

MARINE AND OFFSHORE

# LIFE EXTENSION SERVICES

In today's competitive landscape, companies are challenged with finding ways to maximize the return from their assets. Lifetime extension services from ABS Group 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.

Whether you have a newbuild project, major modification or conversion, we can help you manage risk, maintain safety and optimize asset integrity and performance.

## OUR LIFETIME EXTENSION PROGRAM

- Evaluates the current condition of the asset
- Analyzes the fatigue and strength characteristics of the structure and equipment
- Plans the necessary modifications and repairs for restoring its fit-for-service capability
- Develops a risk-based inspection plan to monitor critical functions and structures
- Provides a data collection platform to monitor asset integrity

## 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
- Apply mitigations to achieve the life extension

## Baseline Review

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

## 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

## Condition Survey

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

## Remaining Life Assessment

- Assess current condition of asset
- Identify areas requiring repairs or upgrading to meet desired service life
- Define solutions for structural modifications to fatigue-prone locations and equipment upgrades
- Assess life extension requirements for the asset

## 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

## 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

## Inspection 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 as necessary

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## ABOUT ABS GROUP

ABS Group of Companies, Inc. ([www.abs-group.com](http://www.abs-group.com)), through its operating subsidiaries, provides data-driven risk and reliability solutions and technical services that help clients confirm the safety, integrity, quality and environmental efficiency of critical assets and operations. Headquartered in Spring, Texas, ABS Group operates with more than 1,000 professionals in over 20 countries serving the marine and offshore, oil, gas and chemical, government and industrial sectors. ABS Group is a subsidiary of ABS ([www.eagle.org](http://www.eagle.org)), one of the world's leading marine and offshore classification societies.

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