

Risk Based Inspection - RBI

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Engineers view of risk management



What is RBI?

API RP580:

“A risk assessment and management process that is focused on loss of containment of pressurised equipment in processing facilities, due to material deterioration. These risks are managed primarily through equipment inspection.”

Integrity / Risk Balance



RBI

Asset Management

- **reactive**

- » High risk, out of control, failure based

- **Passive**

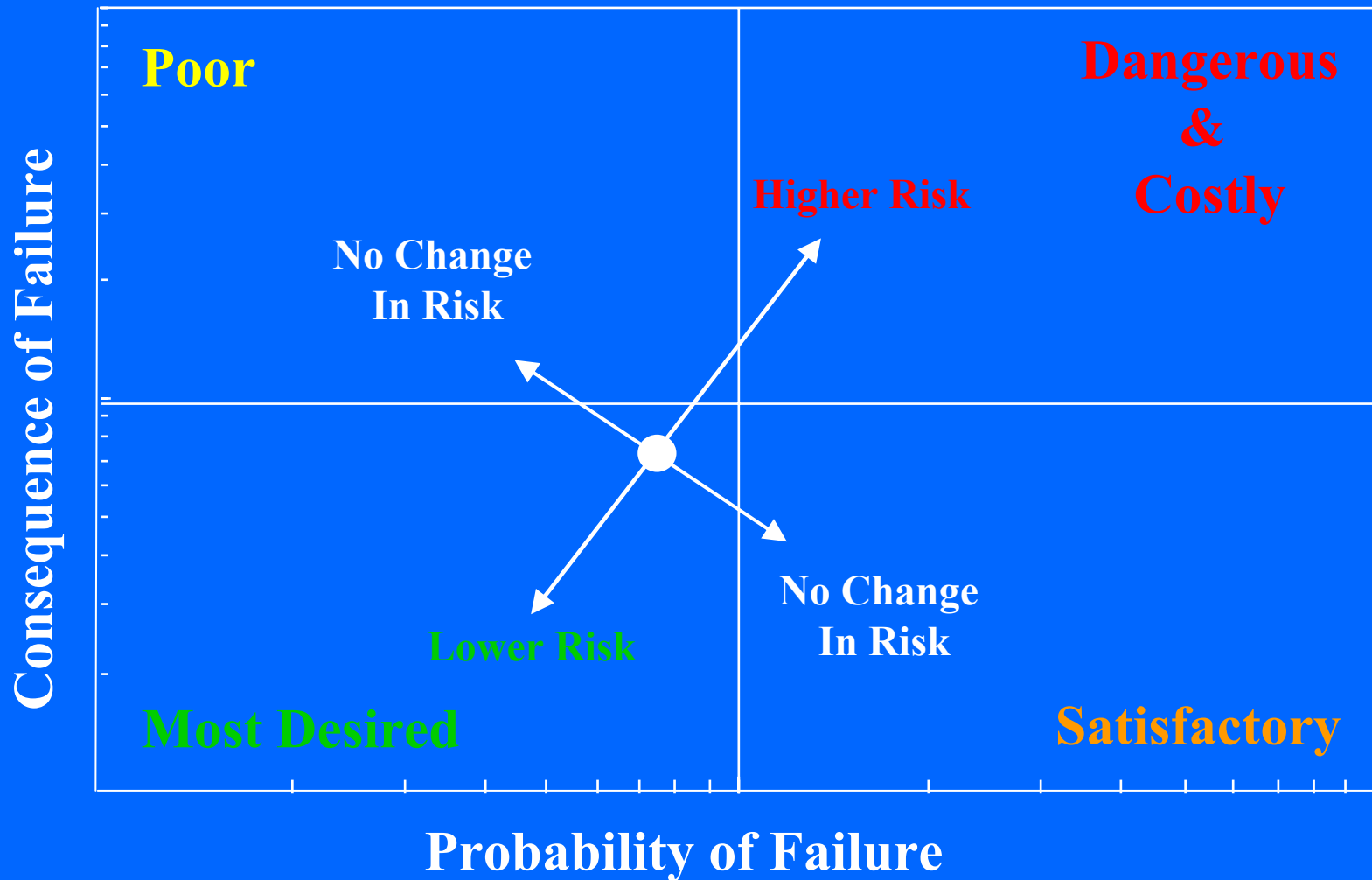
- » conservative, in control, calendar based

- **Proactive**

- » Risk based

- » Threats identified and mitigated, optimised inspection, cost effective.

Typical Risk Matrix / Risk Movement



Generic RBI Steps

Development

- Develop asset list
 - » Data collection
- Identify all active & potential deterioration mechanisms
 - » normal & upset conditions
- Assess probability of failure
 - » for each deterioration mechanism
- Consequences of failure
- Risk level and mitigation actions

Generic RBI Steps

Ongoing Program

- **Inspection & monitoring activity**
 - » implement programs to mitigate risks eg visual, ndt
- **Reassessment – Continuous Improvement**
 - » revise inspection frequencies
 - » repair or upgrade
 - » Replace

Key Factors

- Training and qualifications
 - » Maintain competencies
- Documentation & record keeping
 - » auditing

Benefits

- Cross-discipline participation & ownership
- Improved communication on risks across organisation
- Adopt predictive rather than reactive asset management approach => less stress to all !!
- Use risk assessment to prioritise & optimise effort
- Potential to reduce inspection costs & risk