

cantilever™
Cyber Physical Bridge **gecko**

New Year – Safety Equipment

Important to check the safety equipment before each use.

This applies to seat belts, harnesses, ladders, safety glasses, hardhat, etc.

Fall Protection needs routine inspections. Hard hats do expire and need to be replaced. Don't forget those smoke detector batteries as well.



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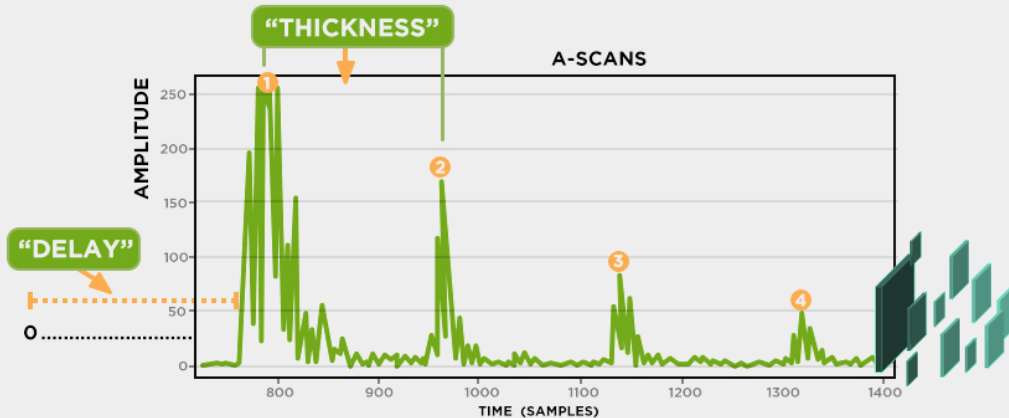
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	Lower Throat										
	770	771	772	773	774	775	776	777	778	779	780
620		0.170		0.162	0.222		0.168		0.182	0.178	
619											
618											
617											
616											
615		0.160		0.187	0.216		0.156			0.173	
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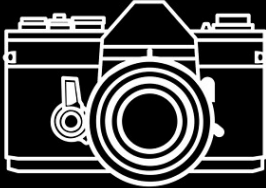

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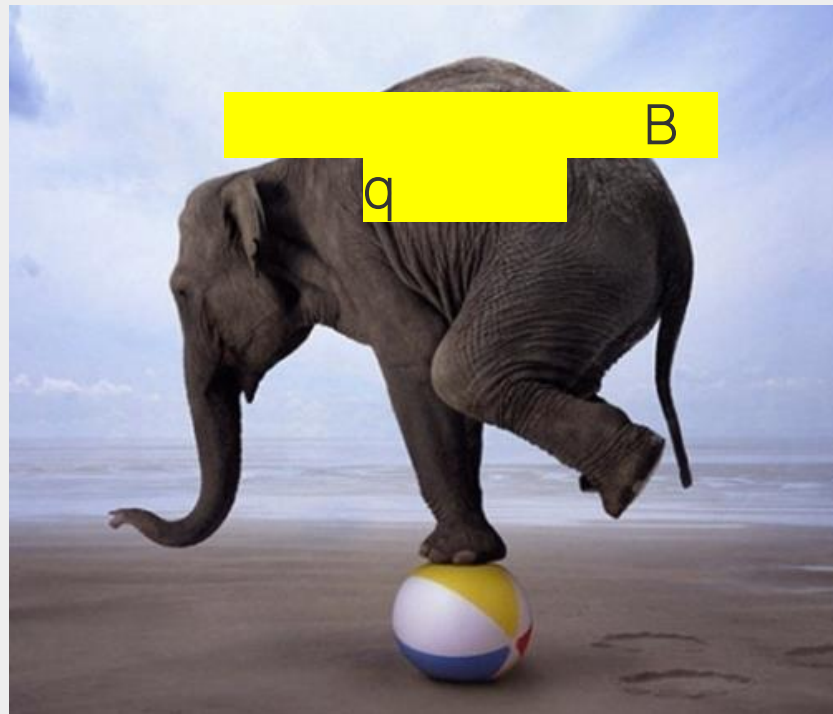
PHOTOGRAPHY THEN vs NOW...

24	PHOTOS TAKEN	4000
24	PHOTOS PRINTED	0
24	PHOTOS LOOKED AT	0

c) The authorized inspector shall visually or otherwise decide which vertical plane(s) in the area is likely to be the most affected by corrosion. Profile measurements shall be taken along each vertical plane for a distance, L . In the plane(s), determine the lowest average thickness, t_1 , averaged over a length of L , using at least **five** equally spaced measurements over length L .

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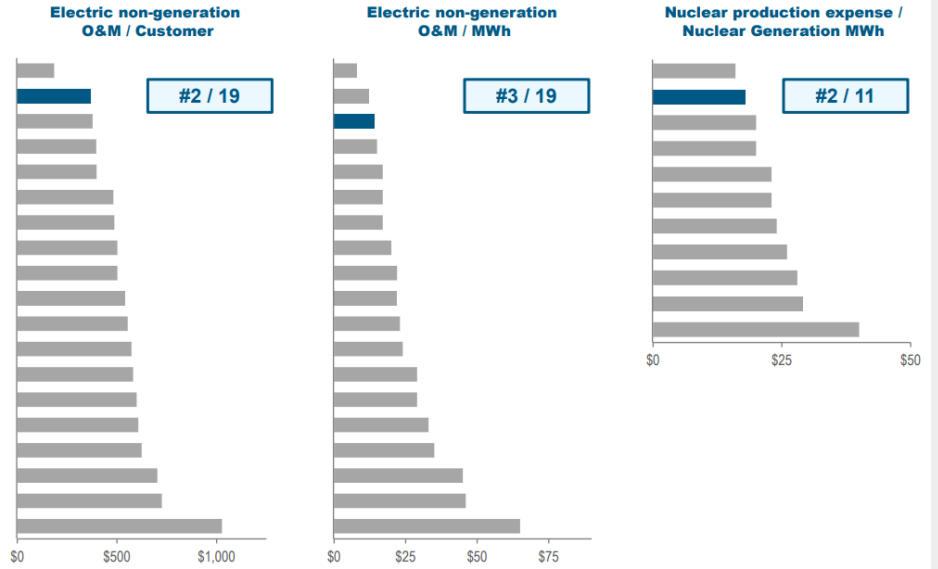
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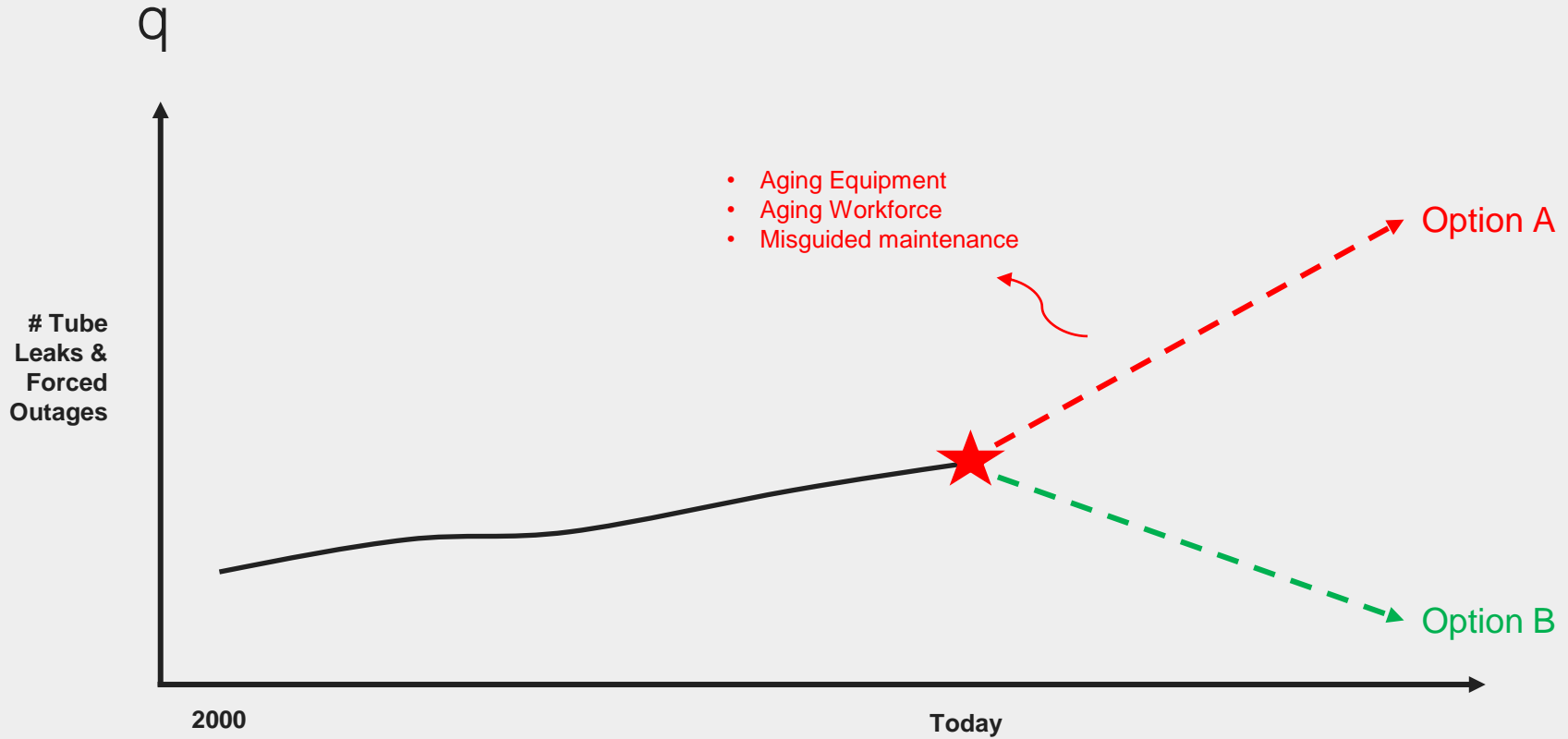
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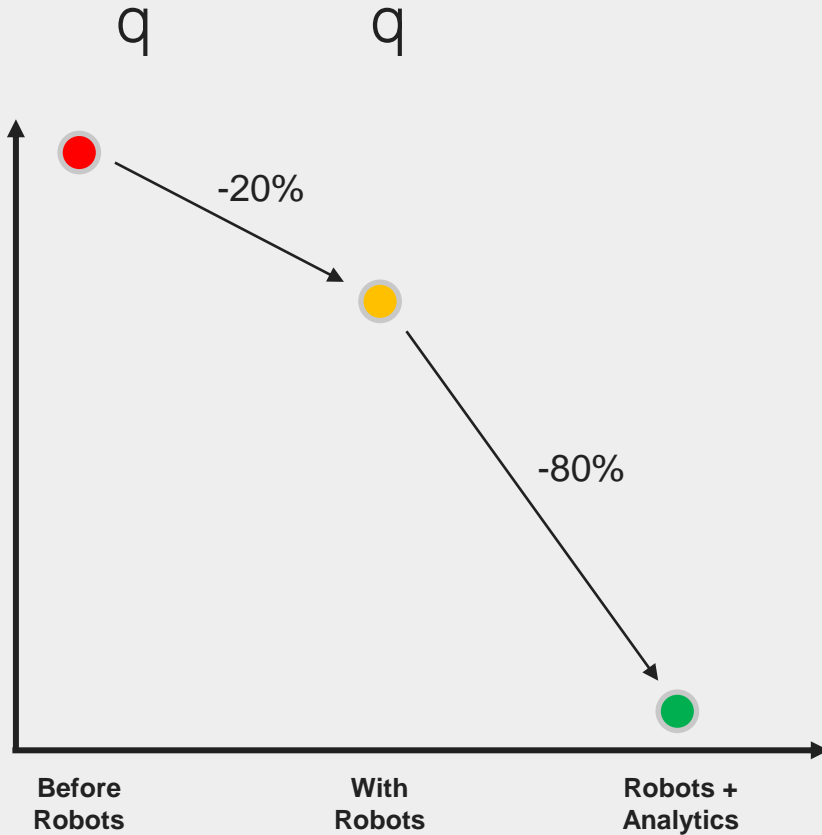
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Top-performer across multiple O&M cost efficiency measures^(1,2)



(1) Source: Company annual filings, 2022 FERC Form 1; Data as of YE 2022 unless otherwise noted; Reflects total electric O&M net of power production O&M; Figures reflect utility operations unless otherwise noted; Electric customer counts sourced from 2022 company 10-K
(2) UTILITY constituents included in comparison: AEE, AEP, AES (US), CNP, D, DTE, ED, EIX, ES, ETR, EXC, FE, NEE, PEG, PNM, SO, WEC, XEL





Key Takeaways:

1. Inspections – snapshot in time only
2. Corrosion & Erosion are not linear
3. Different wear patterns in different areas

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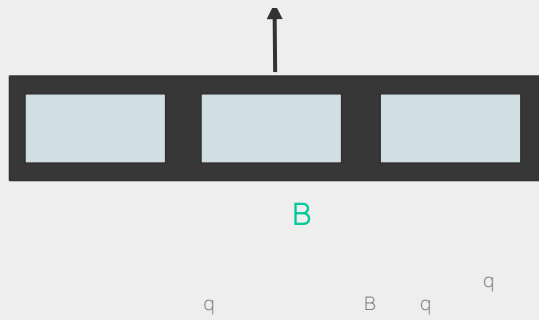
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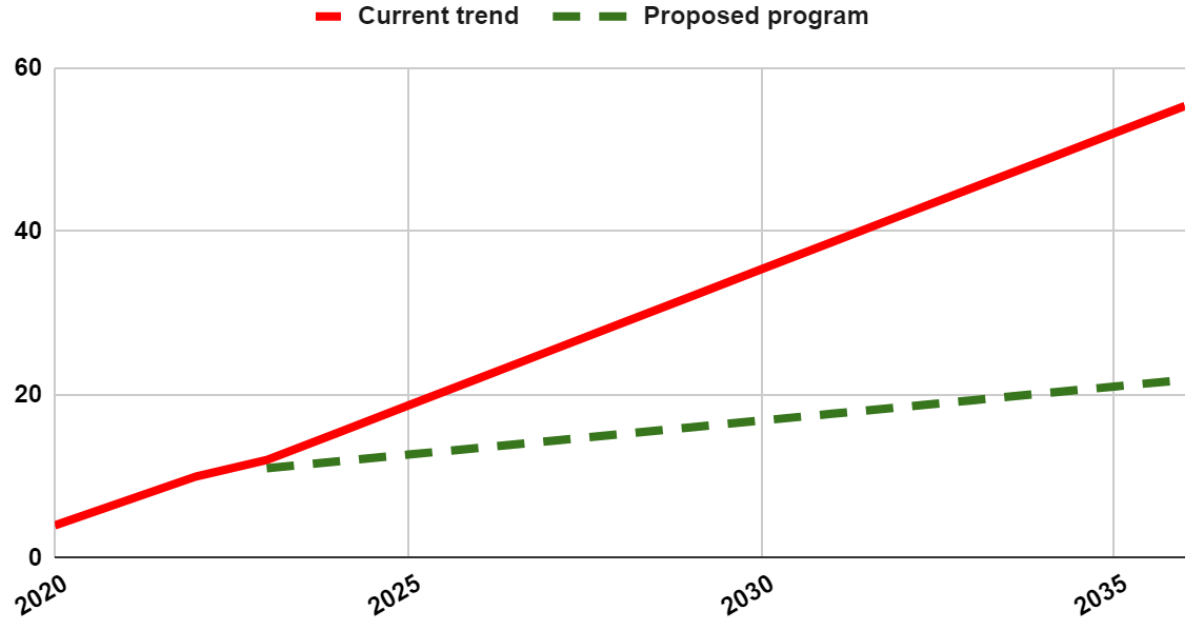
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Estimated Forced Outages in Combustion Chamber Not Behind Refractory



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2 weeks onsite before inspection

Within 48 hours of inspection (or less)



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2

Inspection

3

4

5

Your SMEs

Your Repair Records

Gecko Analytics

Deliver Precision Plan

Record

“Where do you have problems?”

“Where have you done repairs?”

Where are the actual problem areas?

Precision maintenance plan that can be executed immediately

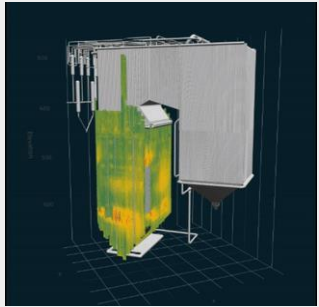
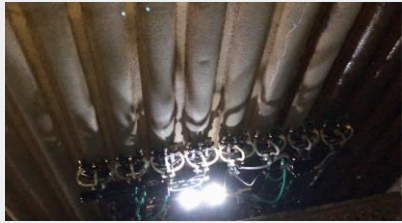
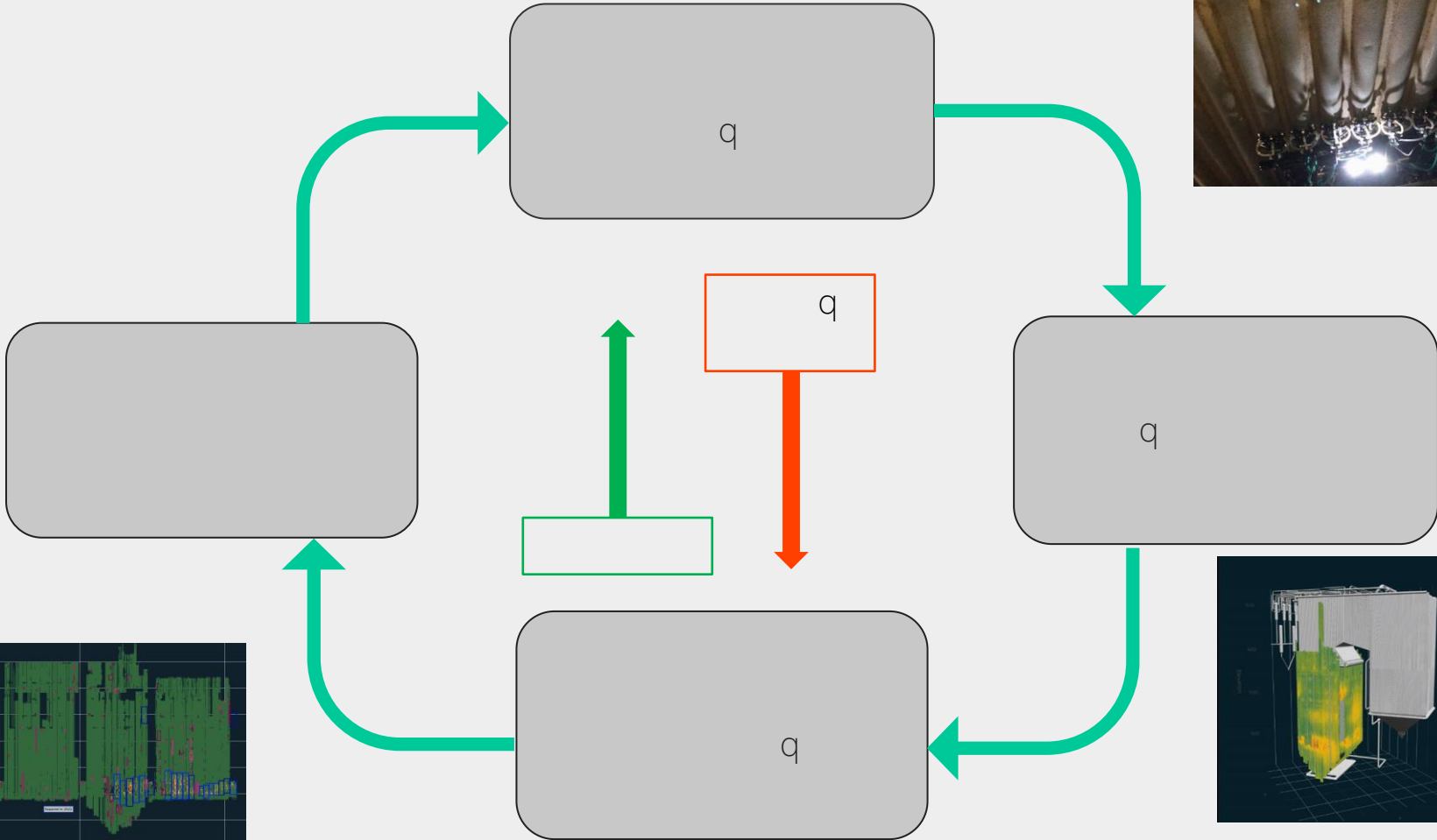
Store and maintain all maintenance and health record in cantilever

“Where would you do repairs?”

“Where have you applied coatings, overlay, and replaced panels?”

Based on our 1,000+ other boiler inspections, where will future failures occur?

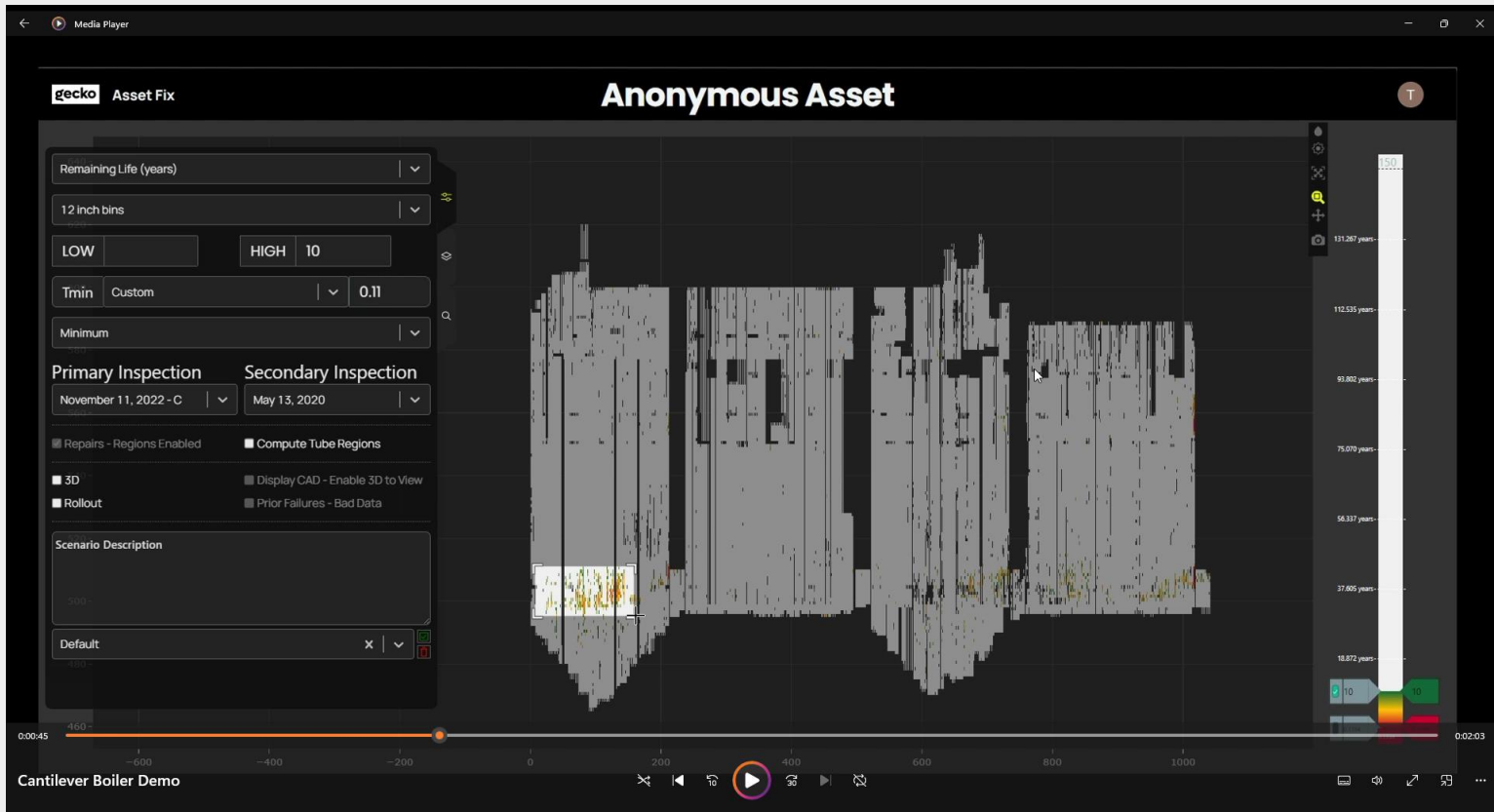
What is the immediate repair plan to ensure there are zero tube leaks before next outage?



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Cantilever Boiler Demo

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Inspection Results

View

Thickness (inches)

MIN: MAX:

Bin Size Bin Value

3 inch bins Minimum

T-Min Method

By Shell Course

Comparison Points

Primary Inspection Secondary Inspection

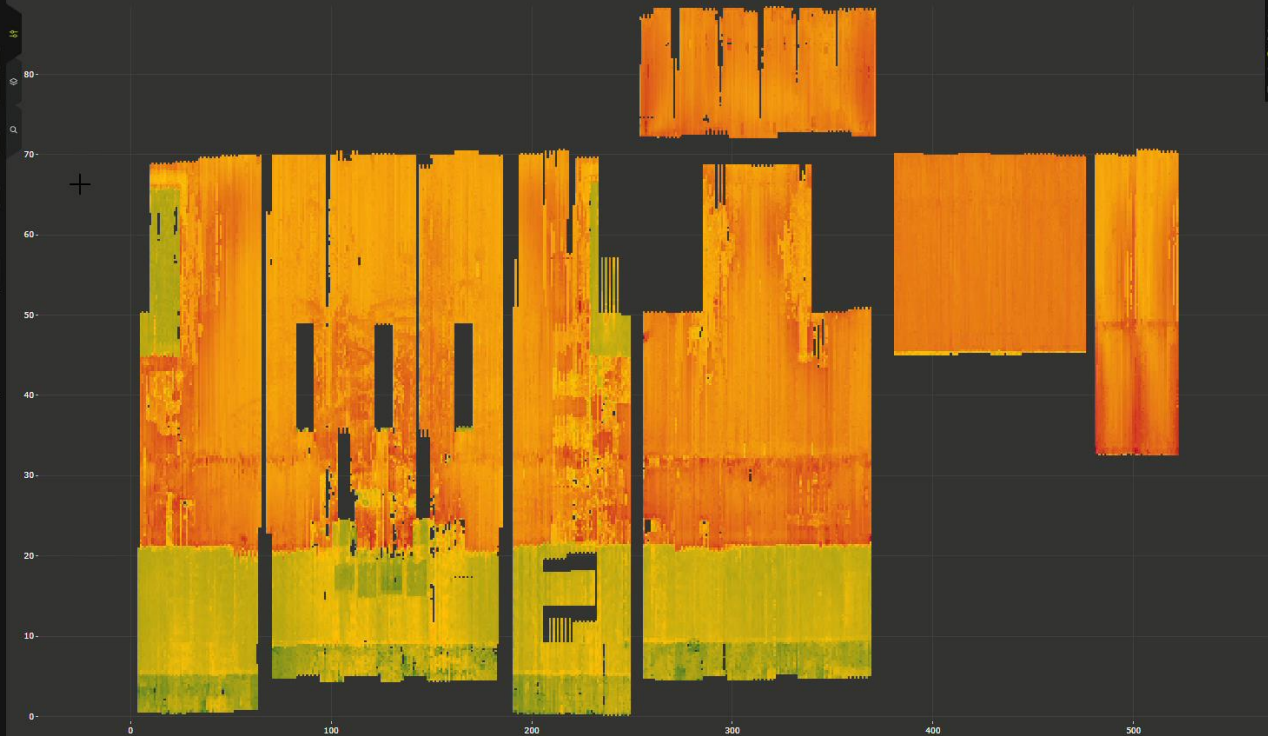
September 18... Disabled

3D 2D

Display CAD Rollout

Buck Stays Prior Failures

Repairs



0.142 inches

0.138 inches

0.134 inches

0.130 inches

0.126 inches

0.122 inches

0.118 inches

0.114 inches

0.110 inches

0.106 inches

0.102 inches

0.098 inches

0.094 inches

0.090 inches

0.086 inches

0.082 inches

0.078 inches

0.074 inches

0.070 inches

0.066 inches

0.062 inches

0.058 inches

0.054 inches

0.050 inches

0.046 inches

0.042 inches

0.038 inches

0.034 inches

0.030 inches

0.026 inches

0.022 inches

0.018 inches

0.014 inches

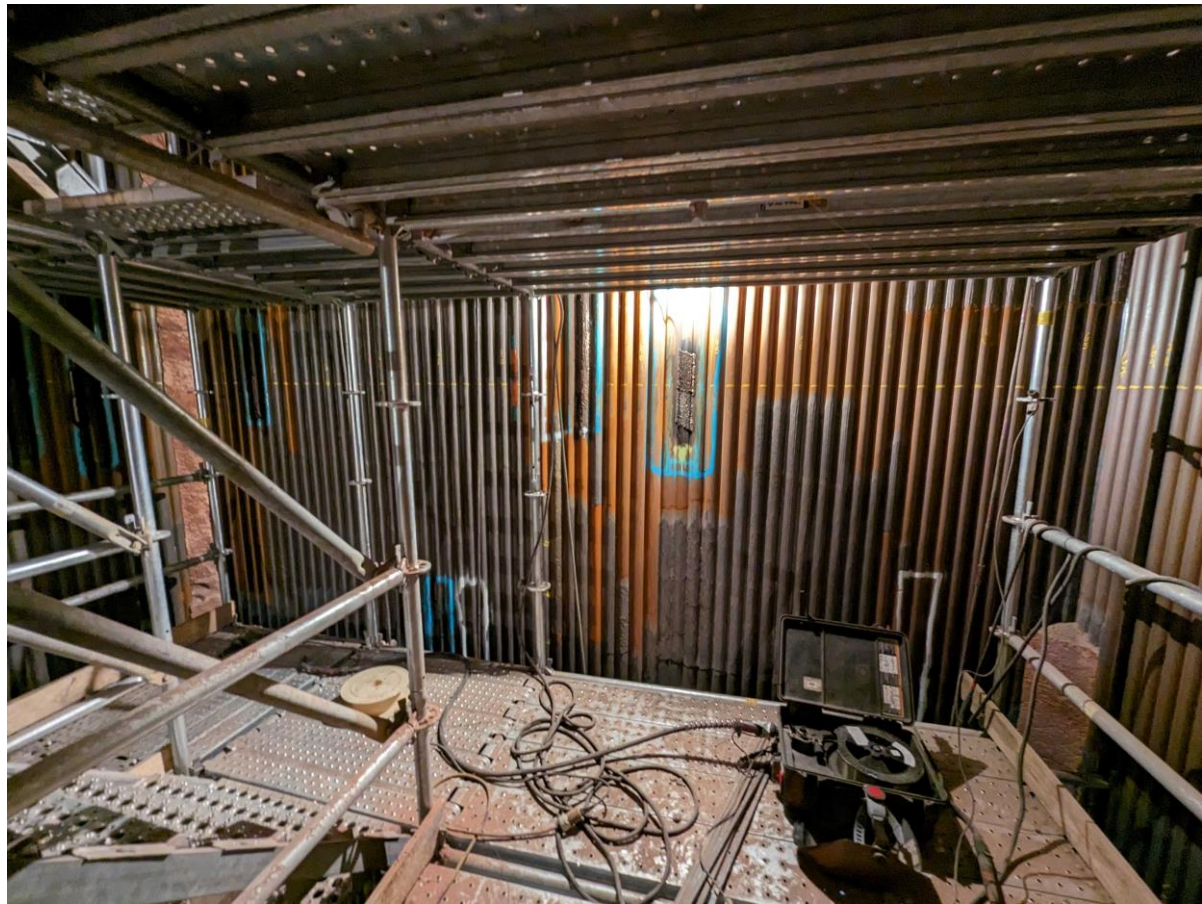
0.010 inches

0.006 inches

0.002 inches

0.000 inches

Delete Save



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