

WIDELY RECOGNIZED NEED FOR A JOINT INDUSTRY PROJECT (JIP)

The OCC, IADC and PESA identified the need for a new JIP to investigate the reliability of BOP Equipment. It has been several years since any analysis has been conducted; most importantly, there have been no analysis conducted on the latest generation rigs.

With an understanding of downtime causes, BOPE and control systems reliability can be increased, therefore decreasing downtime and saving rig owners and operators millions of dollars annually while maintaining excellent safety environmental performance.

The Problem:

BOPE Variable Reliability

- Operating costs have tripled
- Many stack configurations exceed minimum requirements
 - more redundancy
- Blind Shear Rams Implemented (surface)

The Solution:

- Execute an industry funded JIP
- Utilize expert third party consulting companies.

JIP Consultants

The Development Committee has awarded the JIP management to WEST Engineering Services. WEST will enlist the help of The Athens Group, whose expertise in statistical analysis complements WEST's BOP equipment and systems technical leadership. The union of these two entities ensures that the JIP will have the industry's leading engineering and consulting experts maximizing the expectation of practical, usable recommendations.

WEST Engineering Services

*Improve Safety and Operations Through
Surveys, Experience and Knowledge*

Rig Surveys

Drilling Systems
Well Control Equipment
DP and Power Management
Marine Safety
Dropped Object
WESTScope Boroscope Inspections

WEST Tech Services

Service technicians for major OEM drilling equipment, including: well control integrated hardware and software expertise in top drives and pipe handling systems.

Engineering Consulting Work

Risk Assessments

Project Management

WEST ENGINEERING
 **SERVICES**

ATHENS 
GROUP

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WEST ENGINEERING
 **SERVICES**

BOP
Equipment Reliability
Joint Industry Project
At A Glance

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LEADERSHIP TEAM

Name	Organization	Company Affiliation
Sandra Fury	OOO	Chevron
William Hauser	MMS	MMS
Tim Sampson	API	API
Alan Spackman	IADC	IADC
Allen Verret	OOO	OOO

JIP DEVELOPMENT COMMITTEE

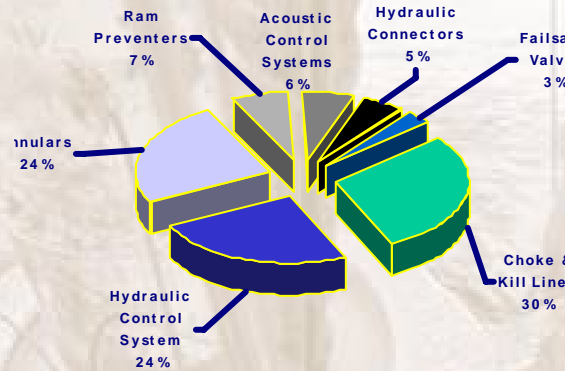
Name	Organization	Company Affiliation
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Craig Castille	OOO	ENI
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David McWhorter	PESA	Cameron
Mark Franklin	OOO	BP
Frank Gallander	API	Chevron
Gary Leach	IADC	Transocean
Kirk Malstrom	MMS	MMS
Michael Saucier	MMS	MMS
David Thomas	PESA	Halliburton

CONSULTANT TEAM

Name	Organization	Company Affiliation
Per Holand	Database	EXPROSOFT

Projected Benefits

1. Identify common downtime areas.
Why are availability rates different between rigs?



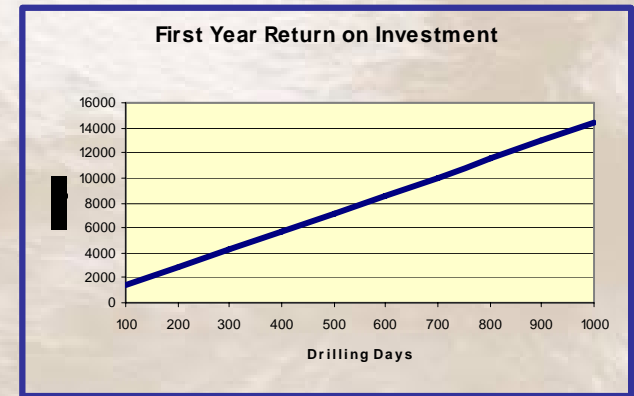
Where Does Downtime Occur?
SINTEF Study, Norwegian Data, 1991

2. Identify recommendations to maintain or improve reliability across GOM fleet
3. Improve BOP pressure testing methods by utilizing the best available technology
 - BOP Digital Test Methodology Benefit (Savings = 4.8 hrs per BOP Test)
4. Extend BOP test frequency while maintaining or improving safety and/or environmental performance
5. Provide Recommendations to Current:
 - CFR Code on BOP Testing for Drilling
 - API Standards and Recommended Practices

JIP Participants

Anadarko	API *	ATP
BP*	Cameron	Chevron*
Diamond*	ENI *	Hess
Marathon*	MMS	Murphy
Nexen*	Petrobras	Pride
Seadrill*	Shell	Transocean

*participant on the JIP Steering Committee



The ROI percentage in relation to drilling days is demonstrated in the following graph.
All calculations are based on full participation.

Estimated Savings

With extended BOP testing frequency and improved BOP pressure testing methods, the estimated savings is \$193 million/yr.

Based on:

- 36 DW MODU's in GOM at end of 2007
 - \$376 k/day Average Rig Rate and
 - ~\$651 k.day Average Spread Rate
- 13 Additional High Capacity Units by 2009
 - \$436 k/day Average Rig Rate and
 - ~ \$711 k/day Average Spread Rate