Project Update for
Beaver Creek Diversion Dredging
and
Adit 4 Spoils Facility Repair
North Fork Stanislaus River Hydroelectric Project

Facilities Committee
December 6, 2017

NCPA Hydro System

McKays Reservoir
2 units @ 126.5 MW each

Beaver Creek

Adit 4

New Spicer Meadow Reservoir
3 units 2 @ 2.75 MW 1 @ 0.5 MW

Lake Alpine
Union Reservoir
Utica Reservoir
North Fork Diversion Dam/Tunnel
Highland Creek
North Fork Stanislaus
Collierville Power Plant
2 units @ 126.5 MW each
Flood Damage and Recovery Summary

- January-February floods filled the Beaver Creek Facility with 11,400 cubic yards of sediment and debris
- Prevented hydropower and consumptive water diversions to McKays
- Emergency permitting and construction
- Restored and fully operational on November 17th
- 15,400 cubic yards removed
- Total costs $2.26M
- Insurance and FEMA reimbursement levels pending
Beaver Creek Intake Structure and Reservoir
New Operator Stand and Deck Repairs
Adit 4 Spoils Facility Repair
Damage and Recovery Summary

- Spoils facility failed December 2015
- Conventional permitting and construction
- Project 90% complete
  - Channel repairs and augmentation ongoing through end of year
  - Access road repairs in spring
  - Completion spring 2018
Canal Demo
Canal Backfilled
Horizontal Drain Collector Manifold
Existing Canal Demo

Upstream Canal Cutoff Wall
Beginning of Clark Creek Canal After Cutting
Schedule

- Project 90% complete
- Flow tests conducted Friday November 10th
  - Water energy dissipation system (baffles) problematic
  - Engineering peer review initiated with GEI 11/10
  - Baffles removed and interim repairs made 11/13 – 12/8
  - Slope repairs, due to test-flow excursions, conducted 11/20 – 12/12
- Design engineer, GHD, paying for repairs
Schedule

- Peer review hydraulic analysis
  - Completed 11/21
  - Confirmed baffles needed to be removed
  - Indicated channel needs augmentation to create additional ~2-3’ freeboard.
  - Preliminary design complete and scheduled for construction 12/8 – 12/21
- Second flow tests planned for January
- Access road repairs planned for Spring

Financial

- Total authorized construction contract costs $2.89M
- Anticipated net contract expenditures $2.6–$2.8M
  - Estimated $400,000 in damage/augmentation
  - Channel augmentation costs under discussion
- Insurance reimbursement levels pending
  - McLaren’s, engineer, responded to NCPA’s August counterproposal in October
  - NCPA provided a detailed written response in October
  - McLaren verbally indicated an interest to close the reimbursement gap and settle
    - Meeting planned in January
Murphys to Collierville Microwave Hop

December 6, 2017

Murphys - Collierville Microwave
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Collierville Maintenance Outage
Collierville Outage

- **McKays Intake Debris Removal**
  - Divers found 6’ to 8’ of debris against the intake.
  - Removed ~15 yd³ over three days

- **Collierville Major Work Items**
  - Rebuild last needle jet
  - Spiral case drain valve rebuild (x2)
  - Turbine runner cavitation weld repairs
  - Main transformer oil processing (x2)
  - Isophase bushing oil leak repair
  - Generator end turn partial discharge repairs
  - Generator condition assessment

- **General Maintenance**
  - Generator & bearing coolers / filters / oil / breakers

- **Testing**
  - Overspeed / inundation / bearing failure / jet brake / diesel gen / fire systems