

# The Actuarial Function of a Tank

CFO Cheat Sheet: Five plays to create margin from integrity data

## THE CORE EQUATION

$$\text{Annualized Risk (\$/yr)} = \text{Probability of Failure} \times \text{Financial Consequence}$$

API 581 — Five categories: Component Damage + Affected Area + Production Loss + Injury + Environmental

## FIVE PLAYS THAT CREATE MARGIN

### 01 PRICE MAINTENANCE DEBT

Express deferred maintenance as accruing \$/yr liability. Report quarterly. Compounds at ~18%/yr. Spot repair \$15-30K → Plate \$80-150K → Floor \$500K-2M → Failure \$5-50M+. Emergency costs 3-5x preventive (Deloitte). Not on balance sheet under GAAP — but it's real.

### 02 EXTEND LIFE THROUGH ENGINEERING

API 579 FFS Level 2/3 extends remaining life 5-15 years. \$50K assessment deferring \$2M replacement = 40:1 ROI. At 4.265% Treasury, highest-ROI capital decision available. Equipment with <1 yr at Level 1 showed 6 years at Level 2.

### 03 RISK-WEIGHT INSPECTION TIMING

API 580 §12.7: RBI as lifecycle cost optimization. \$45K inspection → \$129K/yr risk reduction = positive ROI. 1% of equipment drives 90% of risk. Pinnacle case: 1,500% ROI, \$7M savings, \$40K/tank at one refinery.

### 04 TRADE CONTANGO WITH INTEGRITY DATA

Verified condition enables premium lease commitments. Tank Tiger Tier 1 breakeven: \$6.50-7/bbl spread. Crisis rates 3-5x normal. The operator who knows condition can price optionality competitors can't.

### 05 ALIGN DEPRECIATION WITH REALITY

Australia AASB INT 1030: condition-based depreciation since 2005. IAS 16: annual useful life review. Fully depreciated tank earning \$432K/yr = invisible asset. SEC filings show 10-70 year useful lives — management discretion, not engineering reality.

## THE STANDARDS TRANSLATION CHAIN



## KEY NUMBERS — MARCH 2026

Brent crude <b>\$97-126/bbl</b>	10Y Treasury <b>4.265%</b>	Fed rate <b>3.50-3.75%</b>	Hormuz supply loss <b>10M+ bbl/day</b>
Crisis lease rate <b>\$1.20/bbl/mo</b>	Normal lease rate <b>\$0.30/bbl/mo</b>	100K bbl inventory <b>\$12.6M at risk</b>	Corrosion cost (global) <b>\$2.5T/yr (NACE)</b>