

Life Extension Services

Life Cycle Services



ABS GROUP OVERVIEW

The challenges of the competitive landscape require companies to find ways to maximize the return from their assets. Our lifetime extension services* evaluate the critical operational risks of process equipment and marine assets in their current condition and the feasibility of extending their service lives. These evaluations help our clients prioritize their asset integrity management efforts and allocate resources more effectively.

Our lifetime extension program:

1. Evaluates the current condition of the asset
2. Analyzes the fatigue and strength characteristics of the structure and equipment
3. Plans the necessary modifications and repairs
4. Develops a risk-based inspection plan to monitor critical functions and structures
5. Provides a data collection platform to monitor asset integrity

*Whether you have a newbuild project, major modification or conversion, we can help you **manage risk, maintain safety and optimize asset integrity and performance.** **Contact us today** to discuss how we can help support your offshore project.*

* Classification-related services provided by ABS.



LIFE EXTENSION CRITERIA



01

Baseline
Review

02

Engineering
Analysis

LIFE EXTENSION CRITERIA

- Require life extension before an asset exceeds its original design life
- Evaluate the condition of the asset and verify its adequacy for the extended service
- Take appropriate actions to achieve the life extension

01

Baseline Review

- Compile available operating, maintenance and repair documentation
- Identify any noted fatigue fractures, suspect locations and equipment failures in the documentation
- Determine any specific areas of interest

02

Engineering Analysis

- Screen fatigue and strength sensitive regions
- Identify fatigue life for most sensitive end connections
- Compare analysis results with observed damage from the baseline review and condition survey
- Target observed fatigue-prone areas for remediation
- Evaluate the remaining fatigue lives in excess of planned service life
- Use the results to refine the inspection plan

03

Condition Survey

- Closely inspect fatigue sensitive areas and any suspect areas with substantial or excessive corrosion
- Conduct non-destructive examination and ultrasonic thickness measurements
- Identify asset issues related to long-term reliability and associated mean time between failures



04 Remaining Life Assessment

- Assess current condition of asset
- Identify areas requiring repairs or upgrading to meet desired service life
- Identify asset issues related to long-term reliability and associated mean time between failures
- Define solutions for structural modifications to fatigue-prone locations and equipment upgrades
- Assess life extension requirements for the asset

CLASS ASSESSMENT METHODOLOGY

- Review baseline information, engineering analyses and current condition
- Reassess hull structures, topside structures, mooring systems and marine and industrial systems and equipment, under as-is condition
- Determine areas requiring repair, modification, enhanced inspection and monitoring

05 Upgrade Plan

- Develop a general plan using results of prior tasks
- Identify locations where repairs or other remedial actions should be implemented to meet design fatigue lives required for proposed service
- Identify design changes and modifications as necessary
- Develop detailed upgrade plan
- Estimate cost of upgrade

06 Risk-Based Inspection Plan

- Conduct hazard identification and assessment
- Apply consequence modeling techniques and related assumptions
- Apply risk assessment techniques and risk evaluation criteria
- Develop inspection plan based upon risk analysis



CLASS APPROACH FOR UPGRADES AND REPAIRS

- Verify the extent of repair and modification necessary for continued service
- Assess the upgrade and inspection plan required to achieve the extended life
- Establish the survey requirement

07 Risk-Based Inspection

- Perform inspections defined in inspection plan
- Perform inspection data review/evaluation
- Identify any needed corrective actions
- Develop and implement corrective action plan

CLASS SURVEY

- Customized in-service inspection plan based on reassessment
- Conduct class survey in accordance with in-service inspection plan
- In-service inspection plan for future periodic surveys

08 Results Evaluation

- Collect all inspection and repair data
- Assist in evaluating effectiveness of inspection programs on an ongoing basis and prepare to react to potential problems
- Revise inspection plan if necessary



Courtesy of Petrobras / Geraldo Falcao

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www.eagle.org

REGIONS

Americas • Asia Pacific • Australia •
Europe • Middle East • Africa

Email: offshore@abs-group.com

www.abs-group.com

