

Mike Nepple – Sample Professional Experience

Owner: Washington State Department of Corrections

Project: Monroe Correctional Complex TRU Pump Station Replacement

References: Pam Jenkins, P.E. Director Environmental Services - (360) 701-1733

Bill Phillips, P.E. (former) Director of Engineering - (360) 754-2974

Background: A new sewage pump station serving 480 beds had been constructed in the late 1990's to discharge directly to an existing pump station at the Twin Rivers Unit (TRU), seriously overloading the TRU station and causing chronic mechanical failures.

Challenges and Issues:

- Funding limitations required that the existing TRU station's pumps and forcemain piping be used in the replacement facility.
- Only limited historical operating data was available for the station.
- Recent structural damage to the pump station wetwell required that replacement be performed on an expedited basis.

Mike's Role: Served as project manager under former employment, prepared bidding documents and provided assistance to facility staff during the construction and startup phases.



Scope of Project Services:

- Review available record data and field-test the existing pumps.
- Analyze the existing pump stations' hydraulics, including capacity of the gravity mains that received discharge from the pump station.
- Prepare bidding documents and provide assistance during the bidding and construction phases.

Outcomes:

- The pump station design consisted of a 1.44 mgd triplex submersible pump station using the existing pumps installed in a pre-cast wetwell. The station is designed to run two pumps at a time in order to avoid motor overloading, and to provide full alternation in pairs.
- An inexpensive cast-in-place buoyancy control system was incorporated into the wetwell design to avoid structure flotation.
- Controls included PLC-based variable speed motor controls operating off an analog ultrasonic level sensor. Motor controls were set to provide a high initial motor start speed to avoid "ragging", and minimum speed constraints were set to avoid unstable pump conditions when operating at low speed. A mechanical float backup system adds reliability to the facility.
- The new system was brought online in early 2004.

