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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

EKLUTNA PROJECT
ANNUAL PROJECT HISTORY

CALENDAR YEAR 1959

VOLUME IX

NARRATIVE STATEMENT

POWERPLANT

The Eklutna Power Plant generation and distribution figures for calendar year 1959 are as follows:

1. Gross generation	-	165,771,000 KWH
2. Station service use	-	673,600 KWH
3. Net generation	-	165,097,400 KWH
4. Transmission losses	-	7,837,203 KWH
5. Sales to customers	-	157,260,197 KWH

The maximum load on the plant was 34,000 Kw. which is a utilization factor of 113%.

231,441 A.F. of water was used through the turbines during the year and 1504 A.F. were spilled or leaked under the dam. This gives a water factor of 99.4%.

Unit No. 1 was started 174 times during the year and operated 7320.9 hours, generating 83,369,000 KWH. Availability factor during the year was 98.9%.

Unit No. 2 was started 188 times during the year and operated 7252 hours, generating 82,402,000 KWH. Availability factor during the year was 98.7%.

The annual overhaul and inspection of Units No. 1 and No. 2 was completed October 22 and October 16 respectively. The exciters on both units were wiped and blown out and the accessible portions of the stators and rotors were wiped clean of oil and dust. Resistance readings were taken on the resistance temperature detectors and on the generators and exciters.

The turbines and draft tubes were inspected. Galling on the turbine wicket gates was negligible and no cavitation was noted except for a few small spots in the draft tube. The holes causing the cavitation were plugged with lead and the cavitated portions of the draft tube were cut out, welded with stainless steel and ground smooth.

A recurring problem has been the excessive temperature and stuffiness prevalent in the operators control room during the summer months. Several experimental ventilation arrangements were tried. By turning off the switch gear cubicle heaters and bringing in additional outside air, a reasonable degree of comfort was obtained. It is planned to develop a permanent source of filtered outside air for this purpose in the near future.

SUBSTATIONS

The access road to the Anchorage Substation was repaired and built up in an attempt to prevent the impassable condition previously experienced during the spring break-up. Brush was cleared from part of the Government property surrounding the substation to improve appearance. All substation operating equipment underwent regular, recommended annual maintenance inspection.

TRANSMISSION SYSTEM

Structures on 16 miles of the Eklutna-Anchorage transmission line were climbed and all pole and crossarm hardware was checked and tightened. Brush immediately around the structures on the line was cut. The entire right-of-way width was cleared of brush for one mile of this line on the Eklutna end. Some pole damage has been noted due to boring insects identified as carpenter ants. Serious damage from this source has not been found but control measures have been instituted. Transmission line patrol roads have been cleaned up and made passable in most locations.

A contract to drive H-beam piling alongside Eklutna-Palmer line structure 4/13 at the Knik Bridge was completed. A large H-beam anchor structure was driven on the same contract. Project forces completed the fabrication of the pole protectors and the anchor structure. This work including the addition of new guying, was completed just before the Lake George break-up. The ensuing flood did not develop to the damaging proportions experienced in previous years. No damage to Project transmission lines from this source occurred this year.

A snowslide on December 20 completely destroyed structure 3-7 on the Eklutna-Palmer 115kv transmission line. Power was restored to the Palmer and Matanuska valley area over the 34.5kv Matanuska Electric Association transmission line fed from the Reed Substation. The extent of the damage and the inaccessibility of the destroyed structure rendered immediate repair of the 115kv line impractical. The line will be relocated around the slide area and will be constructed as soon as the snow conditions permit.

DRAINAGE, LAKE AND ROADS

The heated precipitation gage functioned correctly throughout the winter and the flame was still burning at the May first check. The amount of precipitation recorded corroborated the results obtained from the adjacent Ptarmigan snow course.

Four new snow depth markers were placed in the upper part of the drainage basin in October. These will serve to give data for runoff forecasting within two or three years as data is accumulated. These markers must be read by airplane or by helicopter.

The upper reaches of the basin were explored and sites spotted for future radio reporting type precipitation stations.

In conjunction with the Geological Survey, reconnaissance flights were made to select sites suitable for stream gaging stations on the two main streams flowing into the lake. This will contribute data pertinent to glacier melting and runoff predictions.

Work was done to improve the trash barrier and break-water structure at Eklutna Lake. A temporary floating log boom was built behind the stationary break-water structure. It served the purpose well but was broken up badly by high winds. The construction of a permanent log boom is planned.

The access road to the surge tank area required frequent cleaning up on rocks and slides. Project headquarters roads and streets were maintained by tractor and by hand.

CAMP AND BUILDINGS

The interiors of two Project houses were completely repainted by Government forces.

The water service lines serving four surplused houses were dug up and shut off at the water main and the lines in, and to the houses were drained to prevent freezing damage.

The office building walls and ceiling were insulated, repainted and sound conditioned with acoustic tile.

The installation of a guard rail on the highway adjacent to the office has been requested from, and the installation promised, by the Bureau of Public Roads in Anchorage.

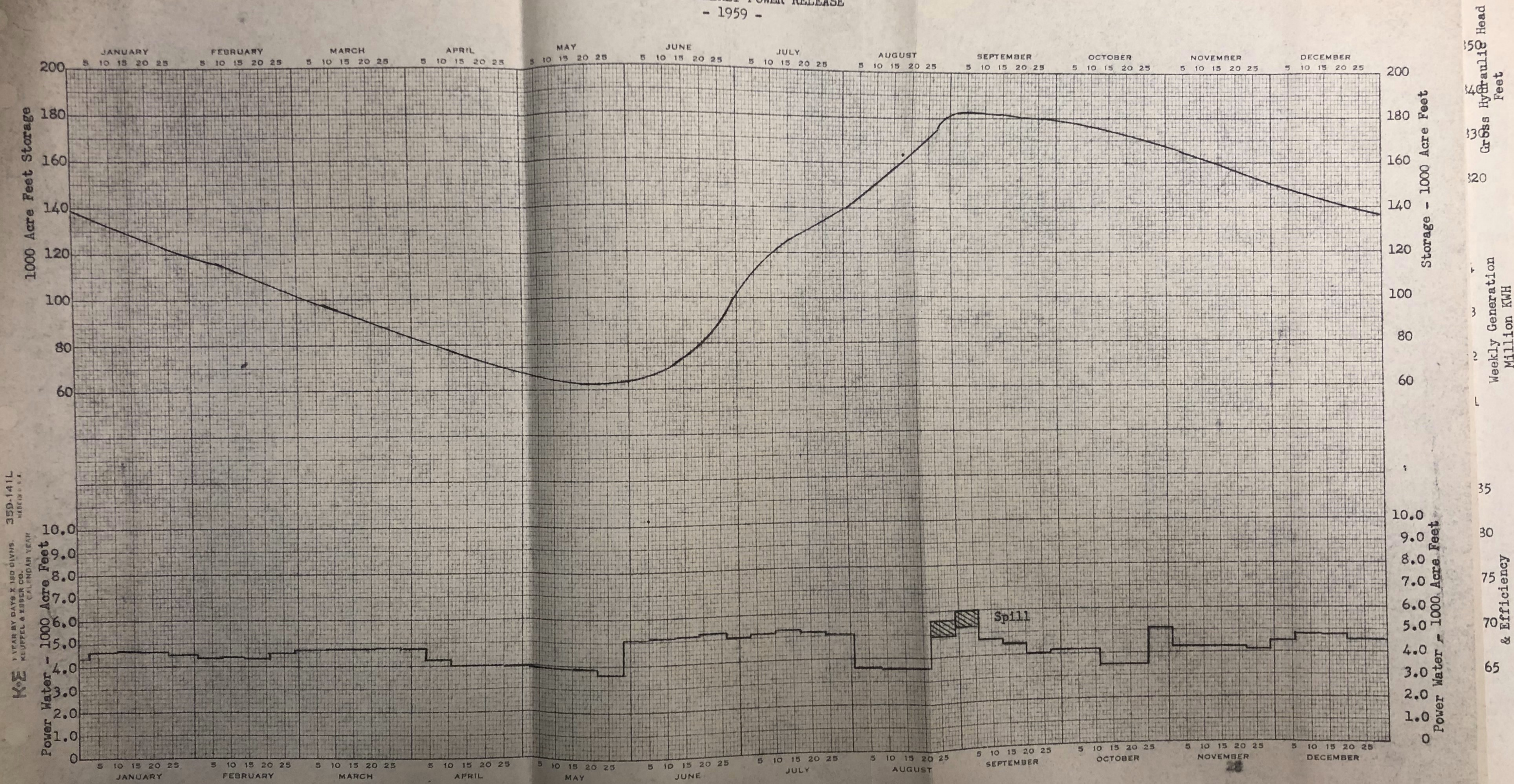
A new access road into the Government camp is contemplated in order to reduce the entry and exit hazard.

PROPERTY MAINTENANCE (VEHICLES)

Extensive repair work was performed on Project vehicles and heavy equipment. The jeeps were all gone over and placed in satisfactory operating condition.

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 EKLUTNA POWERPLANT
 STORAGE AND WEEKLY POWER RELEASE
 - 1959 -

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 1 YEAR BY DAYS X 150 DIVIS.
 KEUFFEL & ESSER CO. CALIFORNIA YEAR