# 1,820,000 Horsepower Sir Adam Beck No. 2 Generating Project Truly A Big Job

imposing structure will be 63 feet of 4 feet.

And the powerhouse is not the largest part of the Ningara project, by any means. Yes, the Big Job is BIG! VISITED BY PRESS

tario Hydro's 1,828,000 - horsepower Niagara development on Satur day when they saw in operation ating Station No. 2.

The development stretches from above the Falls at Chippawa-eight | miles across country almost to twin 51/2-mile tunnels diving as deep as 330 feet under the City of Niagara Falls, a 21/4-mile open-cut canal, a pumped storage scheme, a large forebay, and the power

At its peak, it employed a work force of 6800 men and hundreds of TUNNEL NO. 1 COMPLETED machines: It created "Hydro Cities", involved the building of 25 millions of tons of earth and rock. and pushed back the shoreline of the Ningara River temporarily.

#### USEFUL MONUMENT

A useful and spectacular monument to Canadian engineering skill and initiative, the big Job nears completion. In December, 1950, the first power shovel took its first mammoth mouthful. Today, the project approaches a record of construction achievement second to none. Tomorrow, more and more power will flow into the transmission and distrubution lines of the

THE INTAKES rate of 7,500,000 gallons a minute. in diameter. crete is being placed in No. 2.

port". It tells nothing of the diffiintakes can be closed, steel logs
plans, Ontario Hydro constructed
placed in "checks" at the outlet five models, one a duplication of

The intakes had to be built in from the tunnels. a location where sufficient water . These twin hydraulic pressure Rainbow Bridge below the Catwould be available without turbu- tunnels are, as far as it is known, aracts, set up at the A. W. Manby lence, and in such a way that the largest of their type in the Service Centre, Islington, Ontario. floating ice would not interfere world. Soon, they will be ready for Four other smaller models of the with the flow of water. The "loca- the sole purpose of their making— canal cross-over, the tunnel outlet tion" is two miles above the Falls. conveying water to generate pow-Anyone who has seen this area, er for the people of this province. No man will see the filled tun-the Niagara River at this point, nels; but they will be there in their It is estimated this "design insurwill realize what problems faced silent service for more time than ance" saved Ontario Hydro more the engineers and construction man-can contemplate.

1100-foot timber - crib cofferdam vaters. Before excavation for the constantly to throw back into the point in construction. stubborn river the forces it still

sent to the onslaught. yards of earth, and 202,000 cubic open-cut power canals. yards of rock. This put the work- Extensive safety and security will produce an unbroken cataract ers far below the level of the Niag- measures were taken to avert any ara River. The gathering tubes, damage to Hydro facilities or in-with apertures through which wat- jury to personnel. Elaborate preto obtain the most efficient flowers 160 feet from the forebay plug. An incidental flow over the extremit-

the intakes, 250,000 cubic yards of perts of Canadian Industries Line. unparalleled tourist attraction.

the future. Each gate, 58 feet high USE MUCH EXPLOSIVE span the 45-foot opening.

operated gate, is in place. Also in- largest blast yet fired on the canstalled is a sectional emergency al section of the development. The Big Job could not have gate, in order to protect the tun- Firing of the forebay blast re- been carried on to its present state nel should the cofferdam' give quired 100 . electrical horsepower; had it not been for considerable way. This is considered an im- for the crossover blast, 200 horse- "backstage" reparation. Some 25 probable contingency, but precau- power.

crete. "SQUARE WATER" The 100-foot long transition sec- of reinforcing steel.

Generating Station No. 2, near tubes are 45 feet square, from the some 30 feet. approximately 1150 feet long. The in shape, with a finishing diameter R. McLagan," launched in 1963.

structure below the floor.

If this impressive building were like tapered boxes. As the transition progresses, the corners of feet, and a maximum draft of 25 would reach for three blocks - the square are gradually and al- 6". -from King street to Queen street most imperceptibly rounded off. The canal could carry a total of -with four storeys above the until a perfect circle is achieved. 32 such craft, 16 travelling in each ground, and seven storeys below It is calculated that the water will direction, with 13 feet of open wabe flowing at ten feet per second ter between each ship and some Yet the sole purpose of this in the "square", and twelve feet 60 feet of passing room. Yet the great structure, nestling at the foat per second in the "round". This canal of the Big Job is designed of the 300-foot Niagara gorge six speed-up makes it possible to carry only to convey water to create miles below the cataracts, is to the same amount of water per sec- power for the people of Ontario. supply power to the people of On- ond in the "round" as in the PUMPED STORAGE AREA

tube, leading from the transition storage scheme authorized in July demonstrates one of the most several changes in the plans for amazing feats of the Big Job. Deal- the development, including crea-More than 70 representatives of press and radio from East-Central Ontario and the Toronto area were job separate entitles called "divishown the initial results of On- sions", and under their own super- cut canal; enlargement of the foreintendents it would seem literally bay, and extension of the headimpossible to join up the various works for operation of the four adthe first 100,000 horsepower unit of of kilter" somewhere. Yet, when quired.. the Sir Adam Beck Ningara Gener- the pressure tube for No. 1 intake A pumping plant, equipped with was completed, it was impossible eight pump turbine units, will be to tell where the tunnel crew left located at the upper end of a 1400- Big Job, the Administration Buildthe intake structures, two miles off and the intake workmen took foot "off-take" canal, now being ing, is the 30-bed hospital, which over. So well has the project been excavated. Queenston—and includes intakes. boards, so well has it been carried scheduled for service in 1957, will ing, it is decorated in attractive designed on the Hydro drawingout by Hydro workers, that this increase the generating capacity of pastel colors. The design was by perfection is commonplace.

When the intakes are completed, they will be backfilled to the origin. periods, running the same water medical authorities, from experal level from stockpiles maintain- back through the units as needed, ience gained on other Hydro, de-

pleted in December, 1953, with the will also enable fuller use to be ing room, X-ray room, consulting last of the 490,000 cubic yards of made of all units of the station, par- room, pharmacy and wards that concrete placed with the 45-foot ticularly at times of high demand, would be the envy of many city form. Excavation for No. 2 tun- when quantities of water allowed hospitals. In charge of the hospital ne. is finished, and concreting is by the Niagara Diversion Treaty is Dr. Donald Grant, who came we'l-advanced. It is anticipated would place temporary restrictions from the Hydro hospital at Des that Tunnel No. 1 will carry water on full capacity operation. in June this year - well ahead of HUGE PENSTOCKS th\_ original schedule! Over nine million tons of rock were removed from the big holes. Togeth- 300-foot cliffs of the Niagara gorge,

for a week.

ACCESS SHAFTS For the Big Job is scheduled to To reach the underground dis- The powerhouse, looking like the start work this year, when the tance required for the tunnels, five rotunda of a great railroad station first five, 100,000-horsepower units access shafts have been sunk into and the control building which will of its 12-unit phase will be placed the rock past the depths of the tun- eventually operate both the new in service. (Chairman Robert H. nels. These have provided en station and its predecessor just Saunders unnounced recently that trances and exits for men, mater- downstream, the Sir Adam Beck, the Commission expected to hold lals, and equipment, and for the Niagara GS No. 1, have most of the official opening ceremony in removal of the excavated rock. The the concrete placed. The scroll-August this year.) Early in 1957, shafts were offset in such a man-cases for Units No 1 and 2 are the 12-unit phase of the project, ner that they could be used for in place, ready for the installation together with the power developed the construction of the "twins" of the first generating unit. and by the turbine-generators at the running parallel some 250 feet the scroll-cases for Units 3 and 4 pumped storage reservior, will add apart, from centre to centre. The are in and being readied for cona triumphant 1,428,000 horsepower shafts were sunk 6225 feet apart. creting. of installed capacity to Ontario's Each has an elevator, capable of To prepare the powerhouse site. power pool. With provision for four raising or lowering a maximum of more than a million cubic yards more 100,000-horsepower units to be 20 tons, two rocks skips, and hop- of rock were excavated for the added as required, the eventual pers. The tunnels are being con- first twelve units. This phase will capacity of the new station is creted in two stages, first the in- require 235,000 cubic yards of convert, followed by the arch. Con- crete; and some 19,000 tons of Let's look at the Big Job . . . the crete is dropped into the tunnels steel. way it is today, and how it got through 10-inch downholes. These tural grandeur of the Magara tunnels from the surface at vary- gorge, the powerhouse is already The intakes consist of two gath- shops have facilitated repairs right a credit to Hydro's architects and ering tubes, each 500 feet long. on the job. Ventilation in each shaft engineers.

Each will suply water to one of is supplied by huge fans, forcing BEST POSSIBLE DESIGNS the twin tunnels, at the normal air through two vent pipes, 41/2 feet

No. 1 tube is now completed; con- Thought has been given to the future. Should the tunnels need re- being employed, and to make nec-That is the bald "progress pairs at any time, the gates of the essary modification to the original portals, and the water pumped five miles of the Niagara River

OPEN-CUT CANAL

cubic yards of earth and 4.626,000 Horseshoe Falls, under a joint and an earthen dike, 400 feet long, cubic yards of rock for the canal agreement between Canada and caclosing 14 acres of the Niagara and forebay is completed. . the United States, creating a more The huge development moved a uniform flow of the Niagara River structures could proceed it was step closer to intitial operation on over the Cataracts and contributnecessary, also, to place a grout March 6 when 25 tons of explo- ing to the most effective use of cut-off curtain around the whole sives blasted out two huge rock water for power production. Thus, area to be unwatered. This was plugs in the open-cut canal section. not only will the beauty of the Falls accomplished by diamond - drilling The first blast blew out the fore- be enhanced, but the maximum some 1200 holes, approximately 25 bar plug - a 12-000 cubic yard use of the water available for genfeet in rock, and pumping in grout wedge of soli rock separating ghe eration will be made. Ontario Hy-(a mixture of cement and water). forebays (or head-ponds) of the dro has jurisdiction over the build-Following this operation, in which new plant and the existing adja- ing of the remedial works on the some 109,000 bags of cement were cent Sir Adams Beck-Niagara Gen- Canadian side of the river. used it was possible to begin ex- erating Station No. 1. Thus, for the REMEDIAL WORKS cavation "in the dry," although first time, water entered the new large pumps had to be kept going forebay, marking a major turning

The second blast tore out the massive 34,500-cubic yard rock car-In placing the structures, it was rier at the lower end of the crossnccessary to excavate 782,000 cubic our between the existing and new from the Canadian and Goat Is-

material were dredged from the ited, compressed air was forced bed of the river in a hazardous through holes drilled in a series of dam is being preceded by unwatbut acciden-free operation, making pipes submerged in the forebay of ering, through the erection of cofa tunnel section 400 feet offshore. the No. 1 plant. The resulting "cur. ferdams, upstream and down-Two gates will be installed mid- tain" of bubbles acted as a buffer stream. The unwatering and conway between each gathering tube and reduced the impact of the plug- struction will proceed in four stagand inlet portal of the twin tun-nels. These gates will be used to stop the flow of water. should of normal. Seismic recordings in-feet. These will be placed on the this be necessary for any reason in dicated a minor amount of tremor. bed of the river, supported by "H"

which will hold the electrically tons at the crossover plug, the "BACKSTAGE" OPERATIONS

tions must be taken to eliminate. It was necessary to pour concrete were built by Hydro to facilitate if 'ossible, all risks and hazards in only one section of the big ditch, activities on the development Disin such a project. This emergency This is the trapezoldal (resembl- posal areas 640 acres in extent) gate, operating on the same prin- ing a spread "V") section, built were set up to handle the millions ciple as the stop-logs on an ordin- over ancient glacial debris. Many of tons of earth and rock excaary h drawlic dam, has eight steel years ago, the Niagara River had vated, on land judged of small clated with Ontario Hydro's sections piled one on top of the its course across this section, lead value for other pusposes. other. These fit into steel slots or ing to what is now known as the There are three "Hydro Citles" "checks" ambedded in the con- Whirlpool. The 2200-foot long fra- on the job: Chippawa Camp near peroidal section required 77,000 cu- the intake section; Whiripool Camp | ted to hold back the waters of bic yards of concrete and 2900 tons near the centre of the development, the river so that the structures

wide, 50 feet high from the operating floor, with sor; 85 feet of sub line in concrete than a curved, so the maximum length allowed to

One of the unique features of the A400-foot long circular pressure huge project will be the pumpedsection to the tunnel inlet portal last year. This has necessitated

the project by pumping water into the Commission architect, Kenneth the reservoir at night, and, at peak | Candy, in consultation with Hydro's When these pumps are operated in velopments, such as Des Joachgenerators, and will generate some from the comfortable waiting-room, Tunnel No. 1 lining was com- 228,000 horsepower. The reservoir into a completely-equipped operat-

road, carved from the face of the er, the tunnels will convey 15,000, is the powerhouse of the Big Job. gallons of water a minute to Steel penstocks, 19 feet in diameter the canal, enough to supply the and 492 ft long, for the first five needs of the City of Niagara Falls units have been installed with work on the remaining penstocks of the 12-unit phase well-advanced.

ing distances. Underground work- assuming a shape of beauty that is

Nothing was left to chance in preparation for the Big Job. To ensure the best possible designs rom the tip of Grand Island to the than five million dollars.

Remedial works will be built out The first step was to build an The job of removing 3,646,000 in the Niagara River above the

The remedial works will consist of a 1550-foot long dam at Grass Island Pool, controlling the water level in the Chippawa-Grass Island Pool area, Excavation of rock land flanks of the Horseshoe Falls crestline, and give the desired distribution of flow over the Falls.

At the same time, earth and er will enter, resemble oversized cautions were taken to protect the rock will be used to fill in the ends mouth organs. To bypass ice and screenhouse of No. 1 plant, only of the Horseshoe, eliminating the the gathering tubes have been lo- "air bubble curtain" was intro. les of the crest. This will permit cated below the water surface, par- duced for this particular operation an unbroken curtain of water to ellel to the main currents of the to cushion the impact of shock be- flow over the precipice. The fills, tween the forebay plug and the landscaped to blend with the for-To ensure that an adequate sup- screenhouse. Through this process, mation of the gorge, and the remeply of water would be available developed by Ontario Hydro re- dial works as a whole, will prefor the tubes and to carry ice past |se 'engineers, and explosive ex- | serve the beauty of the Falls as an

Building of the remedial control piles, and counterweighted with six-ton concrete blocks. Steel sheet pan the 45-foot opening.

Six tons of explosives were repiling will be driven along water
The control structure for No. 1. quired at the forebay plug and 19 surfaces as a "water stop."

miles of access and service roads

These camps are miniature communities in every respect, with accommodation for the workers, reeation hall, and cafeterias. Each has its own fire department and sanitary services, and no crack city fire brigade ever polished its equip-How big is BIG? tion of the intakes seems a mir. The open-cut canal is 2 miles ment to a more gleaming surface When all 16 units are installed at acle in itself. Here, "square water" long, 200 feet wide, with a depth than the firemen at the camp fire Ontario Hydro's 1,828,000 horse- will, in effect, be turned into through earth and rock of 70 feet, halls. The recreation halls have fapower Sir Adam Beck - Niagara "round water". The gathering and it wil have a water depth of cilities for bowling, billiards, movies, refreshments and television. Queenston, this mammoth develop- riverface slot to the control strue- The pride of Canada Steamship Regular church services are held.

In the pride of Canada Steamship Regular church services are held.

As a major portion of the work on the two tunnels has been com-The largest cargo-carrier on the pleted, Chippawa Camp was closed on March 9, with the smaller labor force being more economically accommodated in the Whirlpool and Queenston Camps. Shells; of the four main buildings at the

Chippawa site will be sold by tend-

Good food is a necessity for hard-

near the generating station site

CAMP CAFETERIAS

working men. A sign in each camp cafeteria states that the men can have more food for the asking, and it means just what it says. Each of the three cafeterias can serve 600 at a sitting. Some 5000 meals a day are provided, while lunches are made up for the night shifts. Behind the scenes at each cafeteria are spotless, well-equipped kitchens. The weekly shopping list for the Niagara project would stagger most housewives. It included, at peak construction: 6000 loaves of bread; 14,000 pounds of vegetables; 12,000 pounds of meat; 1,000 pounds of poultry: 1800 dozen eggs: 1200 pounds of butter and ingredients for 2500 pies and 5000 pa-

Hydro built solely for the workers reverse, they will act as turbine ims. The spacious corridors lead Joachims and brought much of the equipment with him. He is assisted by Dr. J. Dales Black, four resi-At the foot of a two-lane service dent nurses, and first-aid men, as well as other hospital staff. Meals for the patients are prepared at handled 1623 bed patients up to Dethe nearby Hydro cafeteria. Open-cember 31, 1953. ing July 27, 1951, the hospital had | Quite apart from the numerous

predecessor · (extreme right). On the side if the cliffs and blending into their natural grandeur, are the powerhouse and penstocks of the new station. Above these are the two canals. the new one at the left dwarfing the older channel. The entire 214 mile length of the new open-cut canal is now watered

HERE, where three-and-a-

half years ago there were only

the bare and ancient rocks of

the 300-foot cliffs of the Lower

Niagara Gorge, Ontario Hydro

engineers and workmen have

created the modern giant of

the 1,828,000 horsepower Sir

Adam Beck Niagara Generating

Station No. 2, adjacent to its

labor and Ontario Hydro. FREE OF STRIKES working on the development, it is of the most progressive in Canaentirely conceivable that difficul- dian labor history; provided for ties might have developed at one substantial benefits. Thus the extime or another. Yet not one hour perience gained on this project has been lost through strike action. paved the way for benefits to all This has been due in great mea- Hydro construction men in all parts sure to the establishment in 1950-51, of Ontario. leader as the "most worthwhile written.

So successful was this aggree nent, and the one signed with the Ontario Hydro Construction Allied 1953, an agreement was signed by Haldane at Edinburgh in 1799.

els. One unit of the new plant is already in service, and four engineering achievements of this the latter and Ontario Hydro on belargest Hydro development, is the half of approximately 9000 con-largest Hydro development, is the half of approximately 9000 con-record of good relations between struction workers throughout the

bargaining agreement in Canada oday."

Council, A.F. of L., that in October, in Scotland was founded by James J. James M. Simpson (Secretary

will be in operation when the province in 98 trade classifications, and representing eighteen unions. With a large construction force! This agreement, described as one

since the blasting early in June

of a massive rock plug at the

upper cross-over of the wto can-

als, enabling water to enter the

section of the new canal leading

back to the exit portuals of the

twin 5½-mile underground tunn-

of the Niagara Development Allied | This, then, is the Big Job! Its Council, A.F. of L., which repre- magnitude cannot be contained in W. George Akins, president of the sented 17 international craft unions. one story, or in a number of stor-In fact, this Agreement was char- ies. It is a volume, with its most acterized by a prominent labor interesting chapters yet to be

The end of the Big Job will be ts beginning

CHURCH FOUNDER The first Congregational church

is the switchyard for the new

station is officially opened Aug-

ust 30 by Her Royal Highness,

The Duchess of Kent, Just back

of the right-hand tip of the ori-

ginal powerhouse is Hydro's

famous Floral Clock. On the

"island", between the forebays,

TORONTO - Six long · term executives of the Walsh Advertising Company Limited, one of the

leading advertising and public relations organizations in Canada, have purchased the interests q company since 1944. The purchasers are ex-Managing Director K. G. Anderson, now president of the company; Vice-presidents George E. Cross (Manager, Toronto Office), F. Rex Werk (Manager, Montreal Office) and

Yves G Bourassa (Chief of French Department); and Directors F. F. Treasurer).

Distractions, Cause

Of Most Accidents

Says Woman Judge

Distractions cause 75 per cent of

Window shopping, looking at

pretty girls, settling squabbles a-

head-swiveling conversations with

passengers, lighting a cigarette -

Hearing 80 to 120 traffic viola-

tion cases a day, she qualifies as

# Colorado Peak Found To Top 14,000 Feet

WASHINGTON-Colorado, which tearlier this year was awarded the boasts more ofty mountain peaks John Fritz Medal for engines; ing ing ot a prominen twoman traffic than any other state, can pride achievement. He is a trustee of judge. itself today on another that ex- the National Geographic Society. ceeds 14,000 feet.

The psirng the United States Geo- Dr. Wrather overseas the Sur- mong children in the back seat, mountain, but new Survey research Many merely update old ones. A Toledo, Ohio, Municipal Court. fixed its true altitude.

National Geographic Society, the It will probably be several generals an expert on human behavior be-Geological Survey said Colorado before the entire country is map- hind the wheel. In 1953, she heard can thus add a new peak to the 47 ped adequately. she already lists in the 14000-foot

MAPS EVEN SOME FENCES projects: mapping the Nation down new surveys. to every hill, almost to every house Not long ago the Survey cemapand even to some fences and ped Illinois. If found Peoria "Out windmills. Now it is investigating of place." So new maps shifted the Colorado Plateua to speed the Peoria about a mile to the southquest for uranium, the vital atomic west.

In this work the Survey measur-lone type of American hobbyist ed El Diente in southwest Colora- on the go: the person who hankers do, it also gauged other Colorado to stand at the highest and lowest peaks and "lowered" some - Wil-spots in every state. son Mountain, from 14 250 to 14 246 A Michigan real estate man re-

by Dr. William E. Wrather, who its ups and downs.

logical Survey, while celebrating vey's topographic division, whose its 75th anniversary, found that El surveying parties and aerial pho-Diente (the Tooth) shoulders the tegraphers plot the country's con- these are the things that cause acsky at 14,150 feet. El Diente hither- tours. In a year the Survey pub- cidents, in the opinion of Judge to had been overlooked as a high lishes more than 1,300 new maps. Geraldine F. Macelwane, of the

1,300 MAPS A YEAR

third of the United States is cover-In disclosing its finding to the ed by still usable "quadrangles". terior Texas, Georgia and Ala-

bama are unmapped. Kansas, The Survey carries on one of Mississippi and the immense he Government's prime long-range spaces of Nevada and Utah require

The Survey's map revisions keep

feet and Wilson Peak, from 14,026 cently accomplished such a feat after years of travel. But upon tention for an instant - long Not all calculations will be cut reaching home, he learned that the enough for the car ahead to stop down. Over the country the Sur- Survey had estimated some of the for oncoming traffic," Judge Mave yexpects to lift other heights elevations anew. Florida's highest celwane said. "The woman crashinto the top category. No changes, place was announced as a hill in ed into it, the child required hoshowever, are in store for Att. Witn- Walton County near the Alabama pital treatment, and she was hailed ney in California, the Nation's tal- border. It was given as 345 feet. lest - 14,495 feet. Its altitude has 26 feet higher than the previously charge. 'tied down' meticulously. listed point near Lake Wales. There The same is true of Mt. Elbert, were changes in other states, too. Colorado's monarch, only 64 feet Undaunted, the Michigan real es- portant than, punitive action in tate man started out again, still such cases, Judge Macelwane be-The Geological Survey is headed eager to now the land in most of lieves.

7,300 traffic cases. "It takes only a second of distraction on the part of the driver to cause a serious injury or death," Judge Macelwane points out. "If a moving car is left unguided, even

She cited the example of a learful and trembling young mother who recently appeared in her court. The mother had made the common mistake of allowing her small child to stand on the front seat beside her. "As the driver of the car ahead

for a second, a serious accident

signalled an intention to turn left, the child diverted the mother's at-Into my court on a reckless driving

Improving the driver's knowledge and attitudes is more im-

"Although women can rally public support for enforcement and engineering advances, they can be even more effective in reducing accidents by focusing attention on more common dangers, like distraction," she says.

## Slide Menacing Panama Canal Recalls Construction Problem

haunting the Panama Canal.

to topple into the cut and block Gold Hill.

Isthmid of Panama. The National Geographic Maga zine in 1914 told how hostile nature

was seemingly bent on thwarting every effort of the Canal's engin-

SOMETIMES QUIET

At times the slides were quiescent, as if "to lure the engineers into a false security," reported a PRANNKISH SLIDES intake, leading to No. I tunnel, is Geographic author who had just re- In their onslaught, the clarice- young corp and some undestrable now complete. Looking like a turned from the scene. "Now they like masses of rock and dirt often species may be used only in waters grant mouth-organ, the waters of the Niagara River will sweep through the openings, shown at the dead of night, speading chaos up a steam shovel and decosited nows of undesirable species from ever direction they move."

the Canal bed more than 30,000,000 iels whenever they cleared the way, are not wanted.

the menace of land slides-is delayed completion by two years Gallard Cut was the greatest Deep cracks in a high rock ledge hurdle that faced the Pagama overlooking Gaillard Cut have forc- builders. Eight miles long, this earth-movers to blast and carry stretch on the Pacific side lay number of live minnows an angler ed authorities to hire professional through rugged terrain reaching a may have in his possession is con-off the huge mass that threatens height of 662 feet at the summit of tained in the 1954 Ontario Fisher-

clay frequently obstructed the gig- changed to honor the engineer in cial dip net licence for balt, a comautic slashes then opening up the charge of this phase of the work | mercial seine net licence for balt David D. Gaillard, who eventually gave his life to the undertaking deeper, slides became more active, this respect, officials of the Ontario Before 1910 they added less than Department of Lands and Forests eight per cent to the total of ground point out, "with ,the result that removed. By 1913, the year before some persons would take large the canal's opening, slides were quantities of minnows, far in ex responsible for nearly half the cess of their requirements, which mountain of accumulated debris,

ready for work.

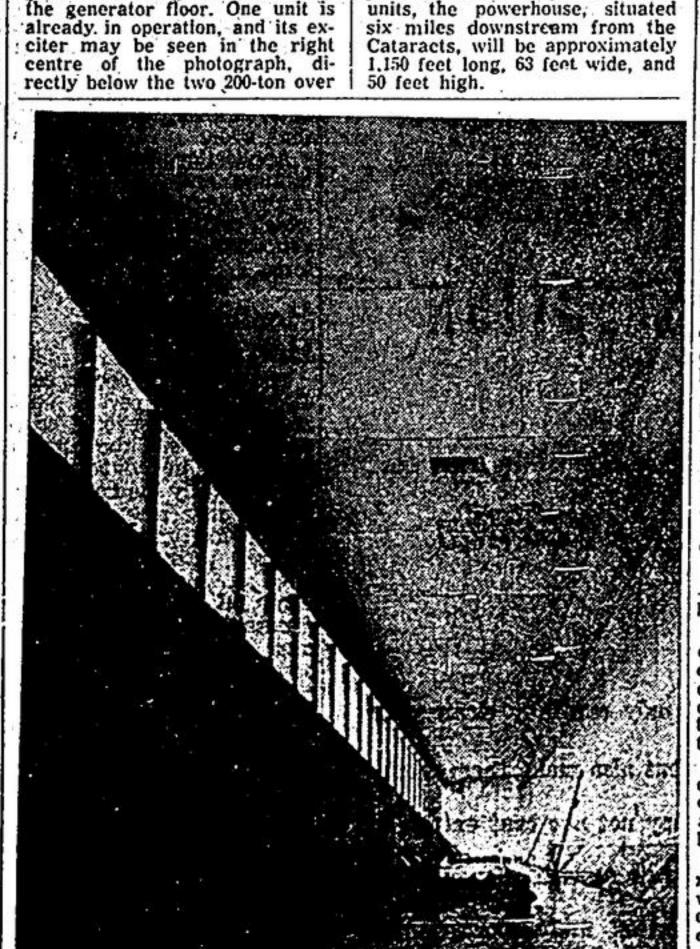
### WASHINGTON - An old trouble cubic yards of material. They For Live Minnows

TORONTO - Restriction of the les Regulations. From April 1 to The cut was originally called October 31, "no person shall have The situation recals construction Culebra, after the neighboring Cu. in his possession balt in excess of days when tons of rock, dirt, and lebra Mountain. Its name was fifty fish" except under a commer-

As the Culchra section was dug | Previously, there was no limit in occasionally resulted in great wastage of these fish.

Regulations also provide that

left. Each intake structure is 500 and disrupting everything in what it 50 feet away, still upright and one body of water to another, thus avoiding the possibility of intro-In all, slides destroyed 200 miles | Sometimes tantalizing slides rol | ducing carp into waters which they minute into each of the 51/2-mile of railway track and dumped mio led down to the hardworking a ov- do not now inhabit and where they



THE GENERATOR FLOOR

shows the 100,000-horsepower

generators being assembled on

Facing south, this photograph | head cranes. Each 60-cycle gen-

erator weighs over a million

pounds. When completed for 16

Some two miles upstream from Niagara Falls, work is proceeding on the intake structures asso-1,828,000-horsepower Sir Adam Beck-Niagara Generating Station No. 2. A cofferdam was construc-

feet long and will divert a total of 20,000 cubic feet of water per and the third close to Queenston, could be built in the "dry". No. 1 | long tunnels.