Brandon Shores Power Plant

Curtis Bay, MD

Project Contacts: Murat Engindeniz, Rasko Ojdrovic, Mehdi Zarghamee

Brandon Shores Power Plant (BSPP) has a proactive inspection and repair program for circulating water and service water pipelines, including prestressed concrete cylinder pipe (PCCP), steel pipe,...

Services: Structural Investigation, Structural Rehabilitation

Markets: Water/Wastewater

Keywords: Composites-FRP / CFRP / GFRP, Condition Assessment, Construction Administration, Inspection, Laboratory Testing and Analysis, Metal-Steel, PCCP, Pipe, Power, Testing/Inspection

City of Columbus Pipeline

Columbus, OH

Project Contacts: Murat Engindeniz, Rasko Ojdrovic

While attempting to install telecommunications lines below a creek, a driller punctured a buried, 48 in. dia. prestressed concrete cylinder pipe (PCCP). The pipe is part of Columbus’s water system...

Services: Structural Rehabilitation

Markets: Government

Keywords: Composites-FRP / CFRP / GFRP, Failure Investigation, Laboratory Testing and Analysis, PCCP, Pipe, Pipeline
Palo Verde Nuclear Generating Station
Pipelines
Tonopah, AZ
Project Contacts: Rasko Ojdrovic, Mehdi Zarghamee

Constructed in the early 1980s by the Arizona Public Service Company, the water reclamation supply system at Palo Verde Nuclear Generating Plant consists of thirty-six miles of prestressed...

Services: Structural Investigation
Markets: Nuclear
Keywords: Condition Assessment, Corrosion, Cracking, Failure Risk Assessment, PCCP, Pipe, Pipeline, Risk Assessment

Miami-Dade Water and Sewer Authority
Miami, FL
Project Contacts: Murat Engindeniz, Rasko Ojdrovic

In 2010, Miami-Dade Water and Sewer Authority (MDWSA) instituted a continuous inspection and repair program for their 48 in. to 96 in. dia. prestressed concrete cylinder pipes (PCCP). With brief...

Services: Structural Investigation, Structural Rehabilitation
Markets: Water/Wastewater
Keywords: Composites-FRP / CFRP / GFRP, Construction Administration, Failure Risk Assessment, Inspection, Laboratory Testing and Analysis, PCCP, Pipe, Pipeline, Testing/Inspection
Fermi 2 Nuclear Power Plant, Circulating Water Pipeline

Monroe, MI

Project Contacts: Murat Engindeniz, Rasko Ojdrovic

The 144 in. dia. circulating water pipeline at Fermi 2 consists of two intake lines between the reservoir and condenser and two discharge lines between the condenser and two cooling towers. All...

Services: Structural Investigation, Structural Rehabilitation

Markets: Nuclear

Keywords: Composites-FRP / CFRP / GFRP, Concrete Rehabilitation, Failure Risk Assessment, PCCP, Pipe, Pipeline

Muskegon County Wastewater Management System

Muskegon, MI

Project Contacts: Rasko Ojdrovic, Mehdi Zarghamee

The Muskegon County Wastewater Management System's pipeline is an 11 mi, 66 in. dia. prestressed concrete cylinder pipe (PCCP) that carries raw domestic and industrial sewage. SGH investigated the...

Services: Materials Investigation, Structural Investigation

Markets: Water/Wastewater

Keywords: Condition Assessment, Corrosion, Engineering Mechanics, Failure Investigation, Field Testing, Laboratory Testing and Analysis, Metallurgy, PCCP, Petrography, Pipe, Pipeline
Seismic Assessment of Pipelines

Canada

Project Contacts: Mehdi Zarghamee

Prestressed concrete cylinder pipes (PCCP) are extensively used in the cooling system of power plants. SGH evaluated the seismic performance of buried PCCP pipelines in low, moderate, and high...

Services: Structural Design
Markets: Water/Wastewater
Keywords: Engineering Mechanics, International, PCCP, Pipe, Pipeline, Seismic Analyses

Central Arizona Project

Tucson, AZ

Project Contacts: Mehdi Zarghamee

The 252 in. dia. concrete pipe is used in siphons to convey water in the Central Arizona Project and is the largest diameter pipe in the world. The pipes have a 19.625 in. thick concrete core and...

Services: Structural Rehabilitation
Markets: Water/Wastewater
Keywords: Cracking, Excavation, Failure Investigation, Finite Element Analysis, PCCP, Pipeline, Risk Assessment, Soil-Structure Interaction
**Water Research Foundation, Prestressed Concrete Cylinder Pipe Condition Assessment**

United States

**Project Contacts:** Rasko Ojdrovic

Prestressed concrete cylinder pipe (PCCP) have been used for water transmission systems for more than sixty-five years. Therefore, utilities need effective means to identify distressed or...

**Services:** Structural Investigation

**Markets:** Water/Wastewater

**Keywords:** Codes & Standards, Condition Assessment, Deterioration, PCCP, Pipe, Pipeline, Research/Development

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**Water Research Foundation, CFRP Renewal of Prestressed Concrete Cylinder Pipe, Project 4352**

United States

**Project Contacts:** Murat Engindeniz, Mehdi Zarghamee

Prestressed-concrete cylinder pipe (PCCP) makes up a significant portion of pipelines for the world's water, wastewater, and cooling water systems. Distress to PCCP can include broken wires,...

**Services:** Structural Investigation, Structural Rehabilitation

**Markets:** Water/Wastewater

**Keywords:** Analytical Studies, Codes & Standards, Composites-FRP / CFRP / GFRP, Field Testing, Laboratory Testing and Analysis, PCCP, Pipeline, Plastic/Composite
Calleguas Municipal Water District, Conduit North Branch

Thousand Oaks, CA

Project Contacts: Rasko Ojdrovic, Mehdi Zarghamee

Calleguas Municipal Water District experienced a failure in 140 ft of steel liner within a 78 in. dia. prestressed concrete cylinder pipe (PCCP) water main. The failure resulted in local flooding...

Services: Structural Rehabilitation
Markets: Water/Wastewater
Keywords: Finite Element Analysis, Metal, Metal-Steel, PCCP, Pipe, Pipeline

MWRA, Spot Pond

Stoneham, MA

Project Contacts: Rasko Ojdrovic, Mehdi Zarghamee

SGH developed an emergency repair for a 48 in. dia. prestressed concrete cylinder pipeline penetrating the concrete core of the Spot Pond Dam. The pipe was cracked at the penetration point due to...

Services: Structural Rehabilitation
Markets: Water/Wastewater
Keywords: Corrosion, Cracking, Emergency Response, Failure Investigation, PCCP, Pipeline, Soil-Structure Interaction
North Coast Superaqueduct

Arecibo to San Juan, PR

Project Contacts: Rasko Ojdrovic, Mehdi Zarghamee

The 72 in. dia. North Coast Superaqueduct carries water 70 km from Arecibo to San Juan. Just after construction, the aqueduct experienced failure of two pipe segments during a transient pressure...

Services: Materials Investigation, Structural Investigation

Markets: Water/Wastewater

Keywords: Condition Assessment, Engineering Mechanics, Failure Investigation, Metallurgy, PCCP, Petrography, Pipeline, Risk Assessment