute pipeline and mining related artifacts, are not damaged during construction.
- It is recommended that one of the vertical turbine and vertical generators be offered to each of the Cobalt Mining Museum and the Cobalt Welcome Centre (***Conservation Option 8***). Contact the Marine & Rail Museum in Owen Sound to determine if any material or artifacts may be of interest to its collection.

- It is recommended that if Hound Chute Generating Station is to be decommissioned, a full documentation of the plant should be undertaken prior to its closing (*Conservation Option 9*). The documentation would include the preparation of a visual record of Hound Chute Generating Station in operation prior to the decommissioning of the plant with a commentary on its operation and history by a knowledgeable staff and/or retired staff. Information from the community on former operators and their families who lived in the hydro colony at Ragged Chute would be solicited and compiled. The video, hydro colony records, historical photographs, design drawings and other material that may be of interest would be offered to the Cobalt Mining Museum.

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Maps, Plans and Photographs

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Access:–

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Access:–

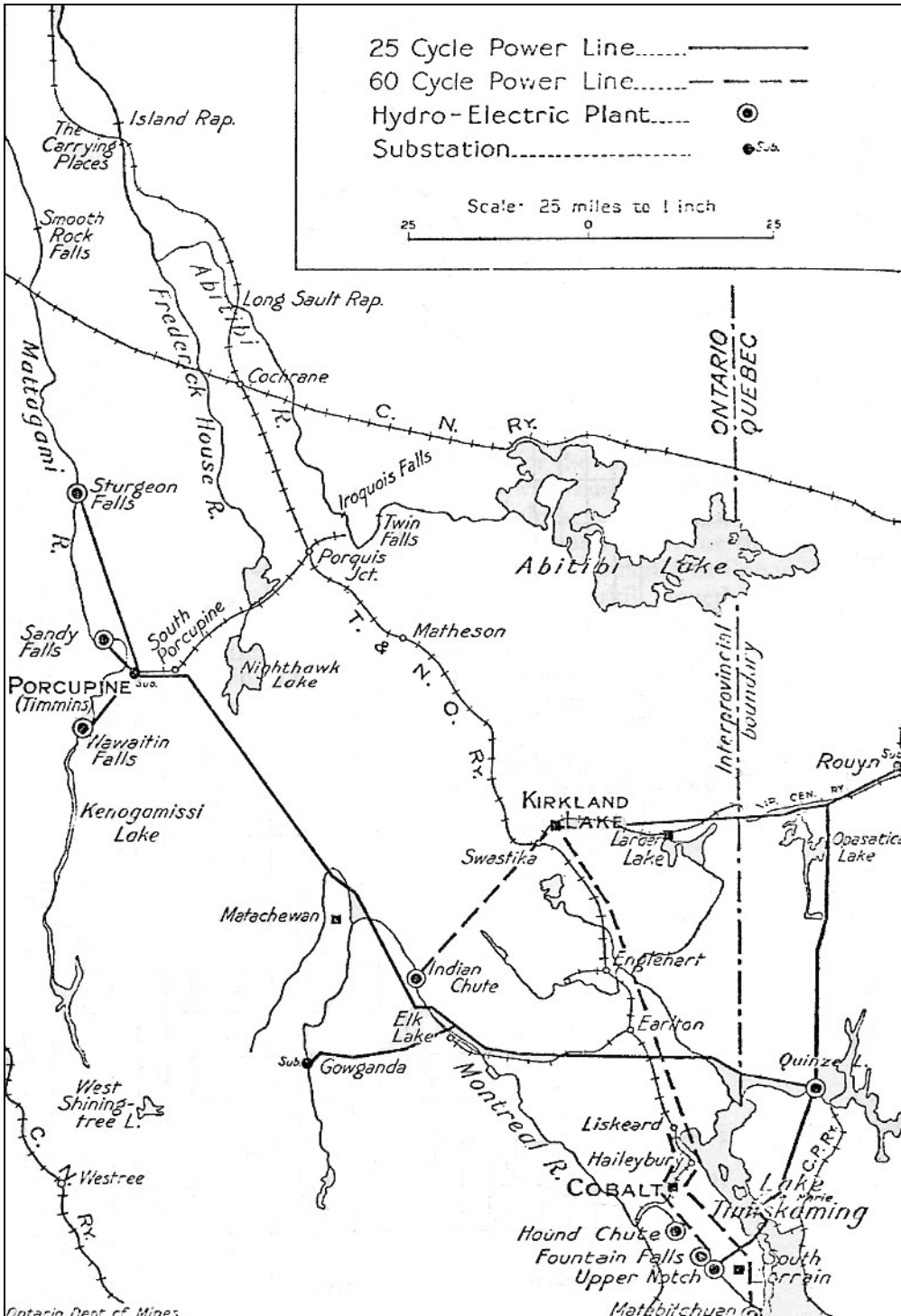
<<http://www.e-owensound.com/marinerail/kennedy.html>>.

Municipal Contacts

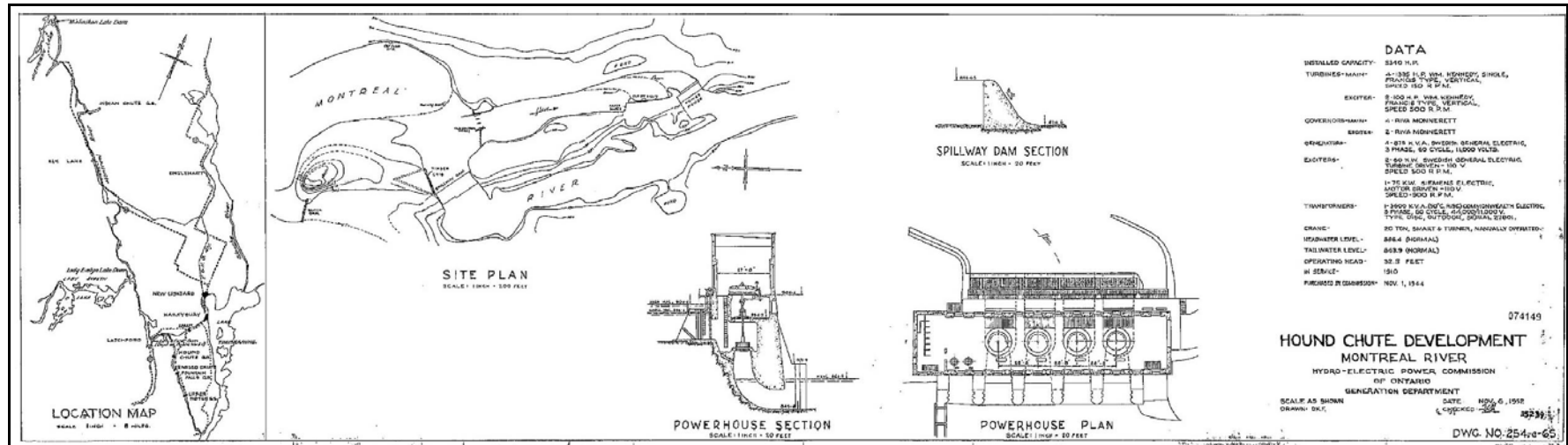
Ms. Betty Graham, Clerk-Treasurer, Township of Latchford, Latchford, Ontario,
November 28, 2006.

Ms. Anne Fraboni, Museum Curator, Cobalt Northern Ontario Mining Museum, Cobalt,
Ontario, November 28, 2006.

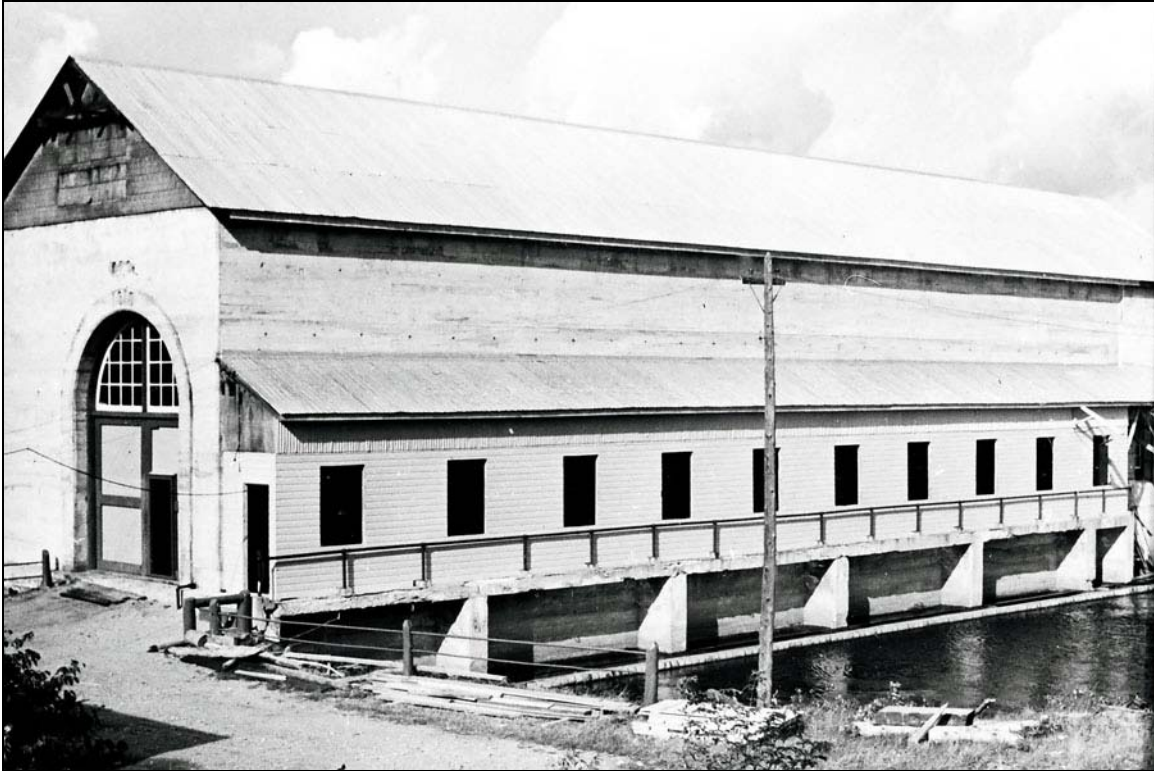
**APPENDIX A:
HISTORICAL MAPS AND DRAWINGS**



Map showing the territory served by the Canada Northern Power Corporation Ltd. [Department of Mines Bulletin No. 46, 1930].

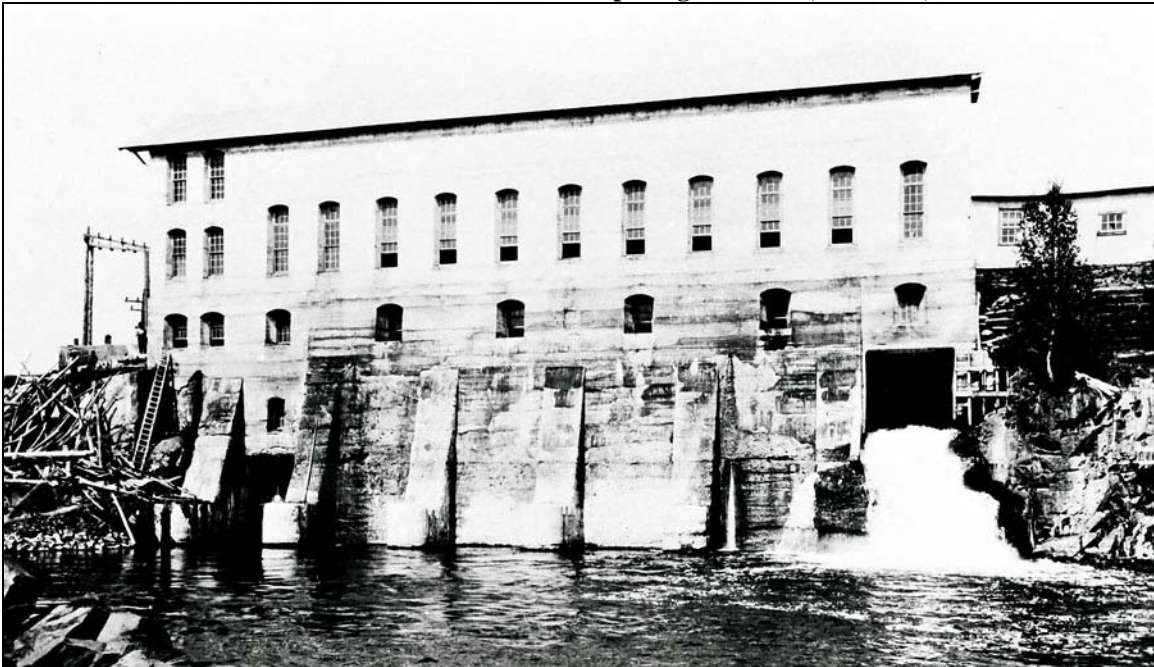


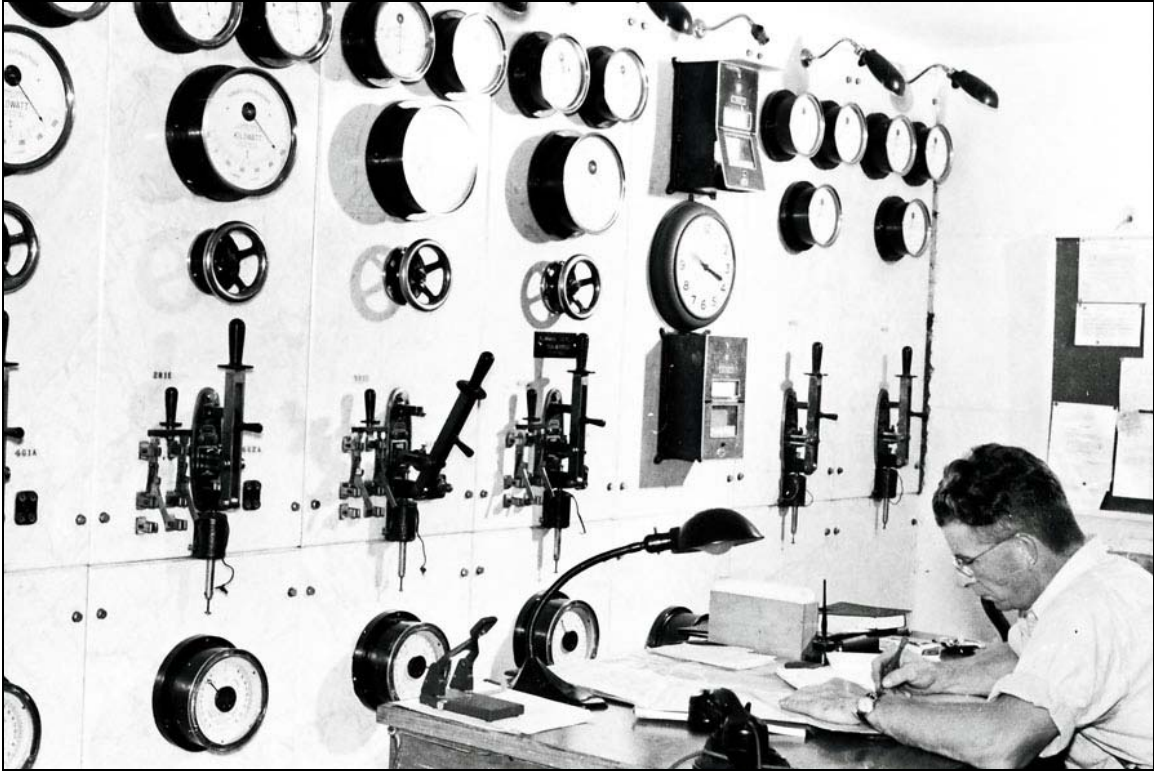
Hound Chute Development, Montreal River [Generation Department, Hydro-Electric Power Commission of Ontario, Nov. 6, 1952].



Upstream side of Hound Chute Generating Station. Compare the one-storey structure at the intake with contemporary images. [Sept. 1949, HP-2357, OPG.]

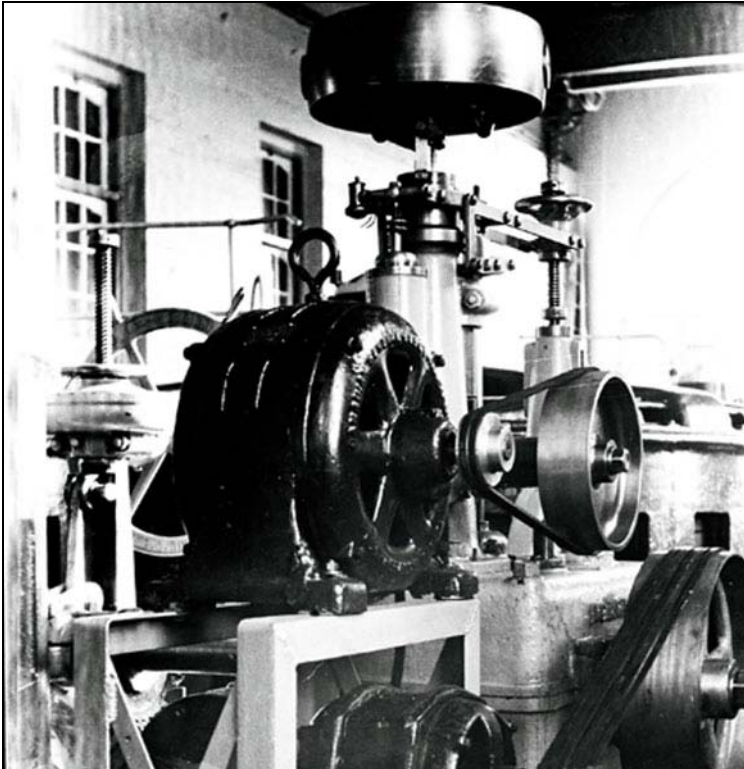
Downstream side of Hound Chute. Note the window openings. [No date, HP-1491, OPG.]





Hound Chute control room when the plant was manually operated. [Sept. 1949, HP-2358, OPG.]

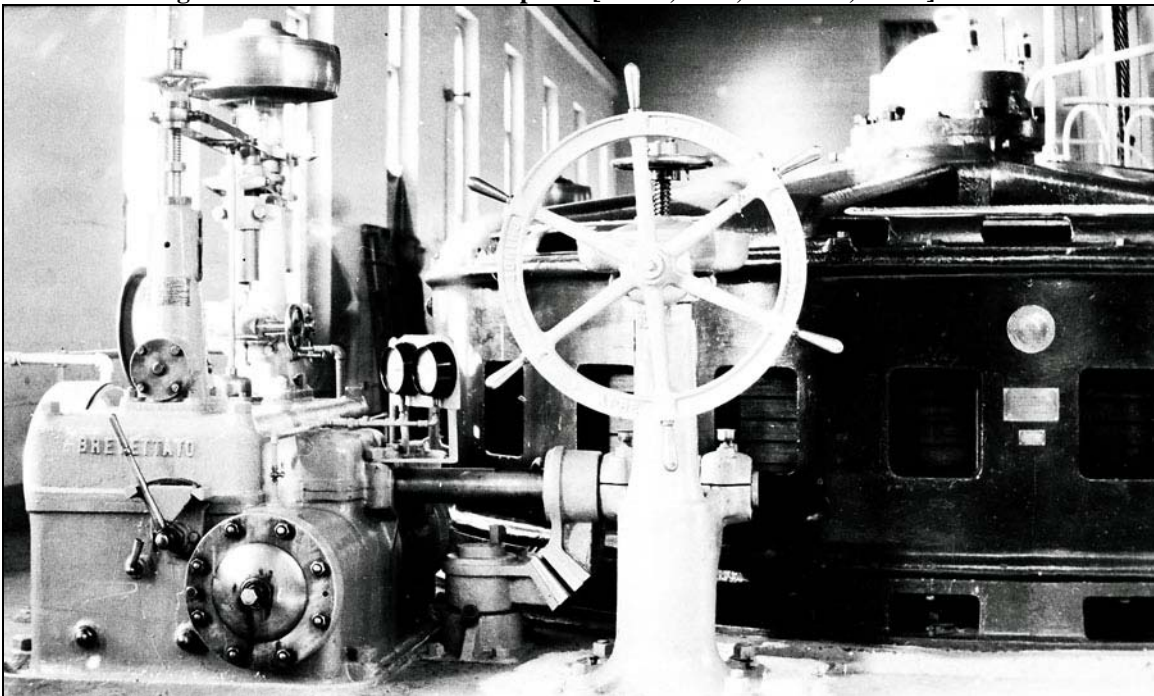
Governor drive. [Dec. 31, 1952, HP-1870, OPG.]





Governor at Hound Chute. [Jan. 7, 1953, HP-2110, OPG.]

Generator and governor at the Hound Chute plant. [Jan. 7, 1953, HP-1871, OPG.]



APPENDIX B: PHOTOGRAPHS
HOUND CHUTE GENERATING STATION



View north across the concrete dam with flashboards that replace the original timber dam.

View east across the former headrace intake at the north end of the canal.





View south along the canal to the powerhouse.

View north along the canal to the headrace intake.





The initials 'C. P. Co.' and the date '1910' are incised in the concrete above the round-headed door.

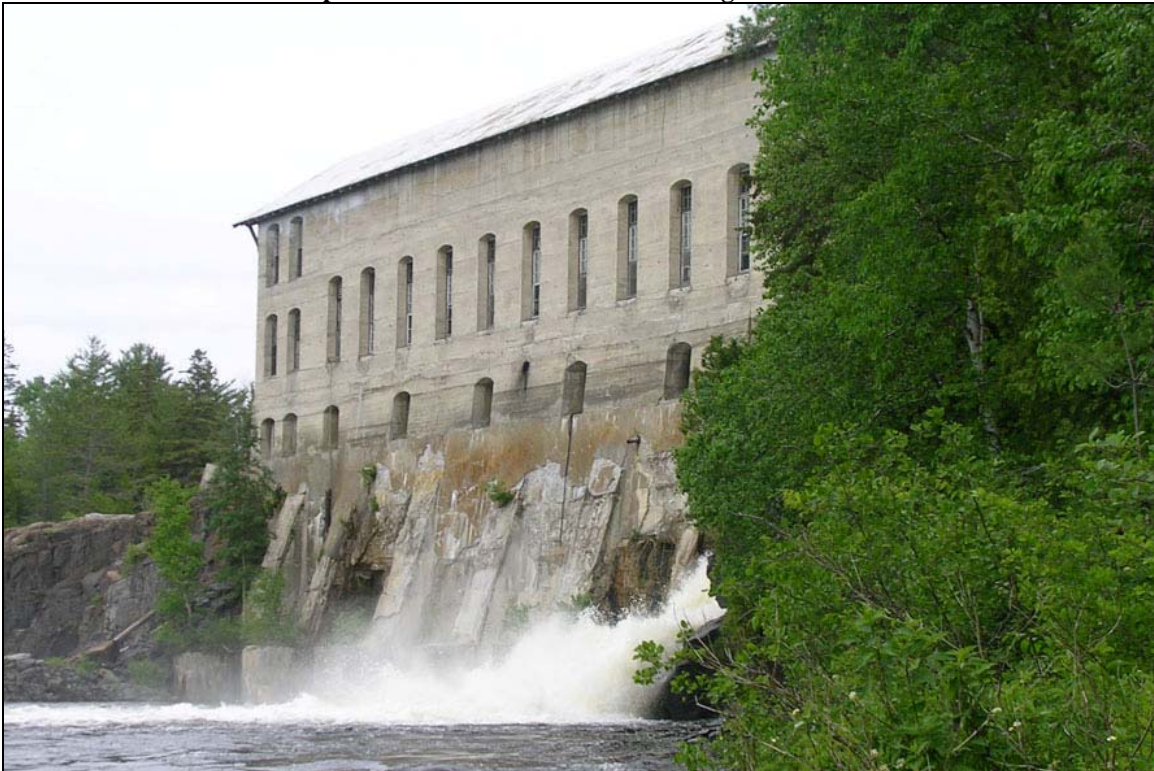
The structure at the intake has been modified since 1949. See historic photograph in Appendix A.





North gable end of the powerhouse with the transmission line.

The downstream side of the powerhouse with the water discharge.





View through the interior of the powerhouse with Unit 4 in the foreground.

The Smart-Turner Machine Co., Hamilton manufactured the crane. Note the timber roof trusses.





View west (downstream) of the large window on the generator floor of the powerhouse. The rectangular opening is fitted with two operable sash of nine panes of glass each with an upper transom light of six panes. Note the upper part of the transom is curved. The concrete walls were poured in horizontal sections.



View south to Unit 4.

View northeast to Unit 3 with Riva Monnerett governor in the foreground.





Nameplate on Unit 3 generator.

Name on turbine housing of Unit 3.

