



CFST

Crew Familiarization and System Training



GUIDED BY OUR VISION

Foundations of our vision:

- Safety as our greatest responsibility
- Environmentally responsible
- Develop and train our people
- Modern fleet of rigs with outstanding capabilities



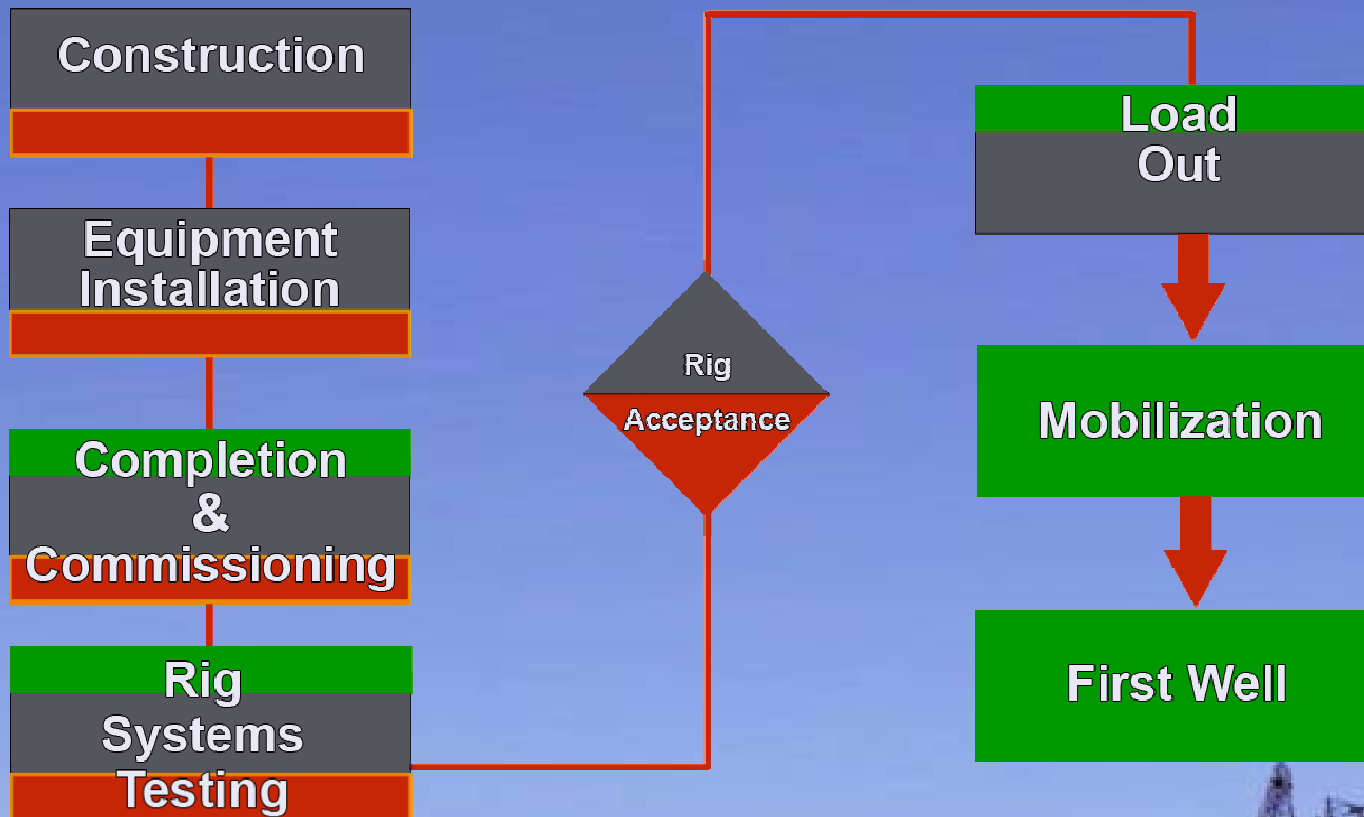
Premium Personnel Qualities

- ❖ **VALUE** integrity of people & **CONSIDER** their safety as greatest Responsibility
- ❖ **EMBRACES** **STOP** for each other to make the workplace the safest in the Industry
- ❖ **TECHNICALLY** competent in operating Industry's most modern fleet with Outstanding capabilities & investigate problem to their **ROOT CAUSE**
- ❖ **CAPABLE** of understanding and adhering to Premium Policy and systems
- ❖ **DESIRES** to continuously improve the system and reliability of the equipment / process – **COMMUNICATE** effectively

TO BE THE CONTRACTOR OF CHOICE



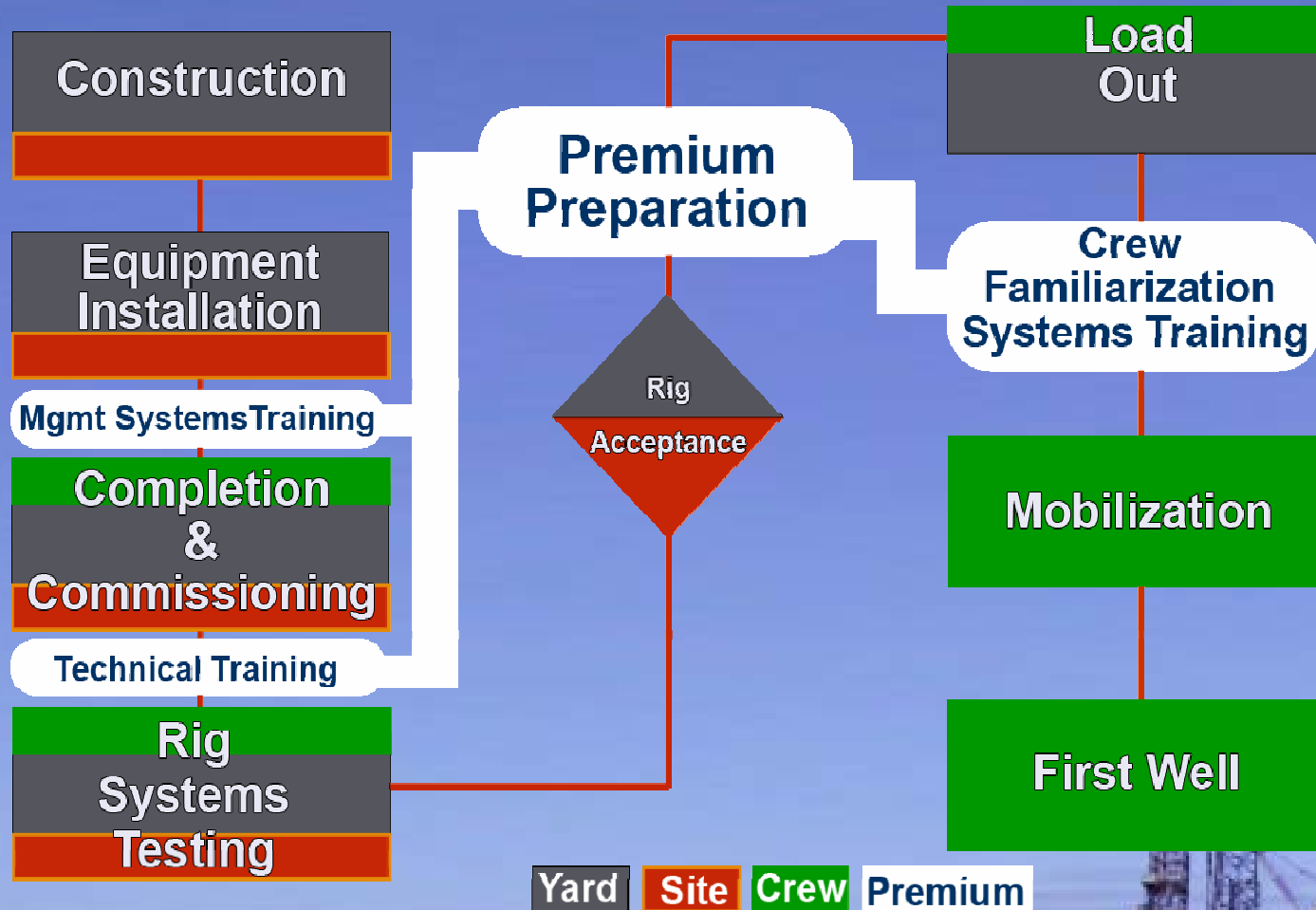
Conventional Contractor Rig Delivery



Yard Site Crew



Premium Drilling Rig Delivery



Crew Familiarization and System Training

- o **What is CFST ?**
 - Set of procedures
 - Developed for Premium Drilling by ModuSpec
 - Risk Based Prioritization approach
 - Vital Safety Systems are learnt prior to operational systems
 - Systems consists of Management Systems as well as Drilling Systems.



CFST Typical Procedure



PREMIUM DRILLING
WILCRAFT



| | | | |
|----------------------------------|---|----------------|-----------------|
| Description: | Annular BOP - Crew Familiarization & System Training | | |
| File Code: | JOB# US1426.4 | SFI Code: | 331 |
| Manufacturer: | Cameron | Type: | 18 ¾" Type DL |
| Date: | | Serial No.: | |
| WORK SCOPE METHOD | | | |
| Resources: | <p>Premium Personnel Required Premium Assistant Rig Manager (Team Leader) Premium Driller Premium Assistant Driller Premium Derrickman Premium Rig Floor Crew</p> <p>Third Party Personnel Required ModuSpec Engineer (observing as required) No operator or third party resources required.</p> <p>Tools & Materials Required Operating & Maintenance Manual Hand held radios as required Flashlights and Hand tools as required (specify if required) BOP Control Fluid Thread Lubricant - Fel-Pro paste #670 or Select-A-Torq paste #503 Grease Molybdenum Disulphide General Purpose Grease Shell Alvania EP 2 Torque wrench</p> | | |
| Time involved: | Two hours (approximately) | | |
| Location: | This trial may be conducted at dockside or at an anchorage location. | | |
| Sign Off and Verification | | Premium | ModuSpec |
| 1.0 | Safe Performance of these Trials. | | |
| 1.1 | This trial is to be conducted in a safe and timely manner. Refer to the Premium Drilling Operations and HSE Policies for specific guidance on the safe execution of this trials procedure. | | |
| 1.2 | <p>JSA Review Review all applicable Premium Drilling JSA's, including any specific JSA for this particular operation. If necessary, create a JSA specifically for this operation before starting the procedure.</p> | | |



Crew Familiarization and System Training

o Why CFST ?

- A Structured approach designed to ensure that all personnel become familiar with the critical aspects of their own rig, from the start.
- To achieve:
 - Crew Familiarization
 - Management System Training
 - Safe and efficient operations



Crew Familiarization and System Training

o Who does CFST ?

– Rig Crew performs CFST:

- Crew Familiarization
- Management System Training
- Safe and efficient operations

– Witnessed and Signed by Moduspec when CFST is carried out on the rig.



Crew Familiarization and System Training



Drill Floor Procedures being carried out during
WilCraft CFST



Management System Training



Management System Training prior to Start up :

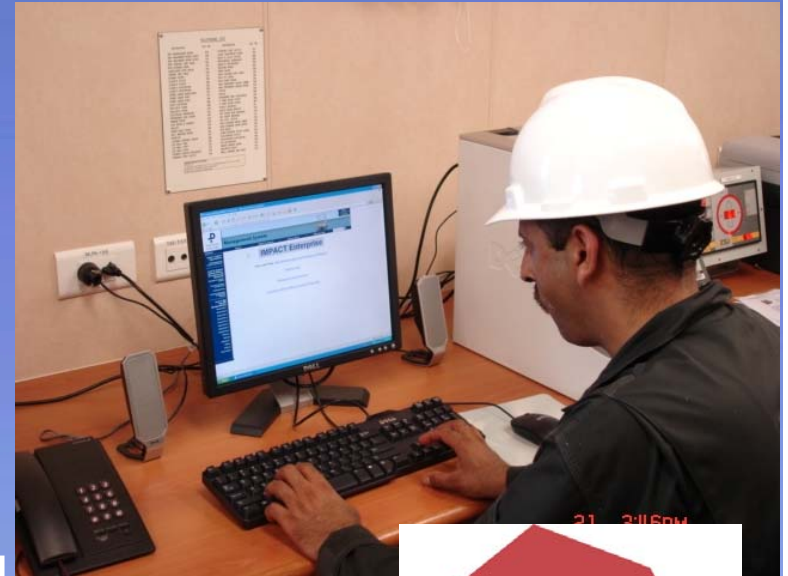
- Behavioral based safety and awareness conducted in house in Singapore. (STOP)
- Premium Drilling in house Safety and Leadership training completed onshore with practical sessions.
- North Sea lifting training conducted onshore with practical sessions held in a facility which simulates onboard rig activity.
- Regulatory body training organized and conducted locally using various training providers.



Rig Focused Management System Implementation

Management System Implementation Offshore:

- IMPACT system is live on rigs
- Intranet is live on the rigs
- Permit to work system in place
- HSE Case for *WilCraft* in place
- Crew inductions for new arrivals
- STOP Program implemented
- On-board rigging and lifting training
- Rig based emergency response exercises
- AMOS system implemented for Procurement and Maintenance



CFST Procedure Sign Off

| | | | |
|---|---|---|------|
| 7.23 | Check any ventilation fans fitted to the cabinets. Also check the ventilation panels and any filter elements therein. | ✓ | RB |
| 7.24 | Check that all lamps, switches and gauges on each electrical cabinet are functional. | ✓ | RB |
| 7.25 | Examine all power cables entering and exiting from the switchboards and MCC's. Ensure that the cables are adequately supported. | ✓ | RB |
| 7.26 | Check for cables which have been stressed by being led through too tight a bend radius. | ✓ | RB |
| 7.27 | Operate every circuit breaker, especially the bus ties. | ✓ | RB |
| 7.28 | Examine the Ground Fault Detection Systems on each electrical cabinet. Ensure that the arrangements are functional. | ✓ | RB |
| 7.29 | Operate the Ground Fault Detection System on each electrical cabinet and test for earth leakage. | ✓ | RB |
| GENERAL INTERNAL SWITCHBOARD & MCC INSPECTION | | | |
| | WARNING: High levels of electrical energy are present inside this equipment. Only qualified personnel are to take part in this activity. All PDC safety precautions for working with high tension electricity shall be implemented and fully complied with during the execution of this work. No person shall ever work inside a high tension cabinet alone. At least one other qualified, experienced person shall be in attendance at all times. The second person shall not take part in the inspection work, their role is to act as a safety number for the inspector, in the event of an incident occurring. | ✓ | RB |
| 7.30 | Chief Electrician and Rig Electrician conduct an internal inspection of all main and auxiliary power system switchboards and MCC cabinets. | ✓ | RB |
| 7.31 | Check for completed internal installation of the switchboard or MCC. | ✓ | RB |
| 7.32 | Check the cabinet doors are earthed to the main frame, especially where the door contains lights, switches or meters | ✓ | RB |
| 7.33 | Check for correct termination of each cable inside the switchboard. | ✓ | RB |
| 7.34 | Check that cables do not rest against live busbars. | ✓ | RB |
| 7.35 | Check that cables do not rest against rubbing points which could work through the outer insulating sheaths with time. | ✓ | RB |
| 7.36 | Check any cabinet door alarms for proper actuation. | ✓ | RB |
| 7.37 | Check for any accumulation of dust or dirt. | ✓ | RB |
| 7.38 | Check for tools or shipyard debris inside. | ✓ | RB |
| 7.39 | Check the busbars for signs of discoloring, warping or twisting. | ✓ | RB |
| 7.40 | Check for signs of any loose connections. | ✓ | RB |
| 7.41 | Check for signs of tracking (carbonization) over any insulators. | ✓ | RB |
| 7.42 | Withdraw every main circuit breaker (where possible). Inspect the unit for mechanical soundness of all fixings & fastenings. Also check for any signs of wear. | ✓ | RB * |
| 7.43 | Examine the main and auxiliary contacts of each breaker. Also examine the rear connectors. | ✓ | RB * |
| FUNCTIONAL OPERATION OF MAIN SWITCHBOARD & MCC's | | | |
| 7.44 | Confirm the functional operation of the Main Switchboard and the Motor Control Centers during the execution of the Main Generator Start / Run trials | ✓ | RB |



CFST Record and Improvement

CFST 871 EMERGENCY SHUTDOWN SYSTEM

Attachment One

These procedures were carried out the week of February 5 two the 10th 2007 by Frank Cates John Gale Richard Pryor and René Benjamin ModuSpec

Attachment Two

Line 7.3 should be 7.1 line 7.1 should be 7.2 line 7.2 should be 7.3

7.11 Singapore Port Authority should be changed to regulating authority

Change chief engineer to Barge engineer throughout this document

**It is only necessary to start a sufficient number of engines to carry the load
It is only necessary to start the emergency generator once on each battery bank**

Remove 7.109, 7.115





Crew Familiarization and System Training

- Total of Five (5) Volumes) – 50 to 55 procedures
 - Volume 1 – Electrical / Mechanical
 - Volume 2 – Marine Operations
 - Volume 3 – Drilling Operations – Drill Floor
 - Volume 4 – Drilling Operations – Well Control
 - Volume 5 – Drilling Operations – Drilling Fluid Systems



CFST Completion Log

Premium Drilling - Rig-WILCRAFT - Crew Familiarization & Systems Training

Index of Training Procedures Completed

| Book | SFI Code | Procedure | CFST started | % C0mplete | Complete |
|---|----------|--|--------------|-------------|-----------|
| Volume 1 Electrical/Mechanical | 361 | Favco Pedestal Cranes X 3 | 11-Feb-07 | 100% x 3 | 11-Feb-07 |
| | 601 | Main Engine Start / Run | 10-Feb-07 | 100% | 10-Feb-07 |
| | 665 | Emergency Generator Start / Run | 10-Feb-07 | 100% | 10-Feb-07 |
| | 831 | Hydraulic Power Unit | 10-Feb-07 | 100% | 10-Feb-07 |
| | 867 | AC Drives | 14-Feb-07 | 100% | 16-Feb-07 |
| | 871 | Main Switchboard | 14-Feb-07 | 100% | 16-Feb-07 |
| | 872 | Emergency Switchboard | 14-Feb-07 | 100% | 16-Feb-07 |
| Volume 2 Marine Operations | 321 | Dry Bulk Material Storage & Transfer | 10-Feb-07 | 100% | 10-Feb-07 |
| | 366 | Handle Transfer Hoses (to boat or dockside) | 17-Feb-07 | 100% | 17-Feb-07 |
| | 361 | Knuckle Boom Crane | 9-Feb-07 | 100% | 9-Feb-07 |
| | 420 | Navigational Equipment | 14-Feb-07 | 100% | 15-Feb-07 |
| | 410 | Communications Equipment | 14-Feb-07 | 100% | 15-Feb-07 |
| | 432 | Anchor Winches | 14-Feb-07 | 100% | 14-Feb-07 |
| | 437 | Handle Tow Bridle | 11-Feb-07 | 100% | 11-Feb-07 |
| | 488 | Jacking System | 11-Feb-07 | Crew/100% | 11-Feb-07 |
| | 489 | Skid Cantilever, Traverse Skid the Rig Package | | Crew/50% | 2-Feb-07 |
| | 501 | Lifeboat & Davit Handling (Emergency Drill) | 13-Feb-07 | Crew & Modu | 13-Feb-07 |
| | 811 | Fire & Gas Detection & Equipment | 17-Feb-07 | 100% | 17-Feb-07 |
| | 811 | Fire & Gas Alarm Drill | 17-Feb-07 | 100% | 17-Feb-07 |
| | 811 | Emergency Drill | 17-Feb-07 | 100% | 17-Feb-07 |

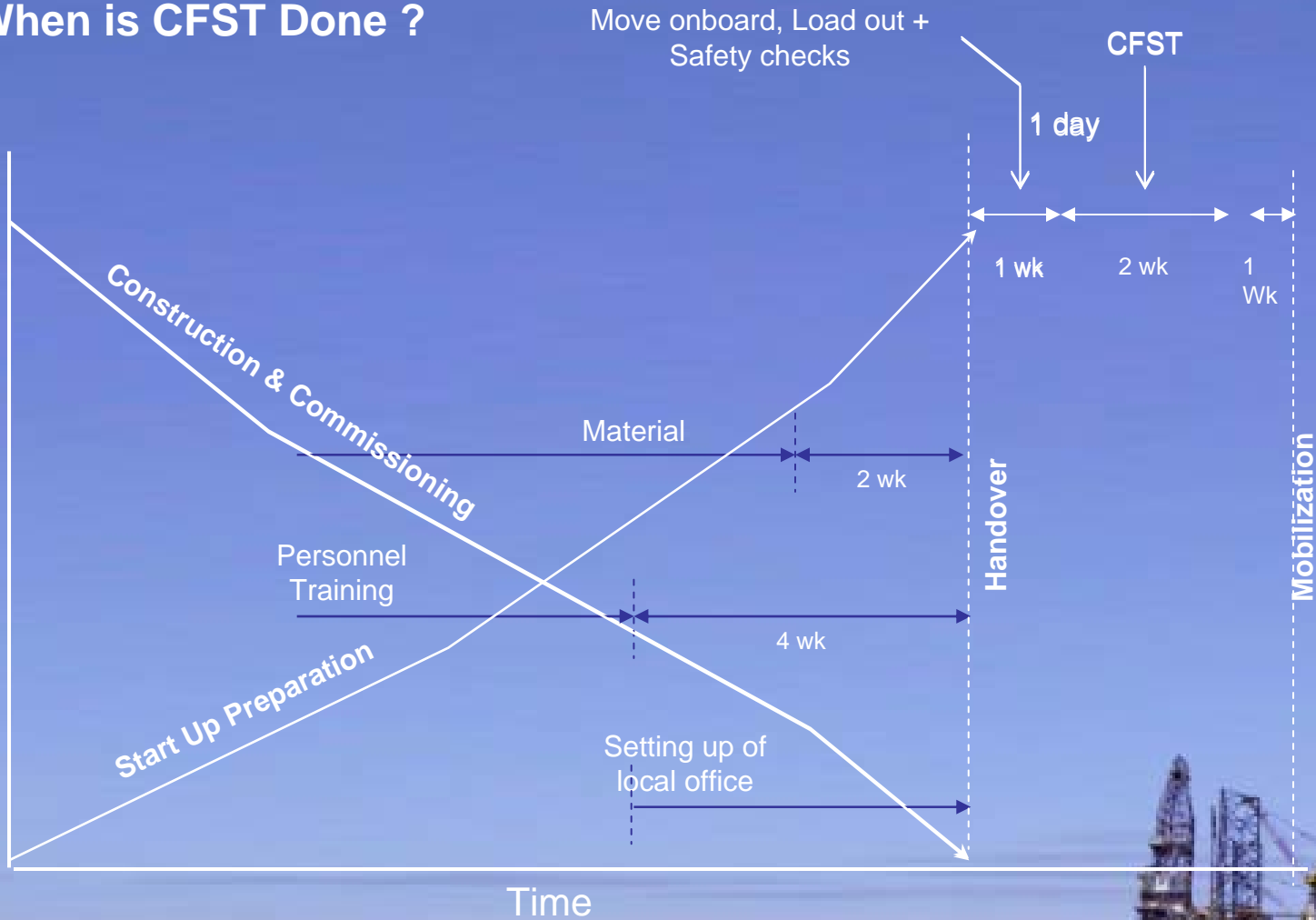
Crew Familiarization and System Training

- o **CFST is not about re-commissioning the rig**
 - Rig Commissioning takes place prior to handover
 - Rig Commissioning is witnessed by Project Site team, ABS & Shipyard.
 - Rig is CDS classed



Crew Familiarization and System Training

- When is CFST Done ?



GOAL 07



Continuous Improvement Process



START UP IMPROVEMENT

DD 2 = 62 days DD 1 = 59 days WCR = 76 days

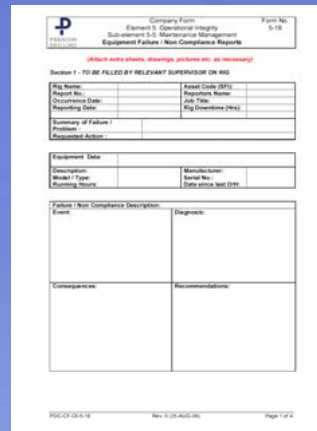


Review & Analysis

Communication

Feedback

Meetings



Equipment Failure / Non-Compliance Report

Section 1 - TO BE FILLED BY RELEVANT SUPERVISOR ON RIG

| | |
|------------------|-----------------------|
| Rig Name: | Asset Code (RIG): |
| Report No.: | Report Name: |
| Occurrence Date: | Job Title: |
| Reporting Date: | Rig Discipline (W/C): |

Summary of Failure / Problem:
Proposed Action:

Equipment Data:

| | |
|----------------|----------------------|
| Description: | Manufacturer: |
| Model / Type: | Serial No.: |
| Running Hours: | Date since last O/M: |

Failure / Non-Compliance Description:

| | |
|---------------|------------------|
| Event: | Signature: |
| Consequences: | Recommendations: |

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Combined Action Items

