



CIRCULATING WATER LINE INSPECTION FINDINGS

TesTex has been performing inspections on Circulating Water Lines for power plants. The inspection consists of an API 570 certified piping inspector conducting a thorough visual inspection internally and externally as access permits. Ultrasonic thickness measurements are taken where accessible.

The pipe crawl through usually takes half a shift per Circulating Water Line with the rest of the shift spent preparing a report. The report includes Observations, Recommendations for repairs per API 570 guidelines, Thickness Readings, ISO Drawing of the Pipe Layout, and Pictures taken during the inspection.

The Circulating Water Lines need to be drained prior to entry. The plant is responsible for providing access to the line and supply a confined space rescue team.

Listed below are pictures of some of the conditions TesTex has found in Circulating Water Lines.



Circulating Water Line showing the concrete surface with coating in some areas

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Coating on carbon steel section of pipe



Junction of two carbon steel pipe sections where the coating has failed leading to the formation of corrosion blisters.



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Damage to the coating of the carbon steel piping



Coating Failure at a concrete joint



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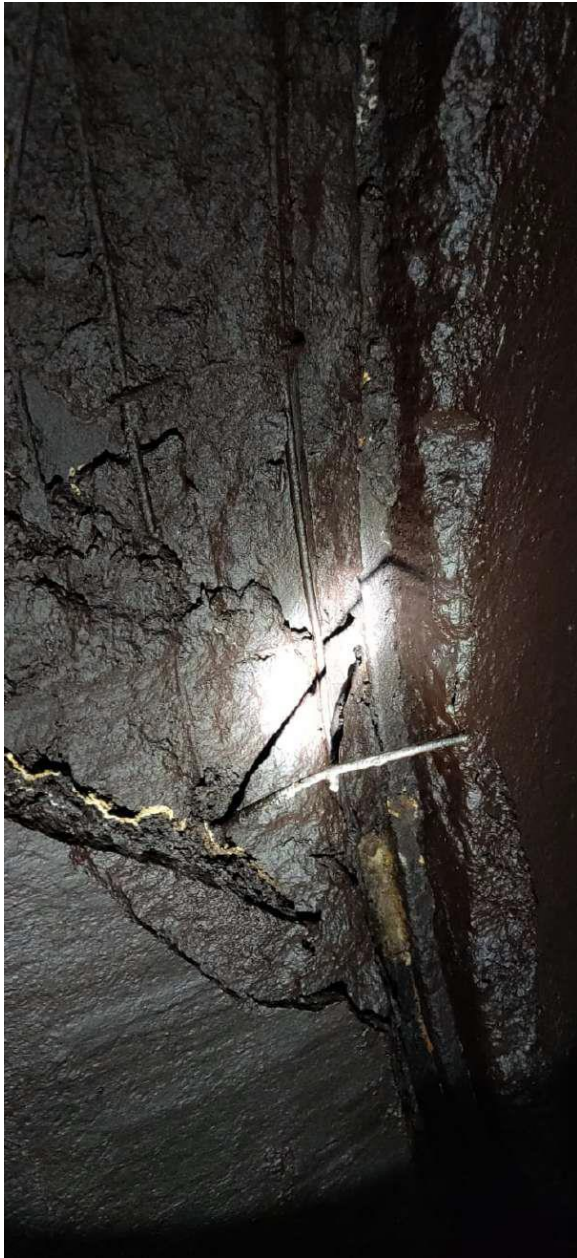
Axial Cracking on the concrete line pipe



2" deep pit in concrete



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Broken prestressed wire at a bend



Cement Gap at a Joint



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Cement Disintegration



Circumferential Crack between joint 1 & 2



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Cracking and Pitting on concrete liner



Concrete Gap at Joint



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Excessive amount of mud found in Circulating Water Line.



Photo shows the area with significant sediment buildup. This area is close to the condenser on the outlet side of the system.



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Deep Cracks in the Mortar coating on a Riser Pipe



Corrosion Deterioration at flange



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Coating Failure at a flange on the Riser Pipe



Prestressed wire exposed and broken on mortar coating of a Riser Pipe



Deep Mortar Cracks on a Riser Pipe



Lack of thread engagement on bolt at flange

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Cement base disintegration where Discharge pipe comes out of ground on Condenser side



Mortar Coating failure on Riser B

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Severe bolt corrosion on flange



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Coating Failure where Circulating Water Line comes out of the ground



Side view of I-beam support with active corrosion

Upon completion of the visual inspection, TesTex provides a report detailing any areas of concern during the inspection to allow the plant to make repairs during the outage.



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Another issue some Circulating Water Lines have is external corrosion where the pipes go through the concrete floors in the power house. A leak at this location can flood the basement and damage controls and other equipment.

Testex can perform a Low Frequency Electromagnetic Technique (LFET) inspection internally where the pipe penetrates the concrete floor to detect and quantify corrosion occurring on the exterior pipe surface. The plant is required to provide scaffolding and surface preparation.



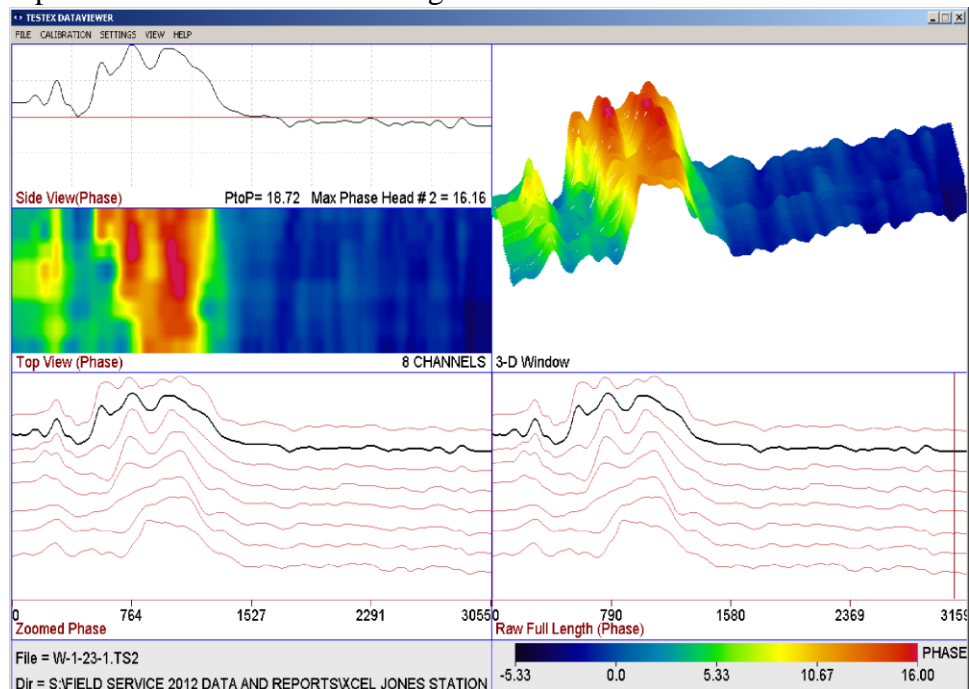
The picture above shows a technician scanning the Circulating Water Line where it penetrates the concrete basement floor.



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A hole found in a Circulating Water Line where it penetrates the concrete basement floor. The concrete had prevented this line from leaking.



LFET waveform showing a hole in Circulating Water Line where it penetrates the concrete floor.



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Please contact Shawn Gowatski by phone at 412-798-8990 or by email at s.gowatski@testex-ndt.com to schedule your Circulating Water Line inspection.