

Sara Sae	SARA SAE ENGINEERING SPECIFICATION		
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PROCEDURE FOR RECERTIFICATION /UPGRADATION OF BOP CONTROLS

Rev	Reason of Change	Date	Made By	Reviewed By	Approved By	Status
0		20-10-2011	SKV	J Gulati	KKD	Released



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PROCEDURE FOR RECERTIFICATION /UPGRADATION OF BOP CONTROLS

1.0 PURPOSE

1.1 To describe the methods to be employed , the personnel responsible for verifying, controlling, documenting and processing recertification / up gradation of BOP Controls and Diverter Control System to verify :

- a) The specific functions are operationally ready
- b) The pressure integrity of the installed equipment
- c) Compatibility of the system

2.0 SCOPE

2.1 This procedure applies to periodic recertification / up gradation or modification of all customers supplied BOP/ Diverter Control systems functional on BOP Stacks or those need to be upgraded to meet API Standards.

3.0 Frequency of Recertification

3.1 SARA recommends recertification of BOP Controls at least once in three years.

4.0 RESPONSIBILITIES

4.1 Maintenance and testing shall be performed or supervised by the competent person(s)

5.0 TYPES OF TESTS

5.1 General

5.1.1 Test program will incorporate visual inspection, function and pressure tests, maintenance practices.

5.1.1.1 Visual Inspection should be performed to verify:

- A. The actual equipment matches design and operates as originally designed.
- B. Complies to API 16D Specs
- C. Any up gradation or modification conducted after delivery have not compromised the design or operation.
- D. Modifications done if any are documented and reviewed for compliance.



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- E. Serialization of traceability of components to the OEM data book.
- F. Any modification found out of compliance will require removal of modification and to be restored to its original configuration.

5.1.2 : Pressure Tests

5.1.2.1 BOP Controls and their sub- assemblies shall be pressure tested as per SARA

Procedure Nos:

- A. BOP Controls – HQ/QC/910/096
- B. Accumulators – HQ/QC/910/094
- C. Selector Valves – HQ/QC/910 / 013
- D. Regulators -- HQ/QC/910/016
- E. Air pump -- HQ/QC/910/090
- F. Check Valves – HQ/QC/910/001
- G. Relief Valve 3300 PSI – HQ/QC/910/ 002
- H. Relief Valve 5500 PSI – HQ/QC/910/095

5.1.3 Pressure Test Frequency :

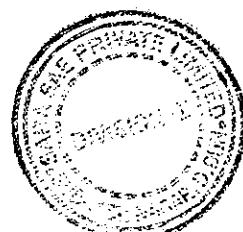
BOP Controls when fitted on the well control equipment shall be conducted:

- A. Upon Installation
- B. After the disconnection or repair of any pressure regulating valve(s) / regulators / pump systems
- C. In accordance with Table -1 at least once in six months

Table-1

Component to be tested	Low Pressure Test psi	High Pressure Test psi
Manifold and BOP Lines	N/A	3000 psi
Accumulator Pressure	Verify Precharge	N/A
Close time	Function Test as per SARA Procedure	N/A
Pump Capability		
Control Stations		

Note – The low & high pressure tests shall be stabilized for at least 5 minutes with no visible leaks



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5.1.4 Measuring Devices

- 5.1.4.1 The calibration status and expiry date of all the test Pressure Gauges and chart recorders or data acquisition systems used must be verified.
- 5.1.4.2 Pressure Gauges shall be calibrated to 1% full scale accuracy and used to not less than 25% or more than 75% of the full pressure span of the Gauge.
- 5.1.4.3 Electronic Pressure Gauges and Chart recorders or data acquisition systems shall be utilized within the manufacturer's specified range.
- 5.1.4.4 Pressure measurement devices shall be recalibrated annually.

5.1.5 Test Documentation:

Results of all pressure and function tests shall be documented.

5.1.6 General Testing Considerations:

- 5.1.6.1 All personnel shall be alerted when pressure test operations are to be conducted.
- 5.1.6.2 Only designated personnel shall enter the test area to inspect for leaks
- 5.1.6.3 Tightening, repair or any other work shall be done only after Depressurization of the system.
- 5.1.6.4 All lines and connections that are used while testing shall be adequately secured.
- 5.1.6.5 Verification test of the remote control panels shall include a simulated loss of primary power to the control unit and to the control panel(s).

5.2 Inspections

5.2.1 Periodic Maintenance

- 5.2.1.1 Periodic Maintenance shall address inspection (internal/external, Visual, dimensional, NDE) and pressure integrity testing.
- 5.2.1.2 Inspection shall be performed every 90 days in accordance with relevant SARA procedures and check lists.



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5.2.3 Inspection for Repair or up gradation

- 5.2.3.1 BOP Controls and its sub assemblies when repaired or upgraded shall be inspected in accordance with SARA procedures detailed at 5.1.2.1
- 5.2.3.2 Replacement assemblies shall be designed for their intended use by SARA SAE.
- 5.2.3.3 If replacement assemblies are acquired from other than SARA the assemblies shall meet or exceed the original SARA Spec and shall be fully tested as per SARA procedure and shall be supported by traceable documentation in accordance with SARA procedure SDP- 31-006.
- 5.2.3.4. For repair /up gradation of controls of OEMs other than Sara full details of the BOP Stack including make, size, pressure rating, primary secondary pumping system, PRVs & complete assessment report will be intimated to Engg Sara for seeking necessary guidance to proceed with repair/up gradation task.

5.2.4 Weld Repairs

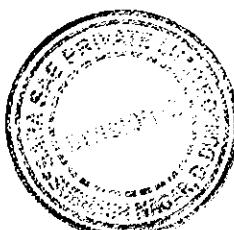
All welding shall be performed in accordance with SARA approved weld procedures (WPS & PQR)

5.2.5 Records and Documentation

- 5.2.5.1 Equipment owner shall be responsible to maintain records along with the supplied product for a period of not less than three years.
- 5.2.5.2 A maintenance / repair / up gradation historical file shall be retained by serial number / unique identification number.
- 5.2.5.3 The maintenance and historical file shall follow the equipment when it is transferred.
- 5.2.5.4 Equipment malfunctioning or failures shall be reported in writing to the repair facility / SARA.

6.0 REFERENCES

- 6.1 SDP-27-014 Control of Quality Records
- 6.2 SDP-31-006 Identification and Traceability
- 6.3 SDP-24-002 Preservation of Product



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- 6.4 SDP-27-008 & SDP-27-009 Monitoring and Measurement of Product
- 6.5 SDP-27-010 Control of Nonconforming Product
- 6.6 SARA/DOC/082 Customer Property Report
- 6.7 SSF-27-006 Nonconformance Report
- 6.8 CT137 Customer Property Tag