



## Background

- New Programmable Logic Controller Installed March 22 at SBIWTP Headworks (controls Influent Pumping, Screening).
- Original PLCs are outdated, at end of useful life, can no longer be repaired or obtained
- 3) Programming error caused PLC failure and shut down of influent pump station at 24:00 hours 4/4/12



# PLC Failure Response

- 1) Headworks audible alarms are linked to PLC, so did not sound. SCADA indicated pumps were operational. Influent flow meter signal flatlined and effluent flow meter dropped to zero.
- 2) Two operators on duty believed flow signals were a SCADA problem, and that pumps were still operational.



# Spill Background

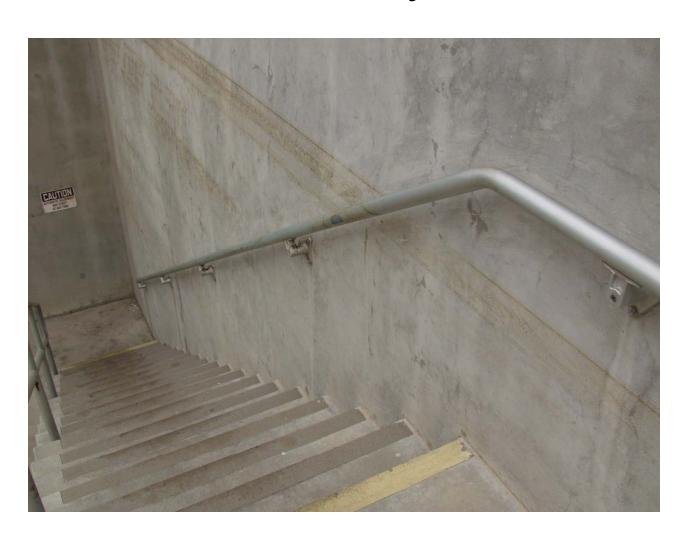
- 1) Operators continued normal rounds until pump station flooding was observed at 2:45 hours on 4/4/12
- 2) Operations Supervisor was notified, and call outs were made, so that pumping of flow was resumed by 3:25 am.
- 3) PLC was reset by 0400 hrs, but pumps continued to be run in manual mode

- 1) Dry well filled with sewage, pump motors were partially submerged.
- 2) Motor damage resulted, causing some pumps to be inoperative and others suspect.
- 3) Spill resulted when dry well reached capacity and sewage flowed out through the collector pipe for Stewart's Drain diversion

# SBIWTP Influent Dry Well Flooding



# SBIWTP Influent Dry Well Flooding

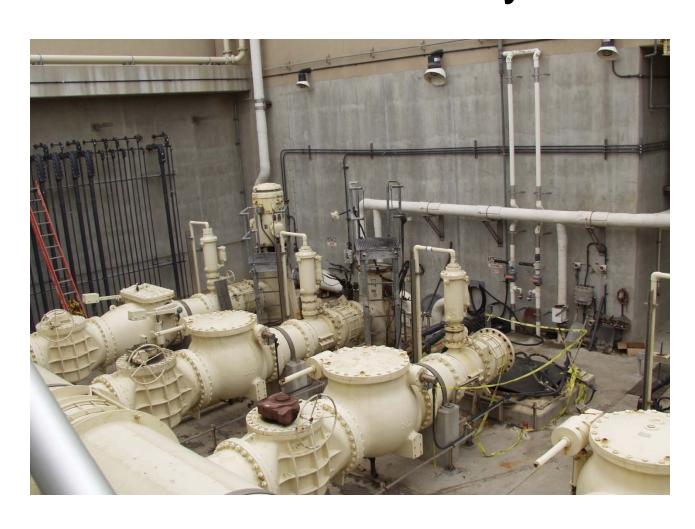


- Spill was not observed, but calculated based on flow at failure, flow at startup, and volume of dry well. First calculated at 2 MG, later revised to 1.5 MG
- 2) Veolia was instructed to file spill report per their contract and NPDES permit. OEM, County Health and City of SD, City of IB were notified via fax.

- 1) Mexico was advised that they may need to increase flow at Pump Station No. 1 at anytime should SBIWTP pump failures occur, and to shut down CILA Pump Station to reduce peak flows to system and avert potential electrical outage and spill from Pump Station 1.
- 2) Pumps were taken out of service two at a time so motors could be repaired.

- 1) CILA PS remained off until 5/2, when sufficient pump capacity was regained. Spill of 1.1 MG in Rio Alamar occurred on 4/24 due to broken line.
- 2) Pump Station 1 was awaiting a electrical transformer repair during April, and on 5/4 was shut down for 8 hours. SBIWTP took flow of 55 mgd for two hours.

# SBIWTP Influent Dry Well



### Veolia Actions

- Audible alarm was installed apart from SCADA should PLC fail
- 2) Corrections to programming error was made on following day.
- 3) PLCs networked so that should any individual PCL fail, another will report the failure.
- 4) Motors repaired (two are still out)
- 5) Appropriate disciplinary action taken for 2 operators on duty

#### **IBWC** Actions

- Investigative meeting held this week. Negative incentives will be assessed Veolia on several counts, based on performance matrix in contract
- Implemented email notification process similar to Surf Report in lieu of fax notification
- 3) Increase frequency of meetings w/ Veolia and operational reports to include staffing issues

#### **Further Actions**

- Provide for weekly river sample at DM Bridge during wet season through City monitoring contract
- 2) Veolia will be conducting reliability/integrity study of SCADA



### Questions?

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