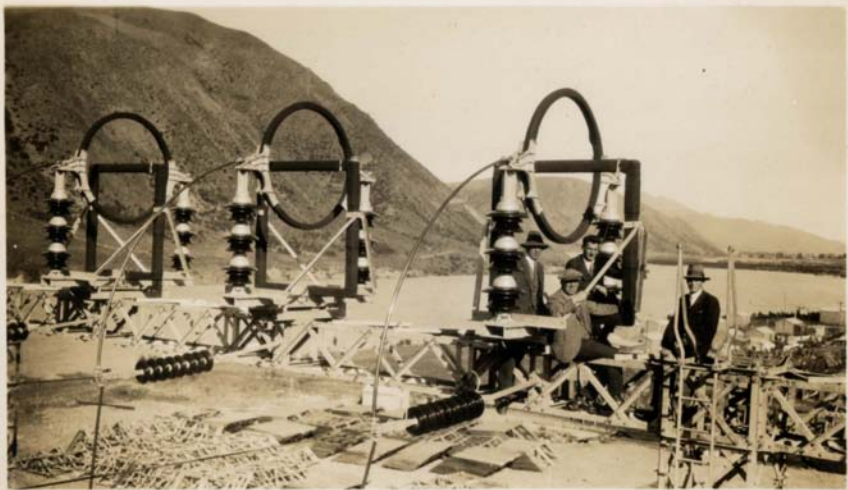
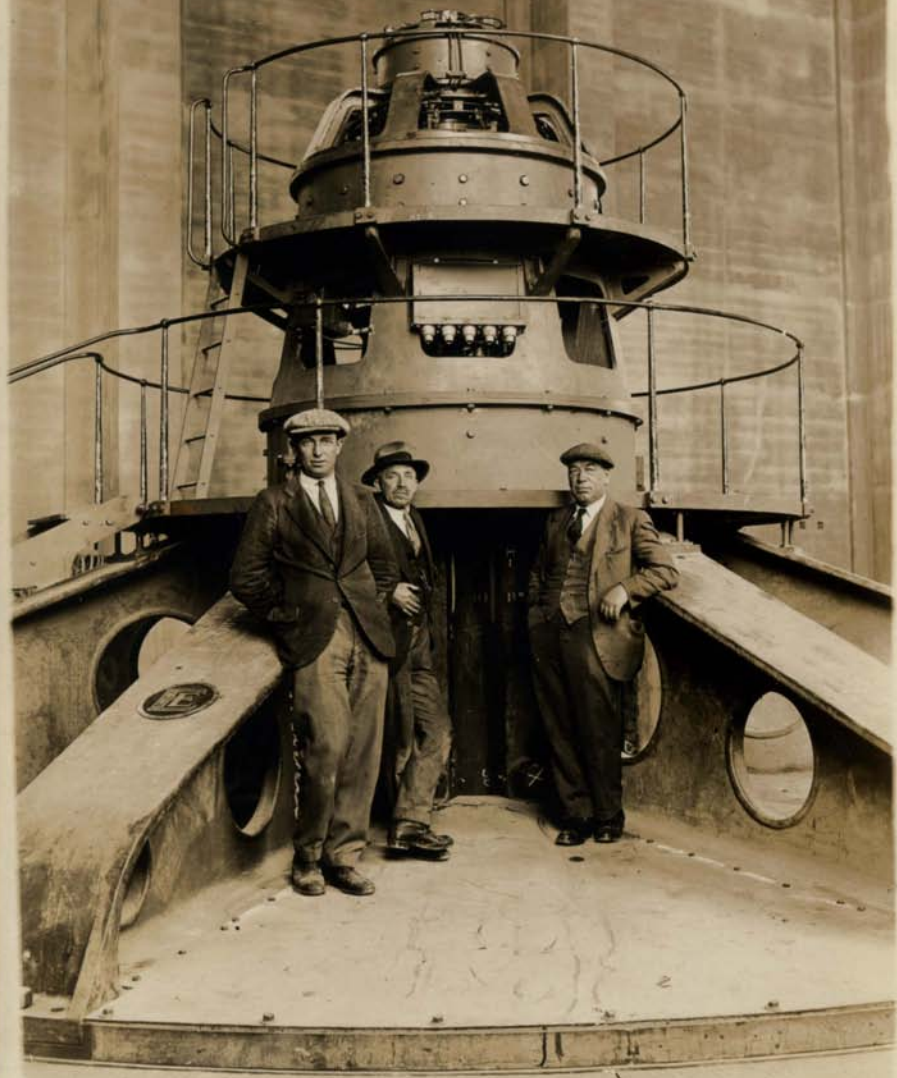


Arch 43

Elizabeth Smith





575
P₂

L.S. PAYNE

2 Arch 3

May 29, 1930.

2nd Turbine runner being unloaded from
SS. Cambridge at Timaru.

①



②



Weight 21 1/2 tons.

Max. diameter 13'-7".

3



Runner being centred
on truck.

4



Runner on special truck
ready for packing.

Timaru - May 30 - 1930.

(5)



Runner and N°2 Generator
parts. Five trucks of overgauge
machinery were brought by
special train to Waitaki Works
on Sunday June 8th.

July 2nd 1930 - Timaru.
ex. S.S. Fort Pirie.

(6)



First transformer
being unloaded.
Weight - 12 $\frac{3}{4}$ tons.

⑦



1st Transformer on
slings being lowered
to truck.

Timaru. July 2nd 1930.

⑧



All 7 transformers on trucks,
S.S. Port Pirie at wharf.

7- 5500 KVA single phase transformers
for main 11 KV / 110 KV banks Δ/Y .

July 3, 1930.

(9)



4 Trucks ready for
rigging.

$\frac{1}{2}$ " dia. steel wire rope
rigging used.

(10)



Rigging of transformers
nearly completed.

Each transformer is mounted
on a wood pad of 6' x 4' timber
Pads chained to trucks.

Waitaki Hydro. Aug 9th 1930.

(12)



Works offices &
transformers on loading
bank.

Timaru - July 4th 1930.

(11)



Trucks rigged for transport.
Transformers came through to
Kuraw by special train on
Sunday July 13th 1930.

June 2nd 1930.

(13)



View showing powerhouse
site, road to village & part
outdoor stations site.

This photo joins on next
view.

June 2nd 1930.

(14)



View from top of penstock
form. Outdoor station site
showing forms for pads.
Dam site in distance.

Glenavy - June 5th 1930.

(15)



Waitaki-Glenavy Line.
Footing of terminal tower
at Substation site.

Glenavy - June 5th 1930.

(16)



Start of line showing
terminal strain tower 40FT.
45FT. suspension towers
in background.

August 7th 1930.

(17)

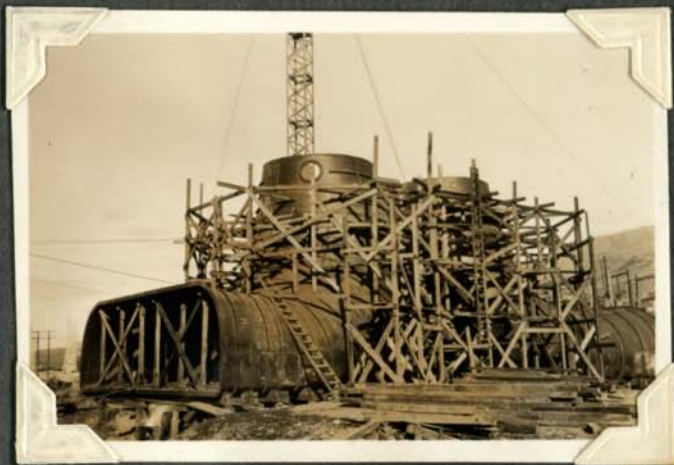


Tower N^o 158. 55 Ft. suspension
under construction.

Waitaki Hydro Works.

Aug. 9th 1930.

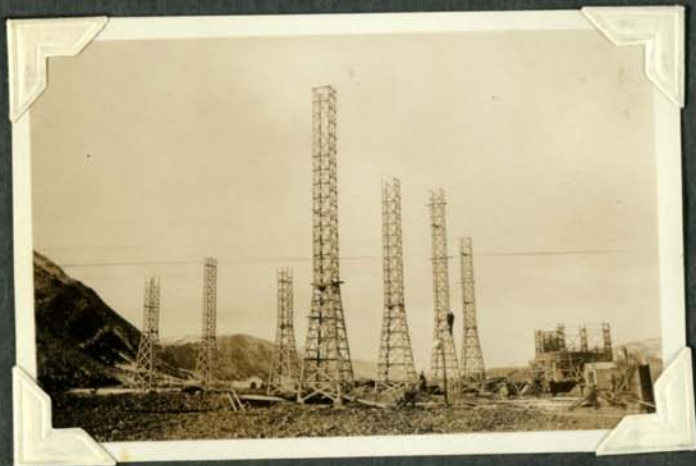
(18)



Turbine draft tubes being
rivetted. Weight approx. 30 tons
each. N^{os} 1 & 2 turbines.

July 28th 1930.

(19)



Outdoor Station steel
structures being erected.
Scroll casing formwork
in background.
Light snow on hills.

Aug. 9th 1930.

(20)



Outdoor Station steelwork.
Towers 50 FT & 43 FT High.

Aug. 9th 1930.

(21)



Outdoor Station. View from
top of tower K.
O.C.B. pads & pad for tower C
just completed.
Dam in background.

July 28th 1930.

(22)



Powerhouse formwork.
Penstock forms for No 5
unit being placed.

Aug. 9th 1930.

(23)



View from top of Tower K at
outdoor station looking downstream
towards Kurow.

Scroll casing & penstock forms
on ground in sections for removal
to powerhouse site.

June 2nd 1930.

(24)



Scroll casing form.
Partly dismantled.

July 28th 1930.

(25)



Powerhouse forms &
steel reinforcement being placed.
Crushing plant & mixer for concrete
in background.

Aug. 9th 1930.

(26)



Timber form for N°4 draft
tube being placed.

Aug. 9th 1930.

(27)



Excavation in Cofferdam
Sheet piling partly removed.
Outdoor station steel towers
in background on left.

Aug. 9th 1930.

(28)



Cofferdam.
Cut off wall excavation on right.
Village houses in background.
Drag-line excavator tipping into hopper

Timaru. Aug. 23rd 1930.

Shipment by

S. S. Pakipaki.

(29)



N^o 2. Generator
half rotor spider.

(30)



Dia. 20 Ft.
Weight. 10 Tons.

Sept. 25. 1930.

(31)



Powerhouse.
No 2 Draft tube in
position.

Sept. 10.

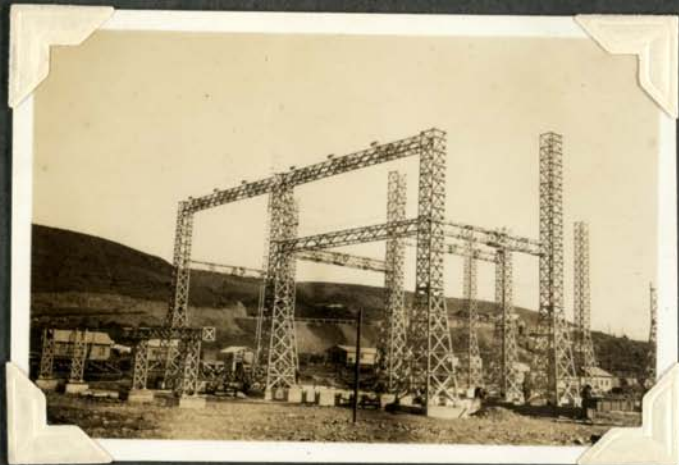
(32)



Powerhouse. Steel liner of
No 2 Draft tube being fitted
in position. Penstock forms
for No 3, 4 + 5 units in position.

Sept 10.

(33)

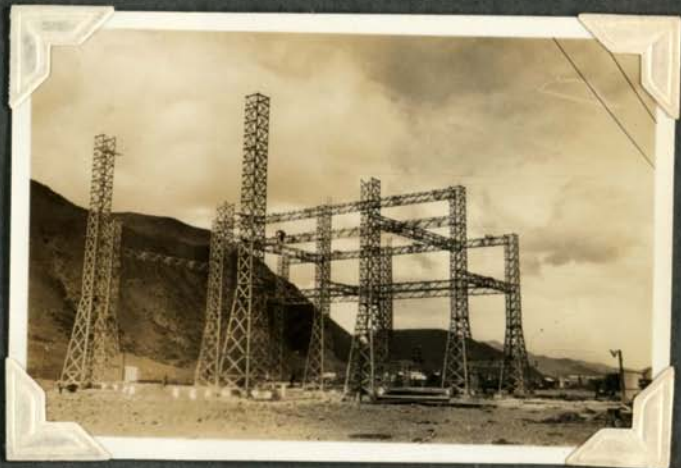


Outdoor station

Last tower (on right) nearly completed.

Sept. 29.

(34)



All towers completed & girders being built.

Lightning arrester switches for No 2 Line being fitted.

No 2 Cofferdam.

Sept. 10. 1930.

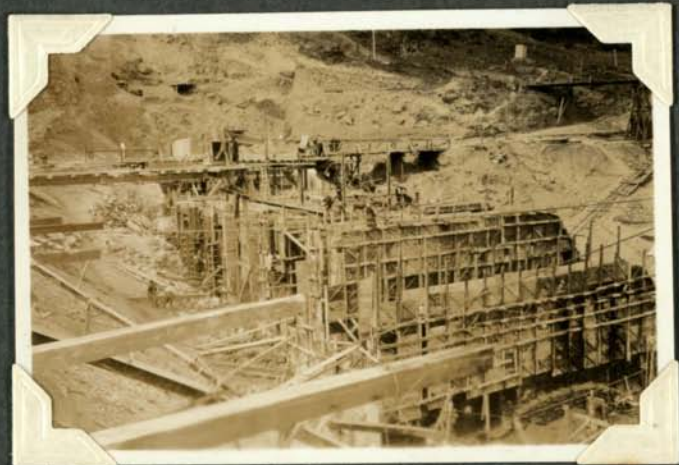
(35)



Midstream side of cofferdam
Water approx. 40ft below
river level outside. Leakage
confined + directed by
sand bags.

Sept. 29. 1930.

(36)



Upstream face of dam.
Sluice gate frames being
fitted in position.

Nº 2 Cofferdam.

Sept. 29.

(37)



Downstream face showing
sluices.

Dam almost joined at centre.
Sheet piling of cofferdam in
background.

Sept. 29.

(38)

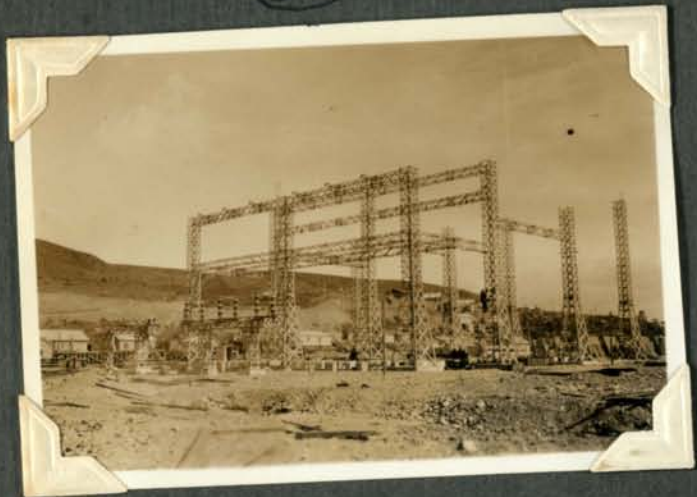


Canterbury side of dam.
Downstream face.

Sheet piling in background

Sept 30. Outdoor Station
steel structures.

(39)



Lightning arrester, isolating
switches for N^o 1 Line
erected in foreground.
Insulator racks in left
background.

Sept. 29. Dam site.

(40)



Trestle bridge over Waitaki
River. Canterbury side of dam
in background. and N^o 2
coffer dam.

Sept. 29. 1930.

(41)



Powerhouse Foundations.

N°2. steel draft tube in position
ready for top flange ring.

5 Ton Butters crane & 10 ton
Insley crane jib working.

Oct. 10. 1930.

(42)



Tower footings for N°144.

50 FT. strain tower.

Powerhouse - Glenavy line.

Power pumps, dewatering holes
for stub setting.

Powerhouse - Glenavy Transmission Line, Oct 10, 1930

Tower N^o 144 - 50 FT strain.

(43)



2-4" Power pumps working

1- 8HP Lister engine

1- Tractor drive.

(44)



Third pump being fitted.

Anderson engine with 4"
centrifugal "Tan-gyro" pump.

Oct. 11. 1930. Nº 2 Cofferdam.

Waitaki River outside in flood and running
at 24000 cusecs.

(45)



(46)



Cofferdam flooded due to high river level
and pump trouble

Waitaki R. crossing.

Oct 10. 1930.

Tower completed - less arms
on same date. (47)



Glenavy side of river.

Total height of tower - 130 Ft.

Existing strain structures
to be eliminated on completion
of permanent crossing.

Oct 24. Part of Weston
Substation. Oamaru.



(48)

Lifting beam & transformer
pads for new bank.
View. looking East.

Oct. 31. 1930.

110 K.V. Air core Current transformers being erected.
on Outdoor Station structures

(49)



Niagara type. Ratio 100:5
Capacity - 40 V.A.
Overall height erected - 9 Ft.
Insulators dismantled for
lifting into position.

(50)



One C.T. has primary
in final position on
3 unit post insulators

Oct 31. 1930.

View taken from top of
Outdoor station structure.

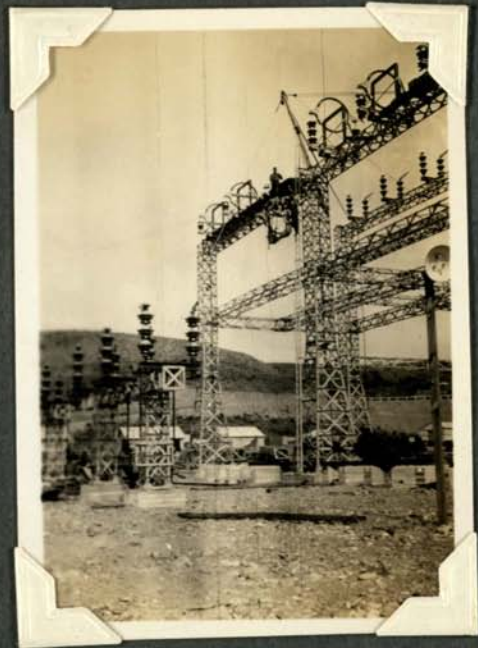
(51)



Permanent cottages on top road.
Powerhouse penstocks on
right centre & portion of
camp beyond.

Nov. 1st. Outdoor Station.

(52)



3rd C.T. for N^o 2. Line
being hoisted into position.
3 C.Ts were hoisted with each
position of gin pole & units
skidded in to place by winch.

Nov. 1st

Powerhouse Foundations.

(53)



Nos 1 & 2 Draft tubes being
grouted in position.

View looking downstream.

(54)



Nos 1 & 2 steel draft tubes
& panstock forms for
Nos 3 & 4 units nearly
completed.

Nov 1. 1930.

N^o 2 Cofferdam.

(55)



The closing section of
dam almost completed.

(56)



Steam driven auxiliary
pumps being used to assist
in power shortage. Village in
background.

Nov. 1st Overhead trestle
bridge to supply bin's for
concrete mixers.

(57)



Otago side of Waitaki R.
Ramp for concrete trucks
on right providing gravity
conveying of concrete across
bridge over river.

Dec. 1st 1930.

(58)



Powerhouse
foundations.

Dec. 1st 1930.

N^o 2 Cofferdam.

(59)



Lower portion of dam
practically completed.
Sluices (11) sandbagged for
flood protection.

(60)



Canterbury side
of dam + steam
pump delivery pipes.

Dec. 1st. 1930.

Power house foundations.

(61)

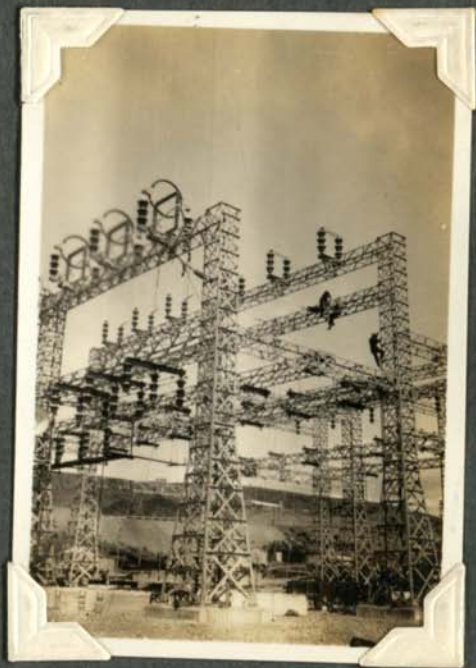


Workshop and unloading
bay in background.

N^{os} 1 & 2 Turbine draft tubes
in position.

Outdoor Station.

(62)



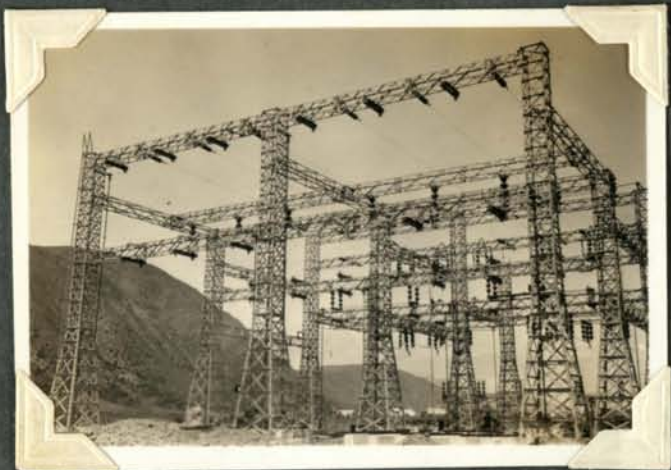
Start being made
on stringing
bus-bars.

Dec. 8th 1930.

Outdoor Station.

Looking downstream.

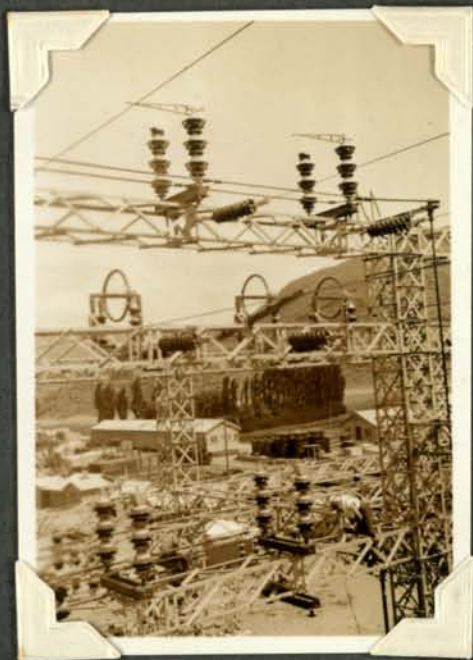
(63)



Isolating switches &
busses being erected.

B.T.H. Line isolators.

(64)

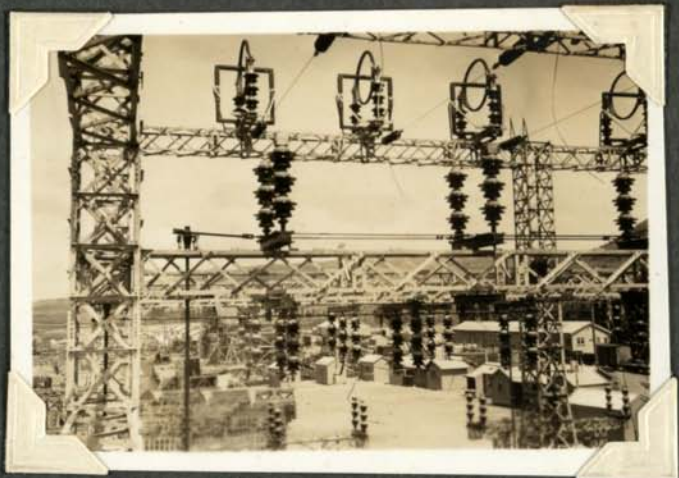


Switchgear showing
operating rods for
control from the
ground.

Dec 8th 1930.

Outdoor Station.

(65)



View of 110 KV. Current
Transformers and air break
switches.

Canterbury side
of dam.

(66)



Toe of dam being
completed & top
extension being
poured.

Dec. 8th 1930.

Powerhouse foundations.

(67)



Main building columns
and arches over tailrace
being boxed.

Dec. 9th

Tower N° 120, 121 etc



(68)

Looking along straight
Towards Glenavy.
55 Ft. suspension tower.

Dec 9th 1930.

Powerhouse - Glenary Transmission

Line - Camp.

(69)



Camp for 70 men. about
5 miles below Hakatamea.
and opposite Strachans.

Tower N^o 120.

(70)

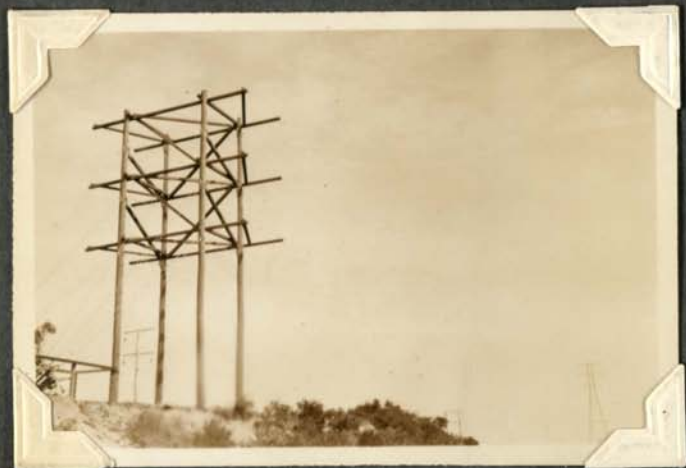


To carry double circuit
3 phase. 110 KV. line
37/102 A.C.S.R.

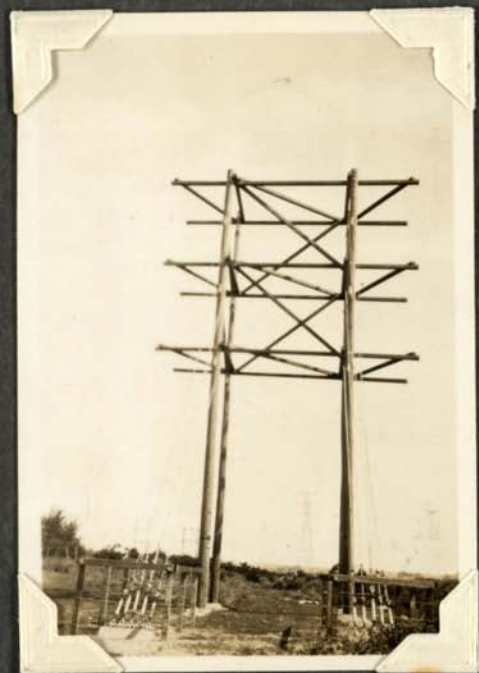
Dec. 9th 1930.

Waitaki River Crossing on
Timaru-Damaru 66 KV. line.

(71)



Special strain structure.
with 2-10 ton concrete anchors.
130 Ft. tower on right.



(72)

Anchor blocks
in foreground.

Dec 9th

Waitaki R. crossing.

From Glenavy side.

(73)



River crossing will be made
in 2 main spans of 38 chains
+ 34 chains on 130 ft. steel
Towers. Conductor 7/8 Copperweld.
9/16" dia. 12 tons of cable in crossing.

Dec. 27th 1930.

(74)

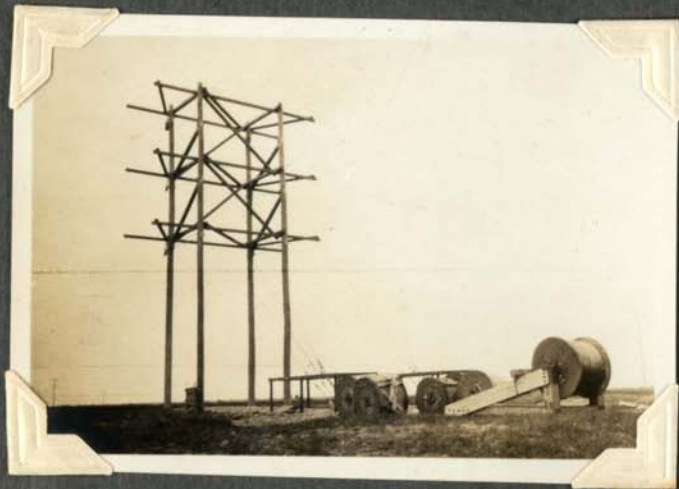


Canterbury side
Dam taken to higher
level.

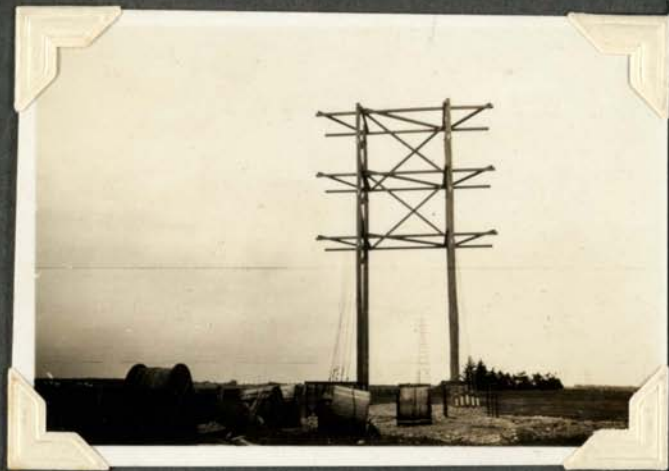
December 19th 1930.

Waitaki River Crossing. Timaru-Camaru Line.
Strain structure at Waitaki side.

(75)



(76)



1/2" dia. steel rope terminated at structure and
spanning river (1 1/4 miles) on temporary interme-
supports in river bed.

Main cable on site ready for stringing.

Dec. 19th 1930.

Powerhouse-Glenavy line

Strain Tower N^o 74.

(77)



Typical running shingle
footing requiring boxing.

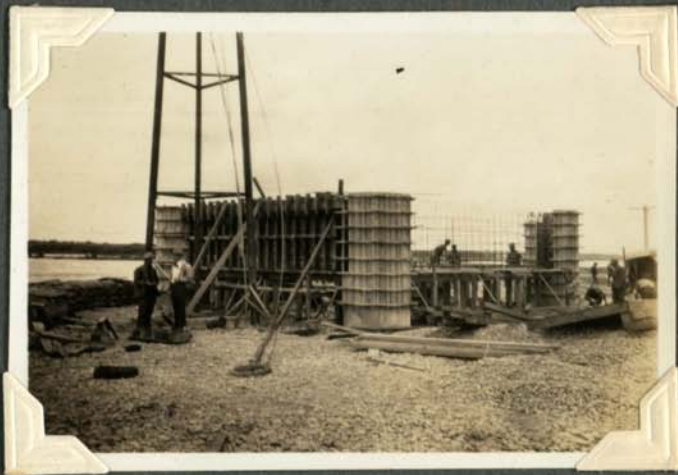
Depth of holes - 13'-4"

Jan'y 19th 1931.

Waitaki River Crossing.

Timaru-Oamaru Trans
Line. - 66 Kv.

(78)



Tie beams to top of
concrete cylinders
(5ft. dia) being cast.

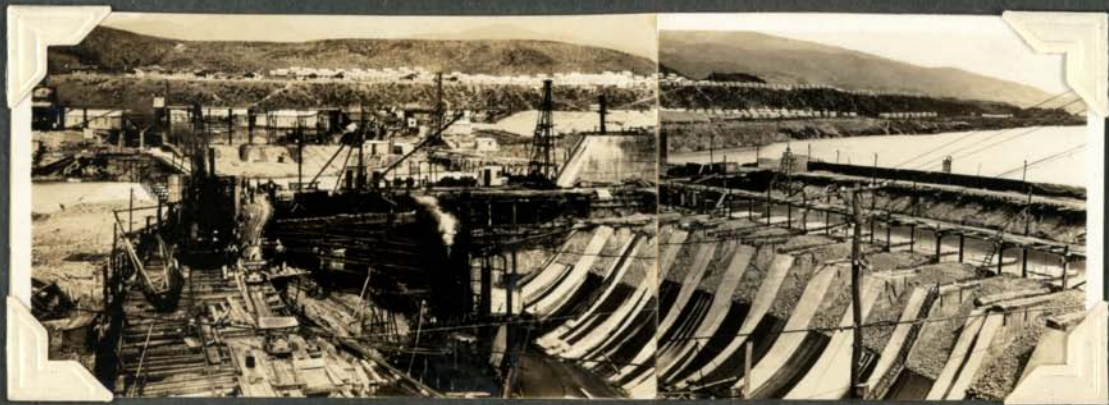
Temporary structure for
wire stringing in foreground.

Dec. 27. 1930.

Waitaki River Dam.

Village in background.

(79)



Taken from Canterbury side.

Sand bag & shingle fill in sluices.

Rails driven on downstream side of lower
trestle bridge preparatory to building new cofferdam.

Jan 19. 1931.

Waitaki River Crossing.

Cylinder foundations for centre tower nearing completion.

Looking downstream

(80)



Looking upstream

(81)



Boulder net protection in front of foundations completed. River running about 50,000 cusecs.

Jan 19. 1931.

Waitaki River Crossing

Temporary structure.

(82)



Boulder net protection.

Bank extended 15 Ft. into
river just before flooded
condition.

Looking downstream.



(83)

Temporary structure
carrying 66 kV. line to
Otago district.
built Jan. 1930.

Jan'y 19th

Edge of boulder nets
under scoured and dipping
to protect face of bank.

(84)



Nets 18 Ft. long arranged
in two rows & hinged to
tilt with bank scour.

Jan'y. 23rd

Looking downstream

(85)



View from top of
centre tower foundations
River rising and starting
to cut through in front of
nets. Compare with
opposite page.

Jan. 23rd 1931.

Waitaki River. Centre tower foundations.

Looking upstream. Railway bridge in background.

(87)



Cylinder top being poured.



Boulder net protection in front of foundation just completed. Top of island completely submerged.

Jan'y 23rd
Waitaki River.

(88)



Boulder nets in
front of cylinders.

Centre tower foundations.

View taken from temp. pole.

(89)



First row of netting around
temporary structure dropping
and protecting bank by
forming an apron.

Jan'y 23rd

Waitaki River cylinders
for centre tower.

(90)



Boulder net protection
during flood period.
Tie beams being finished.

Jan'y 30th 1931.

Weston Substation.
4-1767 K.V.A. transformers.

(91)



Third transformer lifted on
gantry.
Temporary wood structures
being erected.

Jan 30th 1931.

Weston Substation · Oamaru.

(92)



Existing trans former banks
to be replaced by new bank.
Traction engine & road truck.

(93)



Gantry & 15 ton block
lifting trans former on
traverser truck.

Jan 30th - 1931.

Weston Substation - Oamaru.

(94)



(95)



New transformer bank 5300 kVA. 66/11KV. being
installed on concrete pads. Lids & bushings
still to be fitted.

Jan 30th 1931.

Weston Sub.

(96)



Transformers in position
on pads.
Selfcooled type units.

Feb 3rd 1931.

Waitaki River at dam.

Lower trestle bridge
intact.

(97)



River at peak &
running 85,000 cusecs.
in morning.

Feb 3rd 1931

Waitaki River at Timaru-Oamaru main line crossing.

Flood of 85,000 cusecs.

(98)



View looking towards Glenavy.
Steel towers on far bank
faintly visible

(99)



View from bridge looking
downstream. H pole &
cylinders isolated in
centre of river. Main
stream on left.

Feb 3, 1931.

Waitaki River at dam site, in flood. 85000 cu secs.

Top trestle bridge partly gone.

(100)



(101)



Compare with photo (40)
taken from about same
position.

Looking upstream shortly
after break in top
trestle bridge.

Feb. 3rd 1931.

Waitaki River in flood.

(102)



Compare with photo (40)

River at peak of rise.

Feb. 12th

Site of centre tower at
river crossing.

(103)



Compare with Photo (82)

Flood subsided. Shingle
deposited on left where
15ft. deep stream flowed
during flood.

Feb 12th 1931.

Waitaki R. at Transmission Line Crossing.
Main stream now on Otago side of river.

(104)



(105)



Protective islands on Otago side as shown on Photo (99)
completely washed away and fast stream flowing
through centre of foundations & behind groyne.
In centre of cylinders a 10ft. hole was scoured out,
this hole shingled up to 4ft. deep due to sandbag groyne.

Feb 12th 1931.

Centre tower foundations. Waitaki R. crossing.

Timaru - Oamaru Transmission Line. 66 KV.

(106)



Sandbags being placed in front of cylinders
to divert flow and silt up centre of cylinders.
During flood a 15ft. deep stream flowed where
horses now standing.

Feb. 19th 1931.

Weston Substation.

Fitting bushings to bank.

(107)



New bank was put into
service on March 1st and
old banks disconnected.

New supply to substation
service transf. also erected.

Feb. 24th 1931.

Powerhouse form work.

(108)



Scroll cases for Nos 1+2.
Turbines nearing completion
Reinforcing being placed.

March 6th 1931.

Glenavy side

(109)



March 6th 1931.

Waitaki side of river.

(110)



Strain structures for river crossing of 6-N^o 7/8 B.S.
copperweld conductors. Two conductors tensioned.
to about 8200 lbs. each.

March 6th 1931.

Powerhouse - Glenavy Trans. line
110KV. Tower N^o 40 footing.

(111)



Pumping operations during
stub setting. 6" Pump in
foreground. driven by
'Cletrac' Tractor.

Feb'y 24th 1931.

Timaru - Oamaru Line.
River crossing.

(112)



Centre tower almost
completed. (Finished on
25th.) All wires 6. were
strained up. by Mar. 11th
and clamped in Mar. 12th.

March 18th 1931. Waitaki River Crossing.

Centre Tower.

(113)



Boxing stripped from
cylinder foundations.
Cylinders 5'-6" dia. 28'-5" centres.
35 Ft. in riverbed. 44 ft overall height.

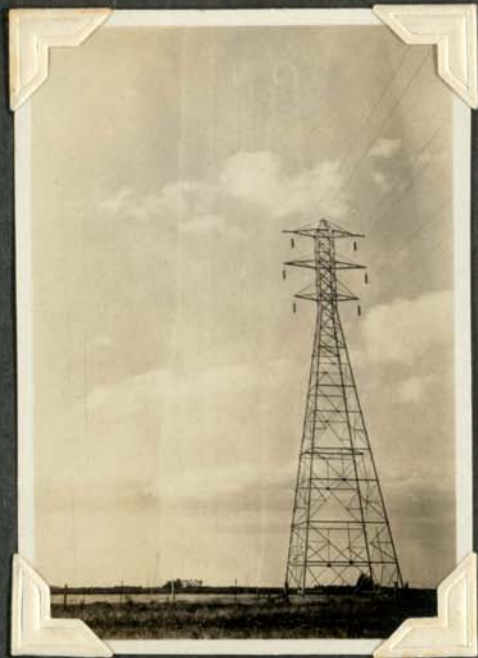
(114)



Waitaki side.
Centre + Glenavy Towers
in distance.

March 18th 1931.

(115)



Spans about centre tower.
Glenavy side 37.8 Chains.
Waitaki side 34.0 Chains.

June 6th 1931.

Powerhouse building.

(116)



South-west corner
Main building columns
being poured.

June 6th 1931.

Powerhouse

(117)



Showing penstocks
and reinforcing.

(118)



Looking down on
Nos 1 + 2 turbine pits.
Guide vanes in position.

June 6th 1931.
N^o 2 Turbine.

(119)



Bottom ring in position
and top ring being
assembled in place.

N^o 2 Turbine.

(120)



Stay vanes in
position inside
scroll case.

June 6th, 1931.

Power house.

(121)



Upstream view of
south east end showing
intakes to penstocks.

June 11th.

Generator rotor segments
on loading bank.

(122)



Frost being melted on
top surfaces. Metal
protected against rust.

June 11th

Glenavy terminal tower

(123)



110 KV. line terminal.
at Glenavy substation

June 11th

Glenavy Substation.

(124)



start of steelwork
erection. Oil switch
tanks in background.

June 11th 1931.

Glenavy Substation. Steel work erection.

(125)



(126)

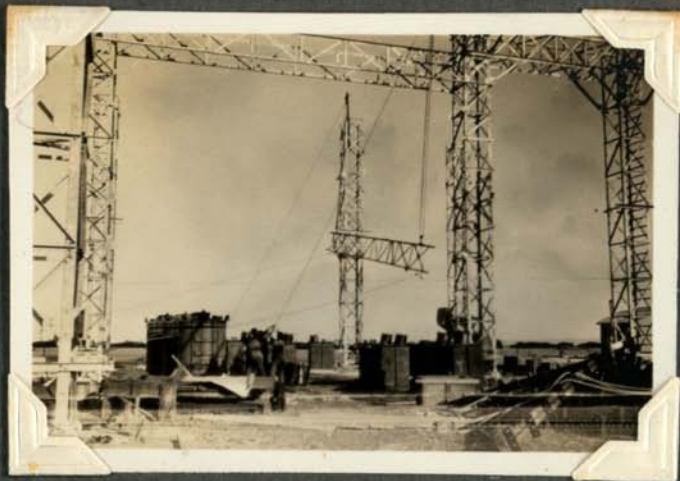


Steel members built on the ground and
hoisted into position.

June 14th

Glenavy Substation. Steel structures.

(127)



(128)



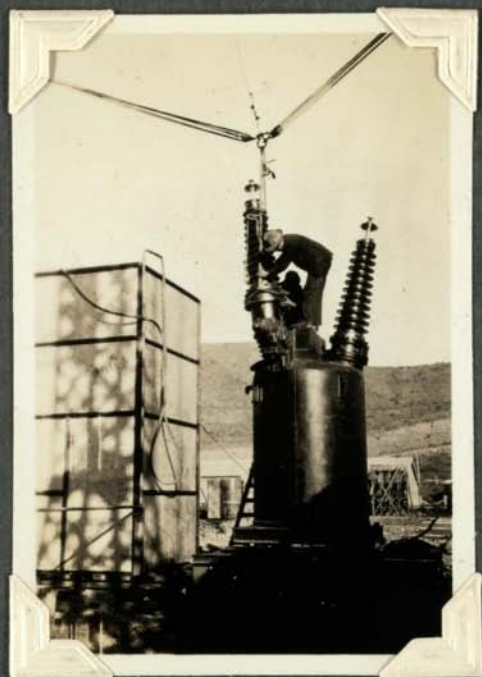
Girder section being hoisted into place
Oil switches and potential transformers in centre
Temporary substation building (2-10x8 huts
joined) showing in corner.

June 13th 1931.

Outdoor Station - Waitaki. Hydro.



129



130

Oil filled 110 KV. bushings being fitted to
switch tanks alongside drying oven on
left. oil piping from pump on dryer.

June 13th.

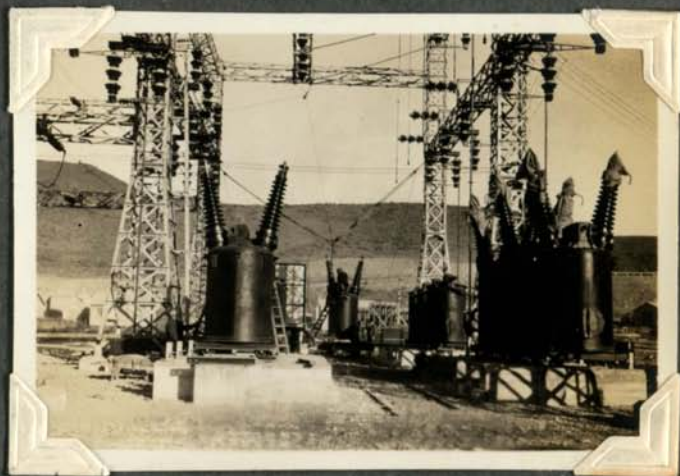
Outdoor Station - Waitaki Hydro.

Bushings being fitted to oil switches.

(131)



(132)



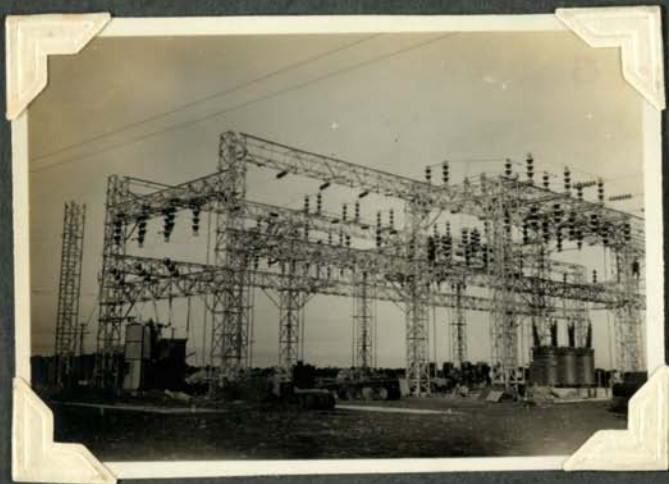
Transformer bank 66/11 KV.
+ metering house on right
for temporary 66 KV supply
to Works. 750 KVA bank.

Method of handling
110 KV. bushings
from drying oven
to sw. tanks.

July 13th 1931. Glenavy Substation.

Main steel structures.

(133)



Portion of substation was
livened up on June 28th to
give supply to Works at
66 KV.

(134)

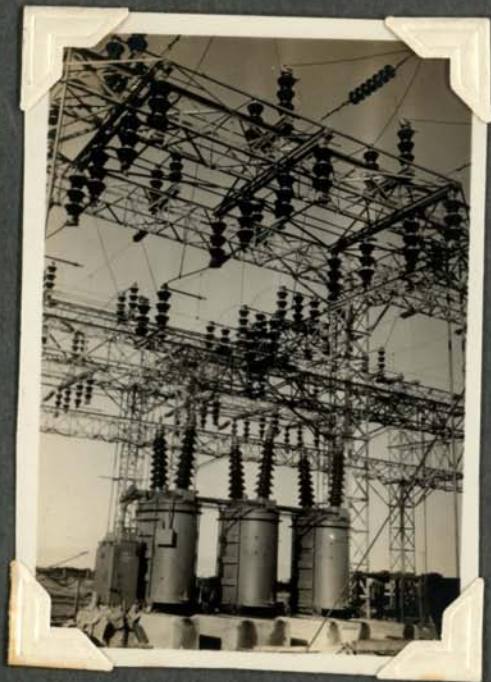


Potential transf.
being installed to
give local supply to
cottages & substation.

July 13th 1931.

Glenavy substation.

(135)

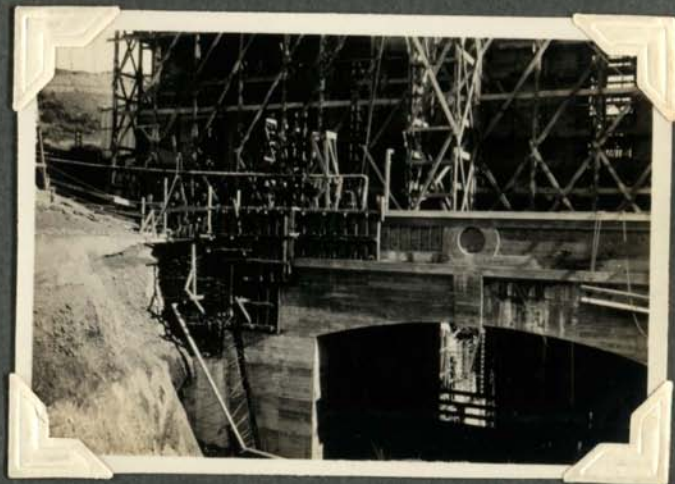


N^o 1 Waitaki line O.C.B.
installed and in
service.

July 30th 1931.

Powerhouse building.

(136)



Showing arch over
tailrace discharge from
N^o 5 unit, also parapet
of transformer platform.

July 30th 1931. Powerhouse. Main walls.

View looking downstream

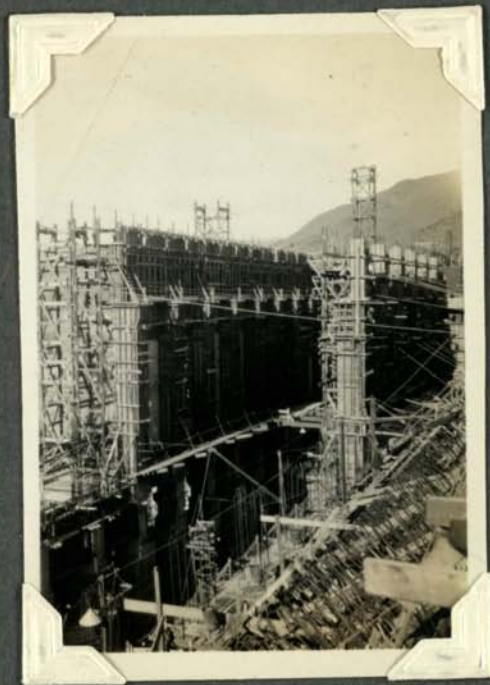
Wall finished above crane
corbel.

(137)



Outdoor station & transmission
line towers in background.

(138)

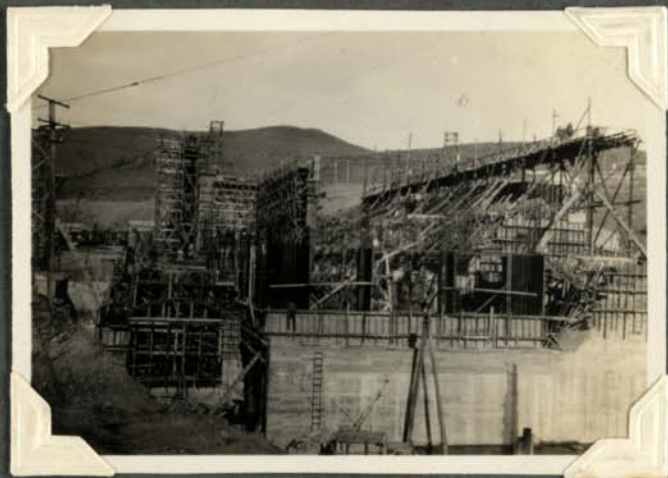


Corbels for crane
runway on walls,
finished.

July 30th 1931. Powerhouse. Waitaki Hydro.

Main building looking
South.

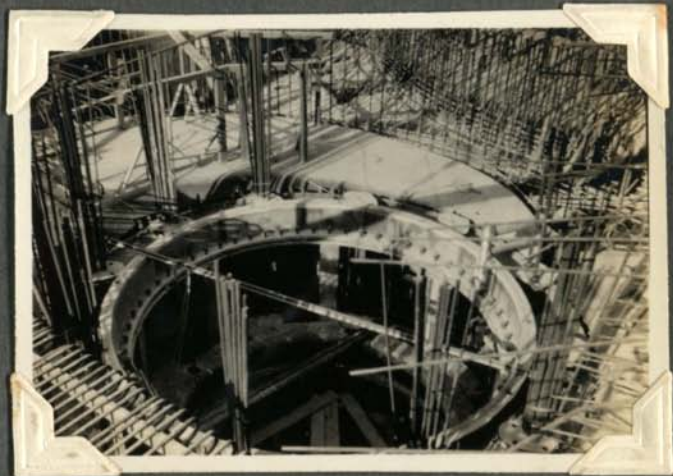
(139)



Concrete being poured
near penstocks for
auxiliary units & over
main penstocks.

No. 1 Turbine scroll
and foundation
rings.

(140)

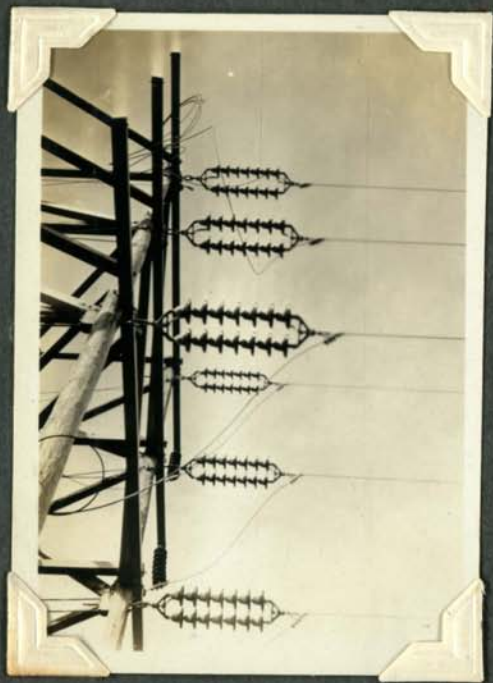


Bottom turbine ring
levelled ready for
checking.

Sept. 17th 1931.

Waitaki River Crossing.

(141)



Strain structure - Glenavy.
OB. Double strain insulators
Nº 26240. East line alive
at 66,000 V.

2nd Timaru - Oamaru line, 66KV.

Erecting poles near Waitaki.

(142)

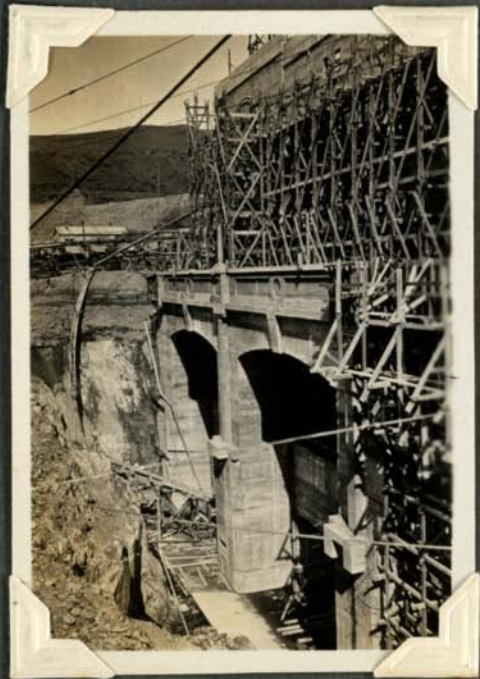


Cletrac tractor and portable
crane lifting 52 Ft. pole

Sept 19th 1931.

Powerhouse building.

143



Tailrace discharge from
N^{os} 4 & 5 units.

Interior of powerhouse

144

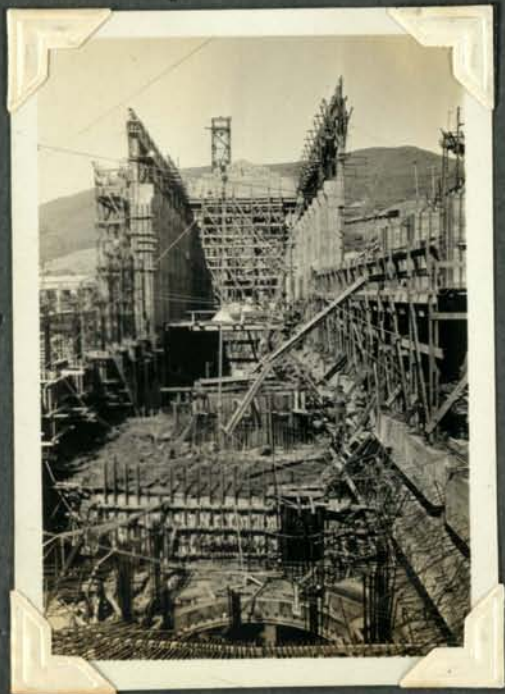


Crane runway in position
on West wall of generator
room.

Sept. 19th 1931.

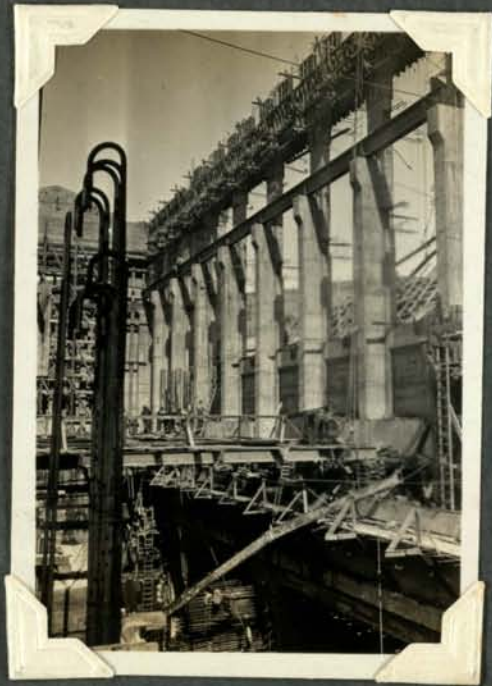
Powerhouse Building.

145



N^{os} 1 & 2 Turbine foundations
in foreground.

146



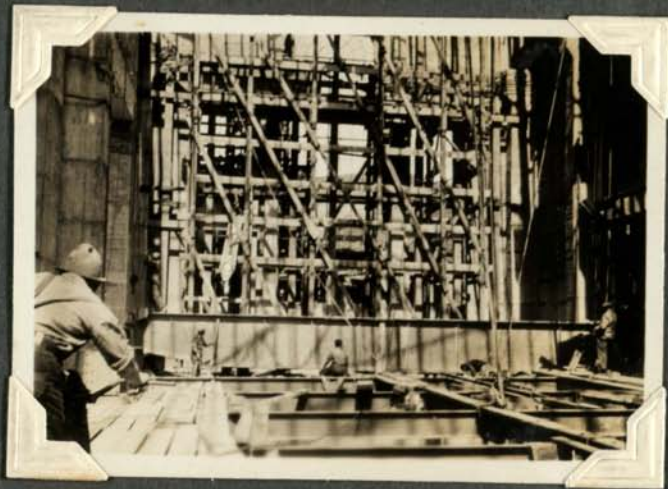
West wall & crane runway.
Temporary floor over N^{os} 3
4 & 5 unit foundations.

Oct. 19th 1931. Powerhouse.

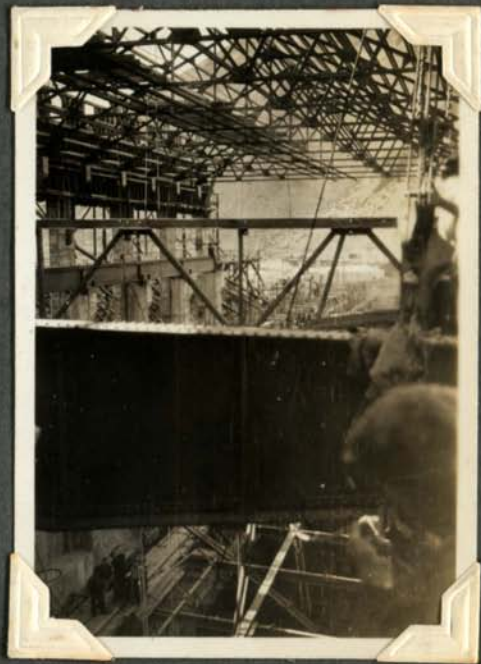
Erection of 120 ton. crane beams.

(148)

(147)



Lifting tackle being rigged.
Winch on left.



1st Beam lifted to
rail level. Auxillary beam
attached to bogies in
position.

Oct 19th 1931.

Powerhouse.

Oct 11th 1931.

Main beam of crane on
rail.

(149)



Beam weighs approx. 6 Tons.
Lifting tackle rigged on
beam across roof truss
footings.

(150)



View looking upstream
approx. half of final
length of building built.

Oct. 11th 1931.

Powerhouse building.

East wall of powerhouse.

(151)



Main Transmission lines will
take off from top of this
wall to the Outdoor Substation.
at 110,000 V.

(152)



Transformer platform
along downstream side

Dec. 21st 1931.

Weston Substation. Oamaru.

Start of steelwork erection. 4 Bays.

153



Main B.T.H. oil switches
in foreground.

154



Self-cooled transfs.
in background.

Dec 29th 1931.

Waitaki Powerhouse.

Downstream side.

(155)



Roof half completed &
roof trusses being placed
for second section of roof

Dec 31st 1931.

(156)



Interior of machine
room showing foundations
for Nos 3, 4 & 5 units.

Dec 31st 1931.

Dam from Powerhouse wall
looking North.

(157)



Section of dam on Canterbury
side practically completed.
Excavation in foreground.

Generator room
from North end of
Powerhouse.

(158)



120-ton crane under
roof. Roof trusses being
placed.

Jan'y 17th 1932. Powerhouse.

Spiral casing for N^o 2 Turbine.

(159)



Spiral steel tip on right
Stay vanes and shroud plates
concreted in position.
Wall frame in position.

(160)

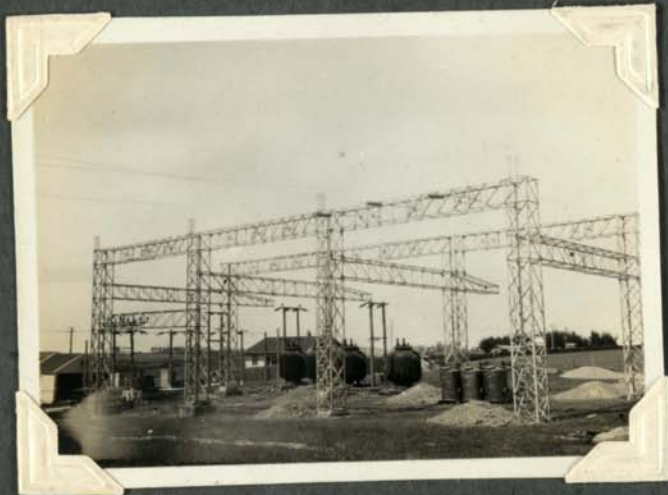


Shroud plate bolt
heads ready for
cutting off to give
smooth flow of water to
runner.

Jan 19th 1932.

Weston Substation.

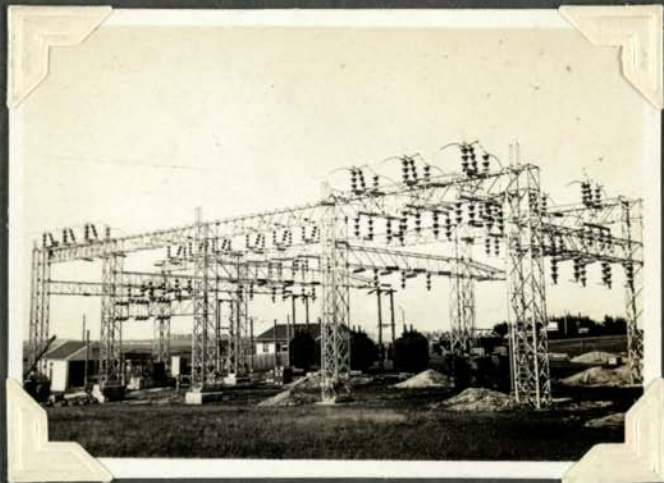
(161)



3 Bays steelwork completed
and new 66 KV. line terminated.

Mar. 9th 1932.

(162)

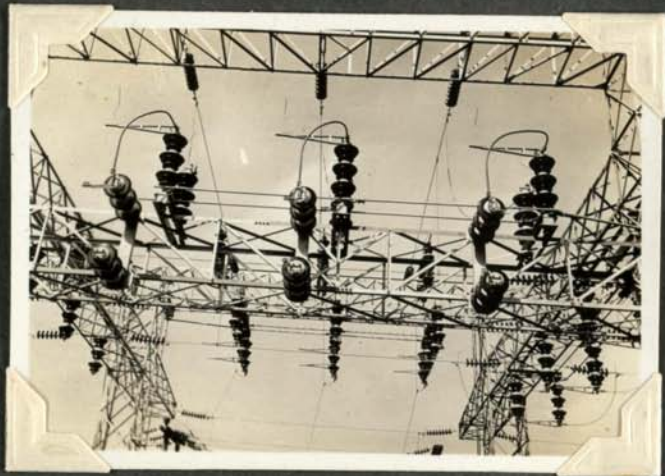


4 Bays completed &
substation alive from
Glenavy on Feby 21st.

March 9th 1932.

Weston Substation.

163



Isolating switch and fuse
clips for future Pot. Transf.
showing alteration of position
of switch poles to clear fuse
insulators.

164



Post type insulator
crates. No insulators
broken on job due
to transport or erection.

March 11th 1932

Powerhouse - Glenavy line.

(165)



Tower N° 2.

55 Ft. Suspension tower.

Insulators: 7 Unit N° 25620. O.B.

Conductors: 37/102 A.C.S.R. with dampers.

Mar. 9th 1932.

Powerhouse - Glenavy line.

(166)



Tower N° 3.

40 Ft. strain tower.

Insulators: 7 Units N° 26240. O.B.

March 19.th 1932.

(167)



N^o 2 Turbine runner on
crane.

Rotor being built over pit.

May 10th 1932.

(168)



Rotor for N^o 2 generator.
Core plates assembled &
field poles being fitted.

May 10th 1932.

Generator stator for N^o 2 machine in Powerhouse.

169



Stator slung ready for lifting
into position by crane.

Weight. 86 Tons.

May 10th 1932.

170



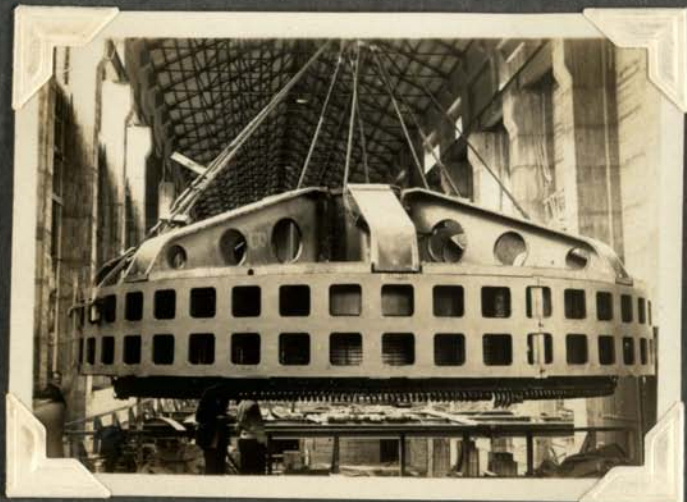
Stator being travelled
along powerhouse.

Rotor over pit in rear
being built.

May 10th 1932.

(Photo taken by Carman.)

171



Stator at North end of
power house ready for
lowering on to foundation
sole plates. 86 tons.

Oct 5th 1932.

N^o 1 Generator rotor.

172



Rotor being lowered
into position.
Weight: 115 tons.

Sept 28^{*} 1932.

Wharekuri Road Bridge.

Across Waitaki River about
5 miles upstream from Works.

(173)



(174)



View looking downstream. Centre span 280ft.
from Canterbury side.

Sept. 28th 1932.

Whare Kuri Bridge.

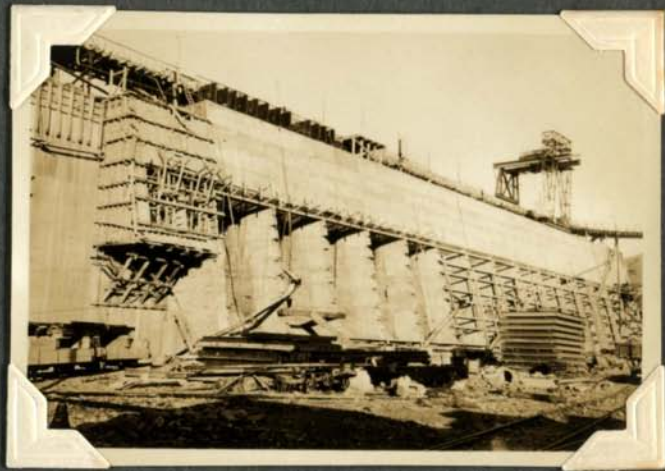
(175)



Otago side in foreground.

June 3rd 1933.

(176)



Intake for turbines. Three
penstocks per main turbine.
Screen frames partly erected.
Headgates gantry crane erected
Main lift 15 tons.

June 3rd 1933.

Canterbury side of dam.

(177)



River diverted to flow
through temporary sluices.
11 Sluice gates.

Sheet piling for final cofferdam
nearly completed across main
stream.

(178)



Otago side of dam on right.
View looking downstream.

Sept. 8, 1933.

Dam with powerhouse
in background.

(179)



Nº 3 cofferdam completed &
being pumped dry.
View looking on top of
temporary sluices.

View showing spoil dumped on
upstream side of cofferdam
to seal off water.

(180)



Dragline excavator in
foreground clearing channel
to sluiceways.

Sept. 8. 1933.

Main dam from Canterbury
abutment.

(181)



Dam near powerhouse
on Otago side of river

(182)



Part of village in background.

Compare with (59).

Two inspection galleries
in dam showing. 10 ton
Insley crane in new position.

Sept. 3. 1933.

Powerhouse and dam.

Downstream side

(183)



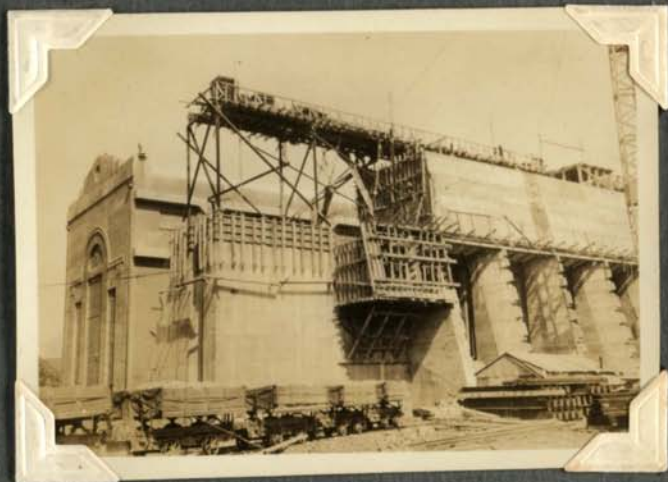
2 Banks of transformers
erected on platform for
outgoing lines.

Draft tubes from turbines discharge
into tailrace below arches.

Feb. 7. 1933.

Powerhouse intakes.

(184)



Intakes for auxiliary
sets at higher level
than main intakes.

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