Quest inspar
Pipeline Life Extension Specialists

CASE: RECOVERY OF POWER STATION CONDUIT

SUBJECT

Rehabilitation/Recovery of Critical PVC Power Conduit
Power Generation: Ancillary Electrical Pipe
Liner: PipeArmor 100S

Requirement

A critical PVC conduit in a duct bank designed to sleeve a 7" copper power lead underneath a highway to a power station was compromised during installation with concrete infiltration. Attempts by others to remedy the situation through horizontal boring, destroyed the PVC conduit in many areas. The cost to remove and replace the conduit was a last resort option by the power company contractor.

Environment

Conveyed Material	7" copper electrical cable which had tight tolerances for thermal conductivity
Process Temperature	Ambient
Operating Pressure	Ambient

Serviced Pipeline

- **X** linear feet (LF) of 8" PVC pipe located under a highway.

Challenges

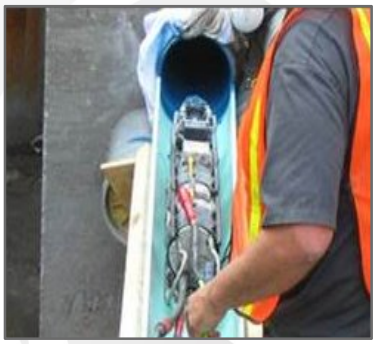
- The PVC pipe was under highway, with perforations, cracks, missing segments and concrete infiltration.
- The requirements of the copper cable dictated that specific tolerances for thermal conductivity be achieved.

Solution and Process

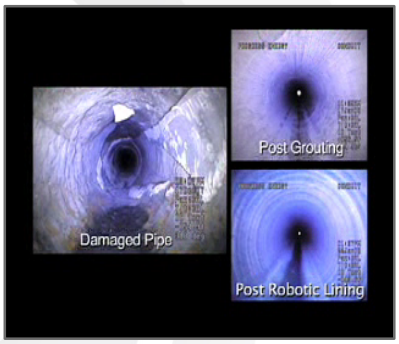
- Designed proprietary grouting robot to provide structural integrity and provide smooth internal surface for lining
- Lined conduit robotically with liner to restore thermal tolerances to decrease friction for copper cable

Findings / Results

- The conduit was fully restored to shape to support the sleeving of the electrical cable at required tolerances.
- Quest Inspar delivered significant savings to the customer over the alternative cost of removing sections of highway and associated construction costs of replacement.



Feasibility: Rehabilitation of the PVC condiut could not have been accomplished without the technical capabilities in Quest Inspar'small diameter robot lining systems..



Process Step: Rehabilitation of the PVC condiut required a three step process. The screens above are (clockwise) images of damage, grouting and post line inspection.

Post Lining: The completed conduit met all customer requirements for structural design and friction tollerance supporting cable connection to the critical power station.