CCS Risk Based Inspection Service



CHINA CLASSIFICATION SOCIETY
中国船级社

Overview of RBI Technology

RBI - Risk Based Inspection

Risk Based Inspection (RBI) is an optimal maintenance business process used to examine equipment such as pressure vessels, heat exchangers and pipings in offshore installations and industrial plants. It examines the Health, Safety and Environment (HSE) and business risk of 'active' and 'potential' Damage Mechanisms (DMs) to assess and rank failure probability and consequence. This ranking is used to optimize inspection intervals based on site-acceptable risk levels and operating limits, while mitigating risks as appropriate.



Application of RBI Technology

Where should be inspected?

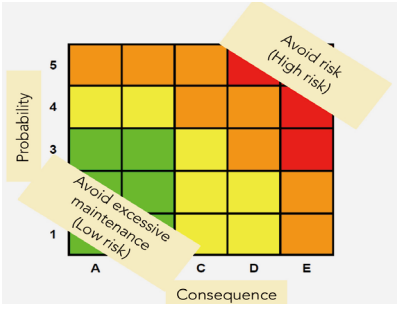
Firstly, RBI will identify the potential mechanism of corrosion according to the design and operation conditions of the device as well as refer to the historical inspection data. Then RBI can determine and optimize the inspection area in advance according to the identification of the corrosion mechanism.

How to inspect?

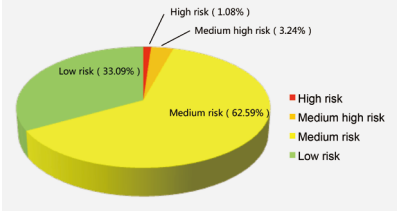
According to the understanding of the corrosion mechanism, RBI can recommend suitable inspection methods.

When to inspect?

Through the information obtained in the previous two steps, RBI can provide an inspection plan that can comprehensively consider the requirements of user downtime plan and the acceptance of the risk criteria.



Risk	Total	percent %
High	3	1.08
Medium high	9	3.24
Medium	174	62.59
Low	97	33.09
Total	278	100.00

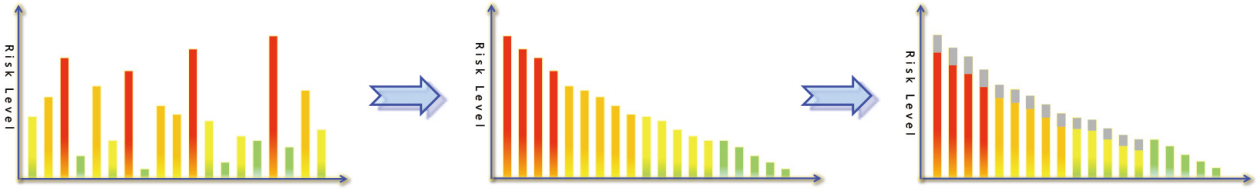


Advantages of RBI Technology

- Identify the possible vulnerable area in offshore devices
- Improve the inspection efficiency to increase the reliability of devices
- Increase the safety of device by reducing the unplanned pause of operation
- Help customers get enough information (such as inspection and maintenance costs/effects) to make personalized decisions

Avoid disastrous damage

Extend overhaul cycle



No ranking risk　　RBI- risk ranking　　RBI-reduce risk

Risk Based Software Evaluation System For Offshore Oil And Gas Processing Unit

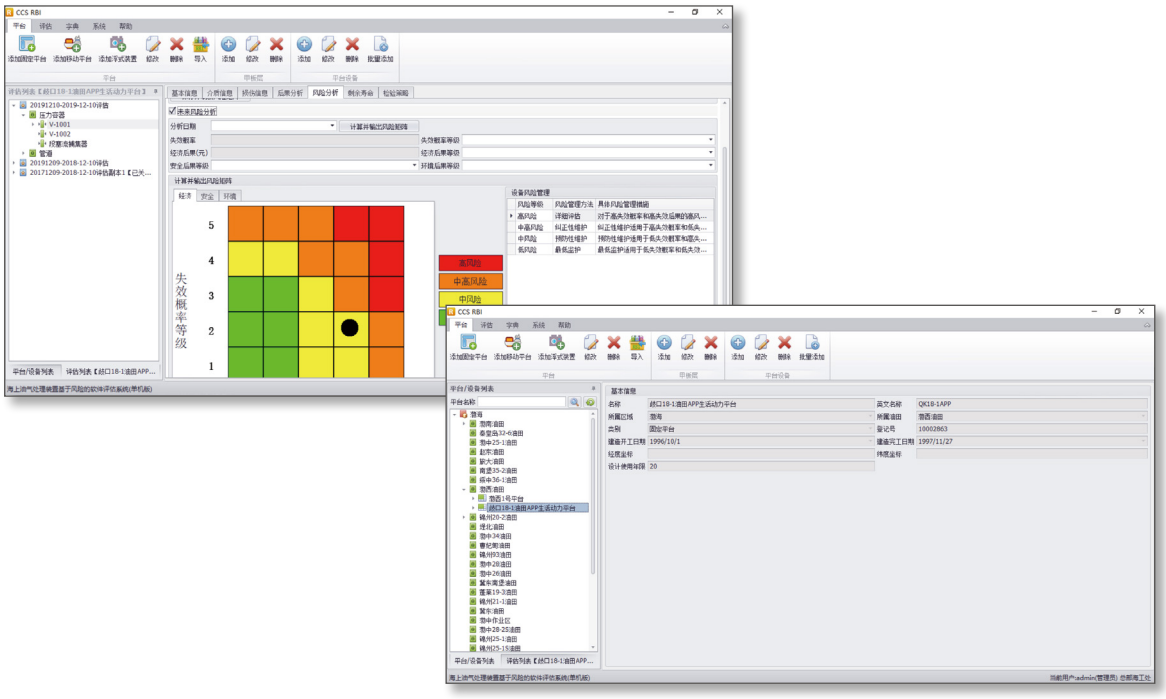
Introduction

China Classification Society independently developed the evaluation software system.



Function

- Establish complete digital database system;
- Support the risk analysis for the “pressure vessel, pressure pipeline” with the highest risk of offshore oil and gas installation;
- Realized remote data collection and input;
- Support multiple risk matrix presentations;
- Locate the next inspection date accurately;
- Make scientific and reasonable survey strategy, satisfy the refined and targeted inspection requirements.





The performance

- RBI evaluation of pressure vessel for FPSO115 in Xijiang Oilfield;
- Review of safety for transformation in Chengbei Oilfield;
- RBI assessment and review of pressure vessel for FPSO Cao Feidian ;
- Review of prolonging design service life for Qikou 17-3 and Qikou 18-1



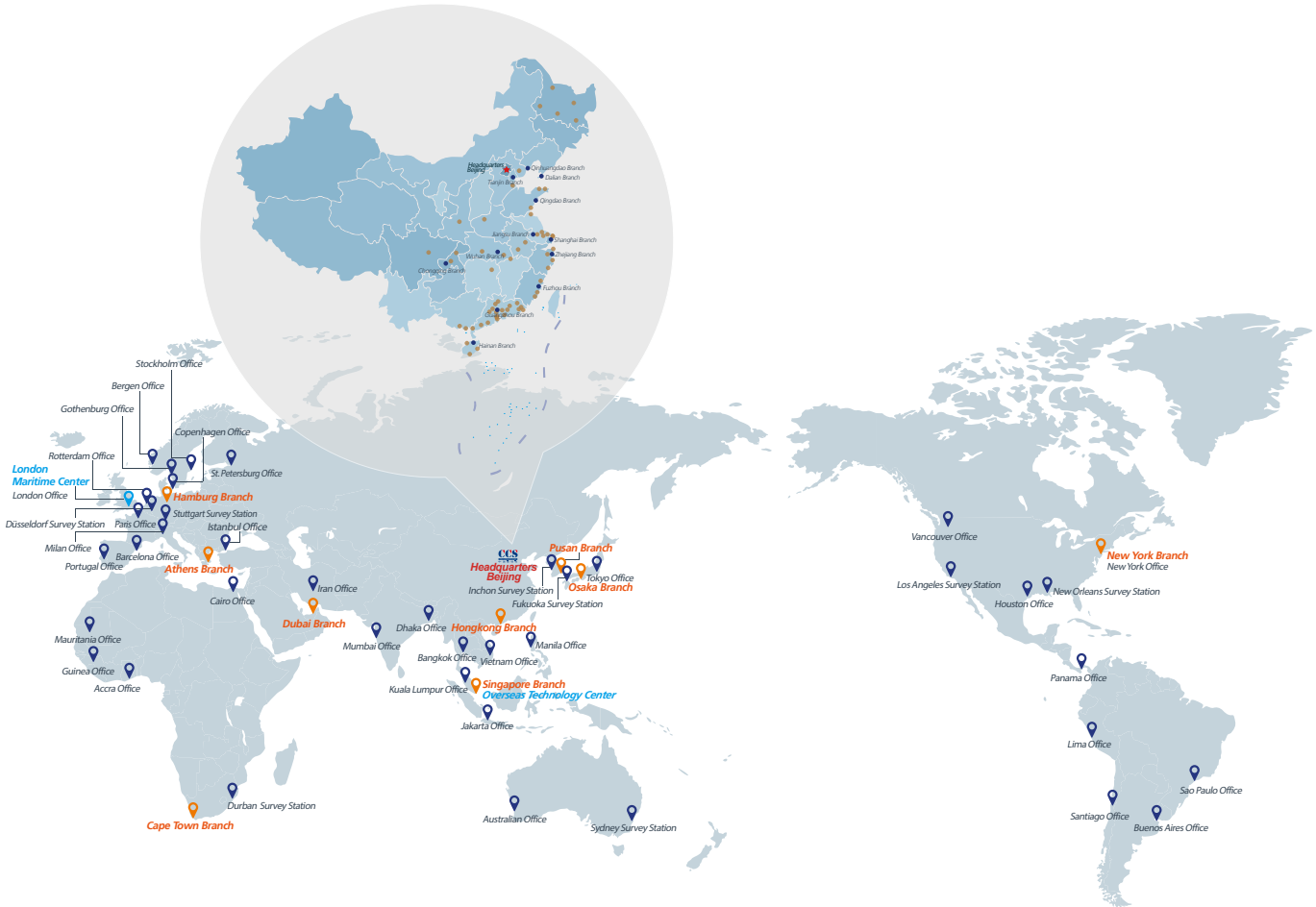




This brochure has been printed on environmentally friendly paper.

Contact us

To meet the demand of our customers, we have set up branches and offices in major port cities in China as well as in Asia, Europe, America, Middle East, Australia and many other countries or regions worldwide, forming a global survey network.



Offshore Engineering Management Department, CCS

Address: CCS Mansion, 9 Dongzhimen Nan Da Jie, Beijing 100007, China

Post code: 100007

Phone: 0086-10-58112288

Fax: 0086-10-58112875

E-mail: oe@ccs.org.cn

www.ccs.org.cn

APR, 2022