

STRUCTURE 60

This structure is a reinforced concrete, gated spillway with discharge controlled by a stem operated, vertical lift gate. Operation of the gate is manually controlled in accordance with seasonal operational criteria. The structure is located on Canal 33 about 1,500 feet upstream from State Road 534 and 3,700 feet downstream from Alligator Lake.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 33 and in Alligator Lake; it passes the design flood (30% of the Standard Project Flood) without exceeding the upstream flood design stage, and restricts downstream flood stages and channel velocities to non-damaging levels; it passes sufficient discharge during low-flow periods to maintain downstream stages and irrigation demands when water is available.

OPERATION

This structure is operated in accordance with the Alligator Lake Regulation Schedule. This schedule, which ranges between elevations 61.5 and 64.0 indicates the desirable water level throughout the year. If the level is above the prescribed level, flood operation is followed; if the level is below the prescribed level, low-water operation is followed. The operation is also dependent on hydraulic and structural limitations of the structure.

Flood Control Operation

Both S-60 and S-58 discharge from Alligator Lake, consequently discharges from both structures must be considered in establishing release schedules. When the lake level is within 0.5 foot of the level indicated on the Regulation Schedule, a release schedule will be established to return the lake to the scheduled level within 15 days.

This release schedule will be based on the forecasted inflow.

When the lake stage is over 0.5 foot from the prescribed level, maximum releases, subject to hydraulic and structural limitation, will be made.

Low-water Operation

Whenever the lake level is below the prescribed level, minimum releases will be made to satisfy downstream irrigation and navigation demands where water is available.

Structural Limitations

The maximum head across the structure is 7 feet.

The maximum headwater elevation is 68.0 feet.

Hydraulic Limitations

To prevent damage from high velocities, the gate opening will be limited in accordance with the "Maximum Allowable Gate Opening Curve". Moreover, the gate shall be opened gradually to allow tailwater stages to rise before large releases are made.

FLOOD DISCHARGE CHARACTERISTICS

| | Design | Standard Project Flood | |
|---|--------------------------------|--------------------------------|--------------------------------|
| | Lower Profile* | Peak Stage* | |
| Discharge Rate | <u>450</u> cfs | <u>450</u> cfs | <u>800</u> cfs |
| | <u>30</u> %SPF | <u>30</u> %SPF | <u>100</u> %SPF |
| Headwater Elevation | | | |
| Static | <u>62.3</u> feet | <u>64.2</u> feet | <u>67.4</u> feet |
| Wind Tide (Alligator Lake) | <u> </u> feet | <u>66.1</u> feet | <u>68.4</u> feet |
| Wind Tide plus Breaking Wave Height | <u> </u> feet | <u>69.1</u> feet | <u>73.1</u> feet |
| Tailwater Elevation | <u>61.7</u> feet | <u>63.3</u> feet | <u>66.4</u> feet 3 |
| Type Discharge | submerged <u>controlled</u> | submerged <u>controlled</u> | submerged <u>controlled</u> |

*Peak Stage is based on lake operation for design flood which allows 2.0 feet of storage above historic average levels. Lower Profile is based on no rise in lake levels from historic average. Actual operation will probably be close to Lower Profile for the design flood.

DESCRIPTION OF STRUCTURE

Type fixed crest, reinforced concrete, gated spillway

Weir Crest

Net Length 12.0 feet

Elevation 55.0 feet

Service Bridge Elevation 71.0 feet

Water Level which will by-pass structure 71.0 feet

Gates

Number 1

Size 9.1 ft. high by 12.8 ft. wide

Type vertical lift

Bottom elevation of gates, full open 65.0 feet

Top elevation of gates, full closed 64.0 feet

Control manual

Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP gas engine-driven generator

Type Hoist direct drive motor, gear connected to single gate stem

Date of Transfer: May 12, 1967

ACCESS: from State Road 534 via paved access road on east(left) side of C-33

Points of possible flooding _____

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorder

Gate Position Recorder Remote digital recorder

Other _____

DEWATERING FACILITIES

Storage Okeechobee Field Station

Type Stop Logs

Size and Number (per bay)

Upstream 19, 8" X 8" X 13' -2" long

Downstream Same