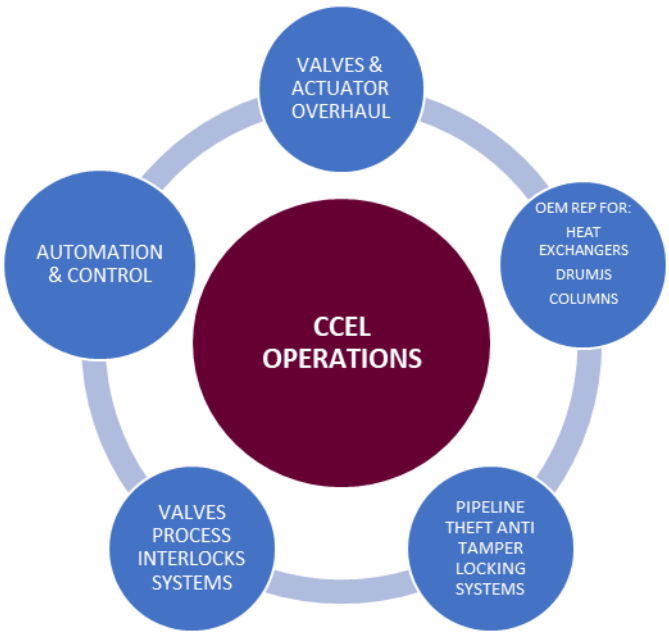
CCEL OIL & GAS SERVICES LTD



CCEL wide range of experience include working on various local and international engineering projects for small and large organizations

CCEL OIL & GAS SERVICES LTD
2 Christian Gboms Street,| off Abacha Road, Port Harcourt
www.ccelengineering.com Email: info@ccelengineering.com
+234 80365 96584

PORT HARCOURT | LAGOS | ANGOLA | UAE

OUR SERVICES

PROCESS INTERLOCKS

Process interlocking is a long used principle to guide the operator safely through an operating sequence.

Once the proper steps have been identified by User, CCEL will design and supply mechanical interlocks that can be operated by means of a linear coded key.

In your pump sequence, PSV, loading bay, pig launching & receiving etc Valves are mostly part of the operating sequence. CCEL have several standard or customized locking devices to lock all types and size of valves e.g. ball valve, gate valve, globe valve, needle valve, plug valve, etc…

Every safety procedure is unique; we will always provide a 'custom made' solution to guarantee a proper science operation.

INTERLOCK MAINTENANCE

CCEL OIL & GAS maintenance Services of Installed Interlocks Locking Systems scheme allow to minimize on unplanned shut down and thus increases production uptime.

TRAINING PROGRAMME

CCEL conduct comprehensive training programme to cover:

- Operational concept
- Usage of interlock processes
- Stages of implementing a process control system
- Installation & trouble shooting and corrective approach
- Binary coded key management

VALVE OPERATIONS

VALVE RECONDITIONING | **CONTROL VALVES** | **PSV CALIBRATION** | **PROCUREMENT**

Companies look for quality, flexibility, availability and cost savings to name a few. CCEL can help achieve these because we have made valve repair and valve reconditioning our specialty and have developed systems of operation, accredited to meet the highest standards required by our customers.

CCEL can repair and/or recondition the vast majority of all makes, types and sizes of industrial valves, including safety valves, using skills and accumulative experience acquired over many years

CRUDE OIL THEFT ANTI TAMPER LOCKING SYSTEM

In Nigeria, one of the major concerns are constant vandalization/illegal tampering with pipeline infrastructures/ valves, which have caused explosion, lost of life, investments, colossal loss of revenue & environmental pollution.

CCEL Oil & Gas mechanical device are specially designed for Nigeria's peculiar Oil & Gas industry, where vandalization & illegal tampering are major issues today. This solution have been proven & tested by major Oil & Gas operators.

OUR SERVICES

Inspection Services

CCEL provides both conventional and advanced non-destructive testing and inspection services to the oil and gas sector. We pride in our highly skilled professionals and top notch inspection tools.

As an eco- friendly company and knowing the consequences of avoidable facilities, pipelines and plants failures due to material degradation, we partner with our client to deploy solutions that ensures high plants and facilities uptime through technologies that guarantees data reliability for corrosion prediction. Our range of services include;

TANK BOTTOM, TOPSIDES, MANIFOLDS AND FACILITIES INSPECTIONS:

Typical solution will include single or combination of visual inspections, advanced and conventional nondestructive testing techniques like; Robotic Tank Inspection/cleaning, Phased Array Ultrasonic Inspection (PAUT), Corrosion mapping, Long and Range Ultrasonic Testing, Tubular inspection using IRS/RFT/ECP, Magnetic particle testing, Penetrant testing, Ultrasonic Testing

PIPELINES MAINTENANCE AND INSPECTION;

Pipeline cleaning, de-scaling, geometric and in line inspection (ILI) using high resolution magnetic flux leakage MFL tools for detection of pipeline wall losses, corrosion rate prediction and inspection cycles optimization.

CCEL also provides customized solutions for pipelines that cannot be inspected with conventional ILI tools. Typical challenges may include access like no pig traps installed), operating conditions (e.g. flow, pressure, temperature) as well as pipeline geometry (e.g. diameter variations, complex bend geometries etc.)

Offshore Support Vessel

We, provide Subsea Services, Topside Engineering and Marine Solutions, Engineering and Construction Services to Support Onshore / Offshore Projects and Maintenance Campaign

Manpower Services

It is part of **CCEL** specialty areas to source and provide high quality technical experts in advanced technology and engineering manpower supplies services to the Oil & Gas, Marine and Energy Industries world wide

Our objective is to provide your projects with highly unrivalled level of expertise, resources and technical personnel from both local and international locations

We can call upon a global web-enabled database of active professionals in diverse fields and potential recruits, with a wide range of personnel CV's covering multi-discipline technical and managerial positions, as well as experienced trades personnel.

Safety, Cost Optimization & Efficiency

- We deliver values to our clients

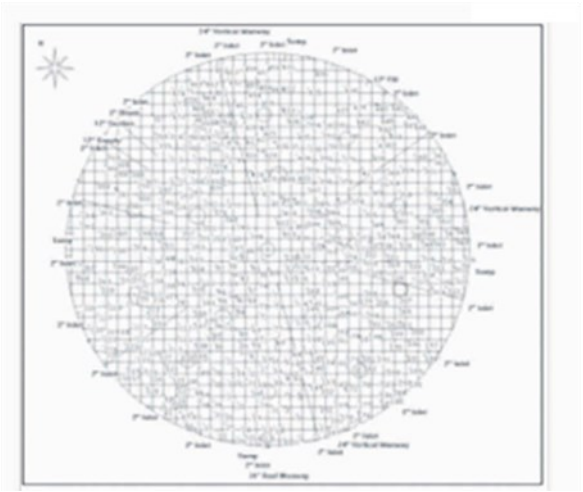
ROBOTIC TANK CLEANING & INSPECTION

We deploy robotic inspection to scna the floor of the tank while in service and provide our client with a detailed assessment of tank floor integrtity, with greater reliability and precision.

BENEFITS:

- Eliminate the high cost of tank downtime
- No material transfer
- No alternate storage needed
- Speed
- Detailed information on bottom condition
- Not affected by coating (incl. fireglass)
- Reduce costs by performing API 653 inspections while tank is in service
- Elimicate cleaning cost
- Avoid disruptions in plant operations, keeping revenue constant
- Reduce environmental risks such as spills and VOC release
- Improve safety by eliminating confined space entry and personnel exposure to hazardous chemicals
- All work is accordance with API 653 standards
- ATEX certified equipment

The Robotic Tank Inspection RTI offers high density Ultrasonic Thickness (UT) scanning of your tank floor while tank is full and in service. Using onboard UT transducers, the robot follows a predetermined digital inspection grid and collects ultrasonic scans of the tank bottom to perform computerized data analysis.



Typical Tank Bottom Inspection Report

The Robotic umbilical

What is more, we can equip our robot with cleaning systems using spray nozzles and brushes. So it can clean and inspect the tank bottom simultaneously, thereby enhancing safety and reducing cost

The API 653 Tank Inspection Report includes;

Topside and bottom side corrosion locations

Floor plate thickness and pitting

Videotape of roof underside and vapour space structures

Fiber glass coating measurement

The report provides information for prediction of future repairs and effecting planning of shut-down maintenance

Safety, Cost Optimization & Efficiency

- We deliver values to our clients

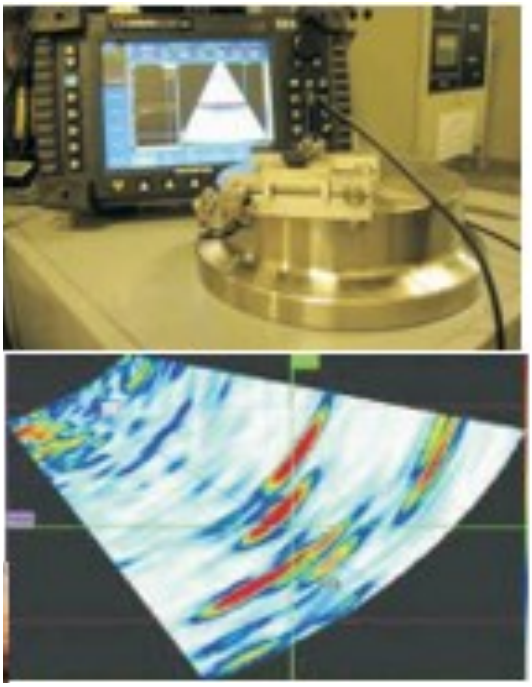
PHASED ARRAY ULTRASONIC TESTING (PAUT)

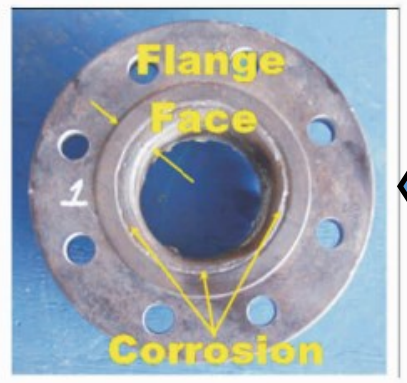
CCEL applies PAUT for non-invasive material examinations, for finding flaws in welds and assessing the quality of rivets, PAUT can also detect more complex sweepolets, cracks, voids and pits caused by corrosion. The technology can measure material and coating thickness, detect changes in material properties and inspect joints and interfaces, including adhesive mapping. The visual display of A-scan, B-Scan and C-Scan and S-Scan gives a simplified understanding of flaw type and associated dimension.

Improved portability, convenience, inspection speed & safety

BENEFITS:

- More robust and easier to use than conventional single-element probes, providing improved efficiency, capturing hundreds of signals at once, and reducing the number of false alarms.
- Provide a permanent record, doest produce radiation and can be used for several applications.
- Simplified Inspection and Interpretation: Replacement of several conventional ultrasonic probes, making complex procedures simpler and removing the need for setting up and calibrating multiple probes. This also allows for simpliefied functionality, including real-time imaging
- Data Reliability: Reducing or eliminating mechanical scanning not only improves inspection times, but also increases the reliability of the measurements by eliminating changes in or the loss of coupling, which is a risk whenever a probe is moved. This also means that phased array probes provide test results with excellent repeatability



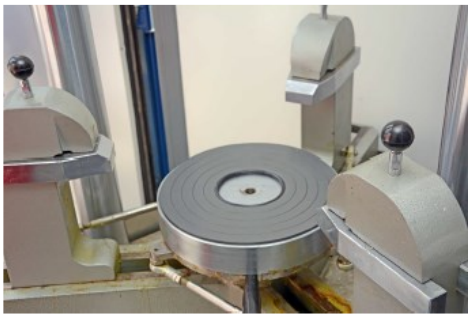


FLANGE FACE CORROSION INSPECTION

Utilizing the phased array technology allows the inspection of materials with complex geometries which could be quite challenging testing with conventional UT techniques. This opens door for the inspections that were earlier considered impossible or impractical. One of these impossible examinations is the inspection of Raised Face (RF) flanges

SOME CCEL MOBILE FACILITIES

Clamping Unit with aluminum and O-ring



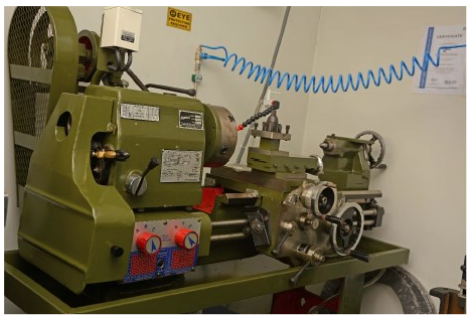
Lap Master

Clamping a Gate Valve

Digital/Pneumatic Testing Unit

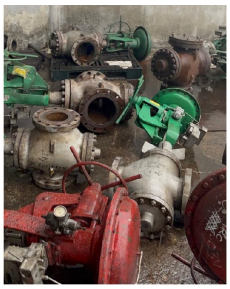
Rigging up a valve with the jig crane

LATHE MACHINE



DRILLING MACHINE

WHO WE ARE








We support all the Nigeria, Sub-Sahara and Middle-East biggest Oil & Gas both Onshore & off shore facilities. They rely on our experience and expertise in what we do best - Design, installation & commissioning, maintenance of process interlocking systems, Valve & actuator overhaul with the technical backup that is essential to maintaining process safety and constant product flow.

- WE KEEP YOUR PROCESS FLOWING

OUR CLIENTS

PONTICELLI
ارامكو السعودية Saudi Aramco
Nigeria LNG Limited
ALCON
DORMAN LONG ENGINEERING SINCE 1949
Chevron MEREN SONAM
ExxonMobil
eni saipem
TOTAL UPSTREAM
SNEPco
TOTAL AMENAM OML 99 / ODUDU
eni Naoc
SEPLAT
WESCO
NNPC WARRI REFINERY
SPDC
INDORAMA PETROCHEMICALS
TOTAL CONGO
TOTAL OFON 2 PROJECTS
NNPC PORT HARCOURT REFINERY
IKIKE PROJECT
Chevron EGTL
vtti NAVGAS
TOTAL JV
HYUNDAI HEAVY INDUSTRIES CO.,LTD.
ENTREPOSE
SBM OFFSHORE ENERGY. COMMITTED. ANGOLA
شركة تنمية نفط عمان Petroleum Development Oman

SOME SELECTED PROJECT REFERENCES

TOTAL E & P / TOTAL UPSTREAM		
1	OFON II INTERLOCKS (HHI)	INSTALLATION OF INTERLOCKS ON BOARD
2	OFON II INTERLOCKS (PONTECELI)	INSTALLATION OF INTERLOCKS
3	OML 99 AMENAM-KPONO 2012	SUPPLY OF INTERLOCK PIG TRAP SYSTEMS
4	OML 99 AMENAM-KPONO 2013	MAINTENANCE OF FAULTY INTERLOCKS ON BOARD
5	OML 99 AMENAN-KPONO 2014	INSTALLATION OF INTERLOCKING SYSTEM
6	OML 99 AMENAM-KPONO 2015	TRAINING FOR INTERLOCK SYSTEMS (OPERATIONS & TROUBLESHOOTING) - PRODUCTION & MAINTENANCE TEAM
7	OML 99 AMENAM-KPONO 2016	MAINTENANCE OF INTELOCKS
8	RUMUEKPE METERING STATION	DESIGN & INSTALLATION OF INTERLOCKING SYSTEM WITH PROXIMITY SENSORS
9	OML 99 AMENAM-KPONO 2017	2017 SHUT DOWN OPERATION (PROCESS INTERLOCKING SYSTEMS)
10	OML 58 RUMUEKPE METERING STATION	DESIGN AND SUPPLY OF PROCESS INTERLOCK WITH PROXIMITY SENSORS
11	OML58 WELLHEAD CHOKES	DESIGN, SUPPLY & INSTALLATION OF ANTI TAMPER LOCKS FOR WELLHEAD CHOKES OB119, OB12, OB120, OB123, OB124
12	OML58 GAS INJECTION LINES	DESIGN, SUPPLY & INSTALLATION OF ANTI TAMPER LOCKS FORGAS INJECTION LINES ON OB119, OB12, OB120, OB123, OB124 WELLHEADS
13	OML58 SHUT DOWN VALVES	OVERHAUL OF ACTUTORS, ESDV, CONTROL VALVES
14	OML58 VALVES	MAINTENACE & OVERHAUL OF 46 NOS 6" VALVES
15	OML58 RUMUEKPE METERING STATION	MAINTENANCE OF DOUBLE BLOCK VALVES, METERING INSTRUMENTS
CHEVRON		
16	EGTL (UNIT 50)	INSTALLATION & COMMISSIONING OF PSV INTERLOCKS
17	EGTL UNIT 72 STAGE 1	EXCRAVOS GAS TO LIQUID PSV INTERLOCK INSTALLATION
18	EGTL & SUPPLY UNIT 60 STAGE 2	EXCRAVOS GAS TO LIQUID PSV INTERLOCK INSTALLATION
19	MEREN PLATFORM	INSTALLATION OF INTERLOCKS
20	SONAM PLATFORM	INSTALLATION OF INTERLOCKS
21	GAS PLANT	SUPPLY OF INTERLOCK MATERIALS
SHELL SPDC / SHELL SNEPCO		
22	SHELL BONGA FPSO	INSTALLATION OF INTERLOCK SYSTEMS
23	GBARAN OBIE – KOC	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
24	GBARAN OBIE –ETEL015L	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
25	GBARAN OBIE – ETEL012L	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
26	GBARAN OBIE – ETEL011T	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
27	GBARAN OBIE – ETEL008T	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
28	GBARAN OBIE – ETE007S	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
29	GBARAN OBIE – ETE014T	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
30	GBARAN OBIE – ETE007L	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
31	GBARAN OBIE – ETEL003S	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
32	BUGUMA M/F	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
33	CATHRWAW III M/F	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
34	SEGO	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
35	KRAKRAMA	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
36	BUKUMA MINI M/F	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
37	NKPOKU	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
38	EBUBU	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
39	BOMU	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
40	PATRICK WATERSIDE	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
41	RUMUEKPE STATION	DESIGN & INSTALLATION OF PROCESS INTERLOCK SYSTEMS
42	FORCADOS YOKRI	HOT TAPPED VALVE ANTI TAMPER LOCKING SYSTEMS INSTALLATION
43	BONNY TERMINAL FLOW STATION	DESIGN & INSTALLATION OF PROCESS INTERLOCK SYSTEMS
44	SHELL FORCADOS YOKRI (SOUTH BANK)	DESIGN & SUPPLY OF INTERLOCK SYSTEMS

SOME SELECTED PROJECT REFERENCES

AGIP		
45	OBIAFO OBF26	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
46	OBIAFO OBF 40T	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
47	NGBEDE 21T	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
48	OSHIE 15	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
49	OSHIE 11	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
50	TAYLOR CREEK 1T	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
51	IDU 13L	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
52	IDU 7L	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
53	IDU 1T	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
54	IDU 14L	DESIGN & INSTALLATION OF SPECIAL ANTI TAMPER SYSTEMS FOR WELLHEAD
55	AGIP (ATL PROJECTS)	YEARLY MAINTENANCE CONTRACT FOR INTEGRITY CHECKS ON ATL INSTALLATION
EXXONMOBIL		
56	EXXONMOBIL APAPA TERMINAL BIG TRAP, LAGOS	PIG TRAP INTERLOCK PROCESS CONTROL
57	NNPC TERMINAL PRODUCT DISCHARGE LINE, LAGOS	PIG TRAP INTERLOCK PROCESS CONTROL
NAVGAS		
58	NAVGAS, LAGOS	MAINTENANCE OF INTERLOCK SYSTEMS
SAIPEM / SHELL / TOTAL E & P		
59	OTUMARA SAGHARA EXCRAVOS PIPIELINE	DESIGN & INSTALLATION OF PROCESS INTERLOCKING SYSTEMS
60	SSAGS PROJECT	DESIGN & INSTALLATION OF PROCESS INTERLOCKING SYSTEMS
61	SAIPEM TOTAL NOPL PROJECTS	DESIGN & INSTALLATION OF INTERLOCK PIG TRAP SYSTEMS

TOTAL E & P CONGO BRAZIVILLE POINTE-NOIRE		
62	TOTAL POINTE NOIRE	INSTALLATION OF INTERLOCK SYSTEMS
SEPLAT		
63	OBEN GAS PLANT (TRAIN 1 & 2	RE-DESIGN OF PROCESS INTERLOCKS
64	OBEN PIGGING LAUCHER & RECEIVER M/F	RE-DESIGN OF PROCESS INTERLOCKS
65	SAPELE FLOWSTATION	DESIGN OF ANTI TAMPER LOCKING MECHANISM
66	OBEN 45 & 28, SAPELE 25 WELLHEADS	DESIGN OF ANTI TAMPER LOCKING SYSTEMS FOR WELLHEAD VALVES
HHI		
67	TOTAL OFON II PROJECTS (UNITY OFFSHORE PLATFORM)	INSTALLATION OF PROCESS INTERLOCKS
WESCO / SHELL		
68	SOUTH FORCADOS YOKRI	DESIGN AND INSTQLLQTION OF PROCESS INTERLOCKS
ALCON /SHELL		
69	NORTH FORCQDOS PROJECTS	DESIGN & SUPPLY OF INTERLOCK
NAVGAS		
70	NAVGAS, LAGOS	MAINTENANCE OF INTERLOCK SYSTEMS
71	NLNG BONNY	SUPPLY OF INTERLOCK MATERIALS
72	NLNG	DESIGN OF INTERLOCK PROCESS CONTROL SEQUENCE UNIT

SOME SELECTED PROJECT REFERENCES

73	IKIKE PROJECTS (TOTAL)	DESIGN, SUPPLY AND INSTALLATION OF INTERLOCKS
74	SHELL ESTUARY	DESIGN, SUPPLY AND INSTALLATION OF INTERLOCKS
75	INDORAMA PETROCHEMICAL PLANT	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
76	AGIP OB OB GAS PLANT	DESIGN, SUPPLY AND INSTALLATION OF ATL & PROCESS INTERLOCKS
77	SHELL FORCADOS TERMINAL	DESIGN, SUPPLY AND INSTALLATION OF INTERLOCKS
78	TOTAL OML102	REPLACEMENT OF PROCESS INTERLOCKS
79	TOTAL OFON 2	REPLACEMENT OF PROCESS INTERLOCKS
80	NLNG HC CONDENSATE STABILIZATION	DESIGN, SUPPY AND INSTALLATION OF PROCESS INTERLOCKS
81	TOTAL OBIITE GAS PLANT	DESIGN, SUPPY AND INSTALLATION OF PROCESS INTERLOCKS
82	TOTAL AMENAM OML99	PROCESS INTERLOCKS MAINTENANCE
83	TOTAL NOPL PROJECT	DESIGN, SUPPY AND INSTALLATION OF PROCESS INTERLOCKS
84	TOTAL OWAZA PIG TRAP SYSTEMS	DESIGN, SUPPY AND INSTALLATION OF PROCESS INTERLOCKS
85	SAUDI ARAMCO, SAUDI ARABIA	DESIGN, INSTALLATTION & COMMISSIONING OF PROCESS INTERLOCKS
86	IKIKE PROJECT PIG RECEIVER (SAIPEM)	INSTALLATTION & COMMISSIONING OF PROCESS INTERLOCKS
87	IKIKE PROJECT LAUNCHER (OFFSHORE)	INSTALLATTION & COMMISSIONING OF PROCESS INTERLOCKS
89	OML99 INTERLOCK REPLACEMENT	INSTALLATTION & COMMISSIONING OF PROCESS INTERLOCKS
90	NAVGAS SUPPLY OF VATAC CONTROL VALVES	SUPPLY OF CONTROL VALVES (IN PROGRESS)
91	SHELL FYIP	SUPPLY & INSTALLATION OF INTERLOCKS (IN PROGRESS)

92	PETROLEUM DEVELOPMENT OMAN	INSTALLATION & COMMISSIOINING OF PROCESS INTERLOCKS
93	TOTAL IKIKE PROJECTS	INSTALLATION AND COMMISISIONING OF PROCESS INTERLOCKS
94	TOTAL RUMUJI NODE	INSTALLATION & COMMISIOINING OF PIG TRAPM INTERLOCK SYS-TEMS
95	TOTAL OML99	REPLACEMENT & INSTALLATION OF INTERLOCK SYSTEMS
96	NAVGAS - VTTI	MAINATENANCE & REPLACEMENT IOF INTERLOCK SYSTEMS
97	FUJAIRAH OIL TERMINAL, UAE	SURVEY OF INTERLOCK SYSTEMS
98	SHELL YOKRI	DESIGN & INSTALLATION OF PROCESS INTERLOCKS
99	DBN - NLNG BOIL OFF COMPRESSOR	DESIGN & INSTALLATION OF PROCESS INTERLOCKS
100	SBM ANGOLA - FPSO NGOMA	MAINTENANCE OF INTERLOCKING SYSTEMS
101	SHELL ESTUARY	MAINTENANCE OF INTERLOCKING SYSTEMS

CCEL PROJECT REFERENCES - RECENT 2023

102	Design & installation of Process Interlocks	Shell South Bank Forcados
103	Maintenance of ESDV	Total IBEWA node
104	Design & Installation of Process Interlocks	NLNG
105	Maintenance of Anti Tamper Locking Mechanism on Well-head	AGIP Ob/Ob
106	Design & installation of Anti Tamper Locking systems on critical Manifolds	Shell
107	Valve Maintenance & overhaul	NAVGAS
108	Installation & maintenance of Valve Interlocking systems	NGOMA FPSO, Angola
109	Control valve overhaul & Flange Re-surfacing quick Fix project	Warri Refineries
110	PSV recovery	Port Harcourt Refineries
111	Heat Exchangers (in collaboration with Tranter Brazil)	Chevron Agbami FPSO
112	Replacement of Drums (In collaboration with TEMA - India) *Contracting in Progress	NLNG

CCEL OIL & GAS

WE KEEP YOUR PROCESS FLOWING

CASE STUDIES / JOB INFORMATION

SAUDI ARAMCO

PDO - OMAN

TOTAL CONGO

NGOMA FPSO - ANGOLA

CASE STUDY - SAUDI ARAMCO

Saudi Aramco contacted Smithflow Control neitherland and CCEL Nigeria to support in the implementation of critical Process Control on the Oil & Gas pipeline infrastructure in Dammam, Saudi Arabia.

CUSTOMER: SAUDI ARAMCO

LOCATIONS: Shedgum Fazran & Aindar

SCOPE:

Design, Installation and commissioning of complex Process Control systems on 14 remote stations across Shedgum, Fazran and Aindar Gas & crude pipelines, with varying Process control methods & systems.

CCEL successfully completed the projects on time and within budget.

SAUDI ARAMCO
PROCESS INTERLOCKING SYSTEMS

INSTALLATION & COMMISSIONING

WE KEEP YOUR PROCESS FLOWING

MARCH - APRIL 2021

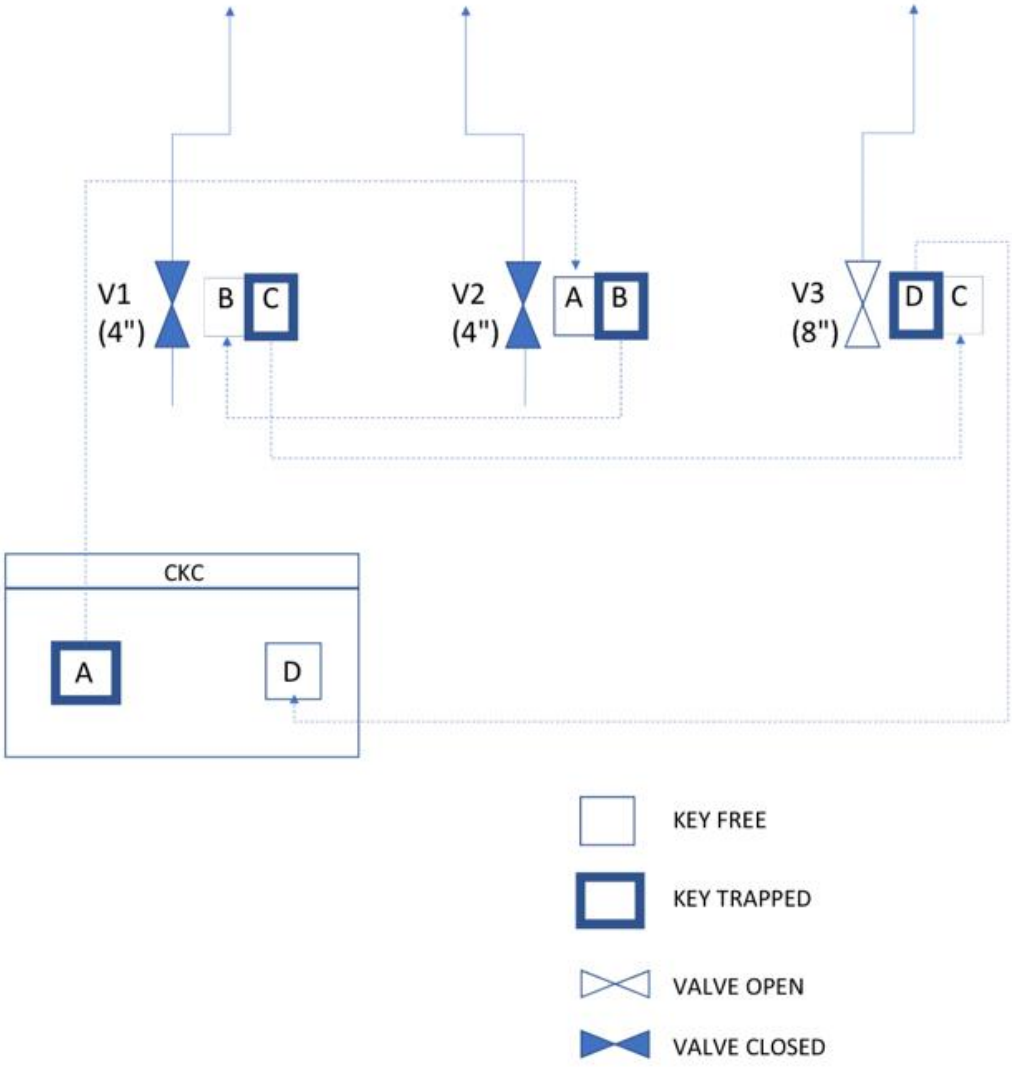
CCEL OIL & GAS

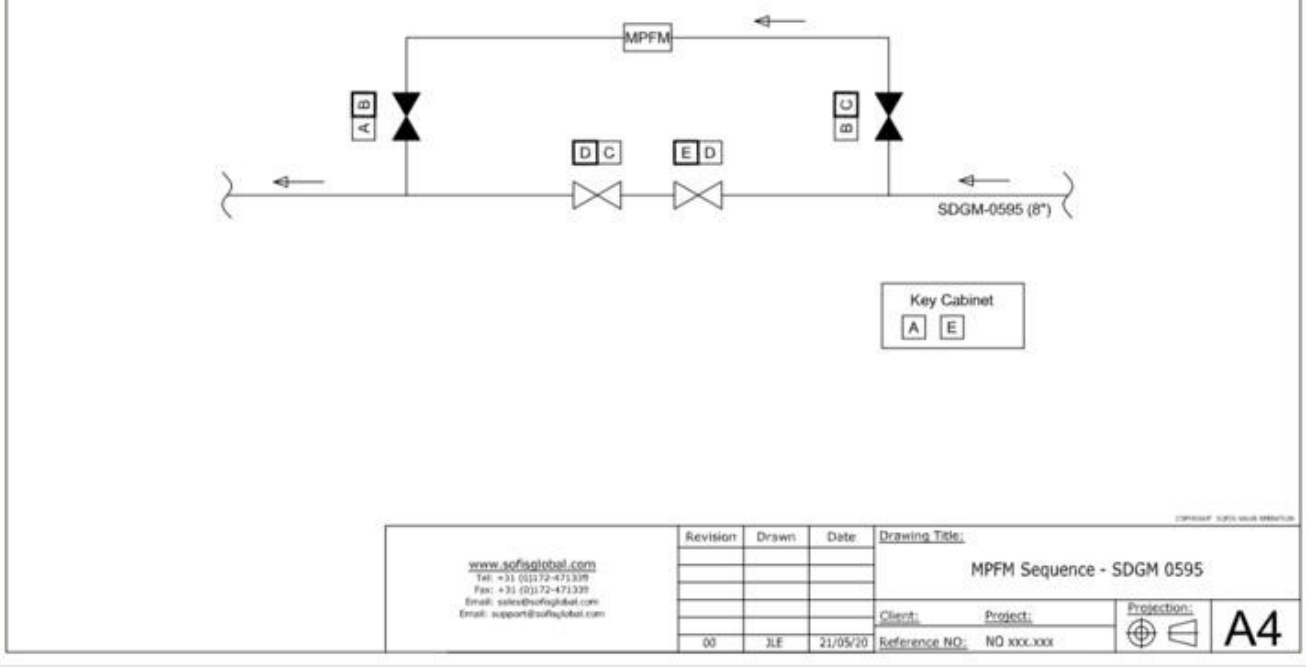
info@ccelengineering.com

sofis
valve operation

Sequence Diagram

Customer:	Gas Arabian
End user:	Saudi Aramco
Project:	HIPS Wells with MPFM Loops Facility
Customer PO:	PO307550
Sofis ref:	220.459

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B C
D C
E D
SDGM-0595 (8")
Key Cabinet
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www.sofisglobal.com
Revision
Drawn
Date
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Projection:
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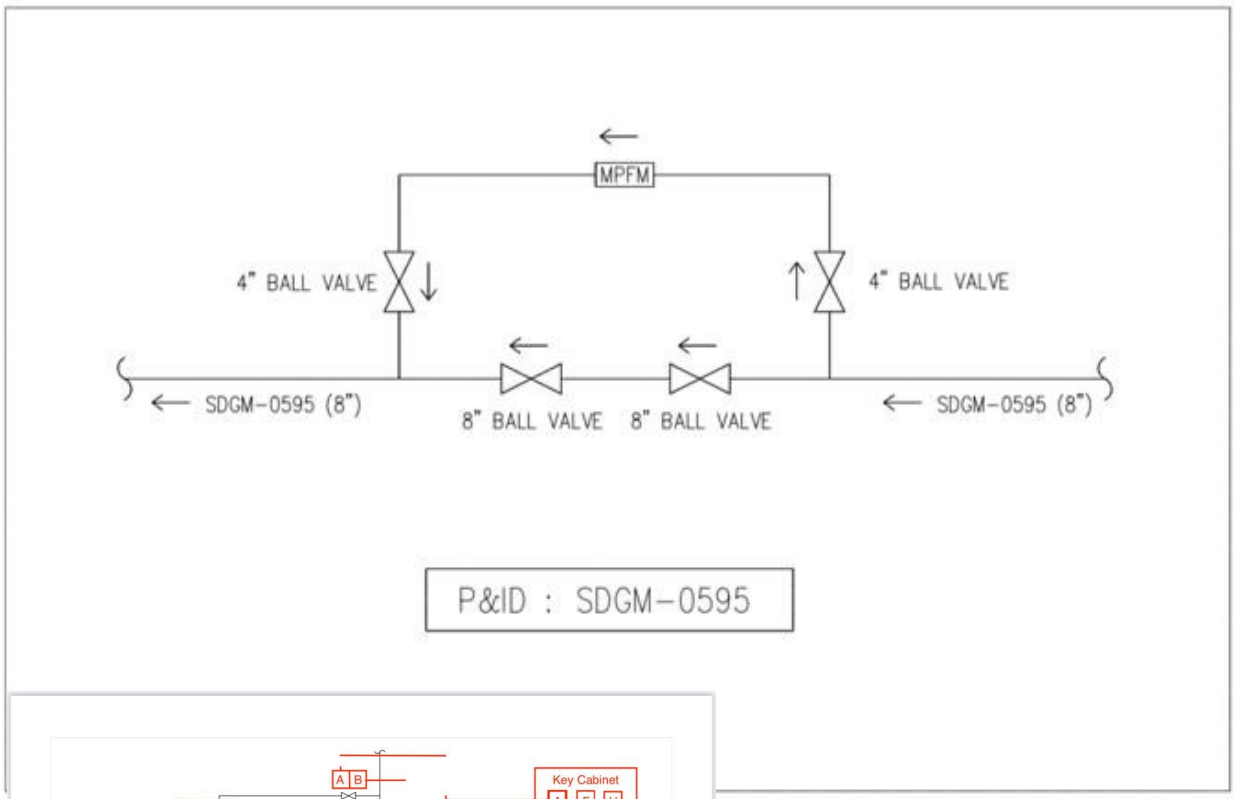
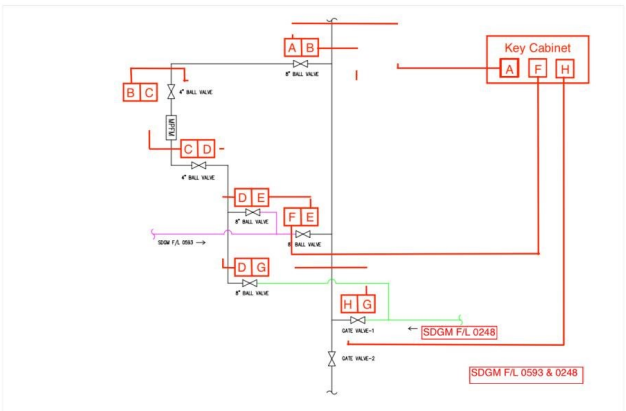

MPFM
4" BALL VALVE
4" BALL VALVE
SDGM-0595 (8")
8" BALL VALVE
8" BALL VALVE
SDGM-0595 (8")
P&ID : SDGM-0595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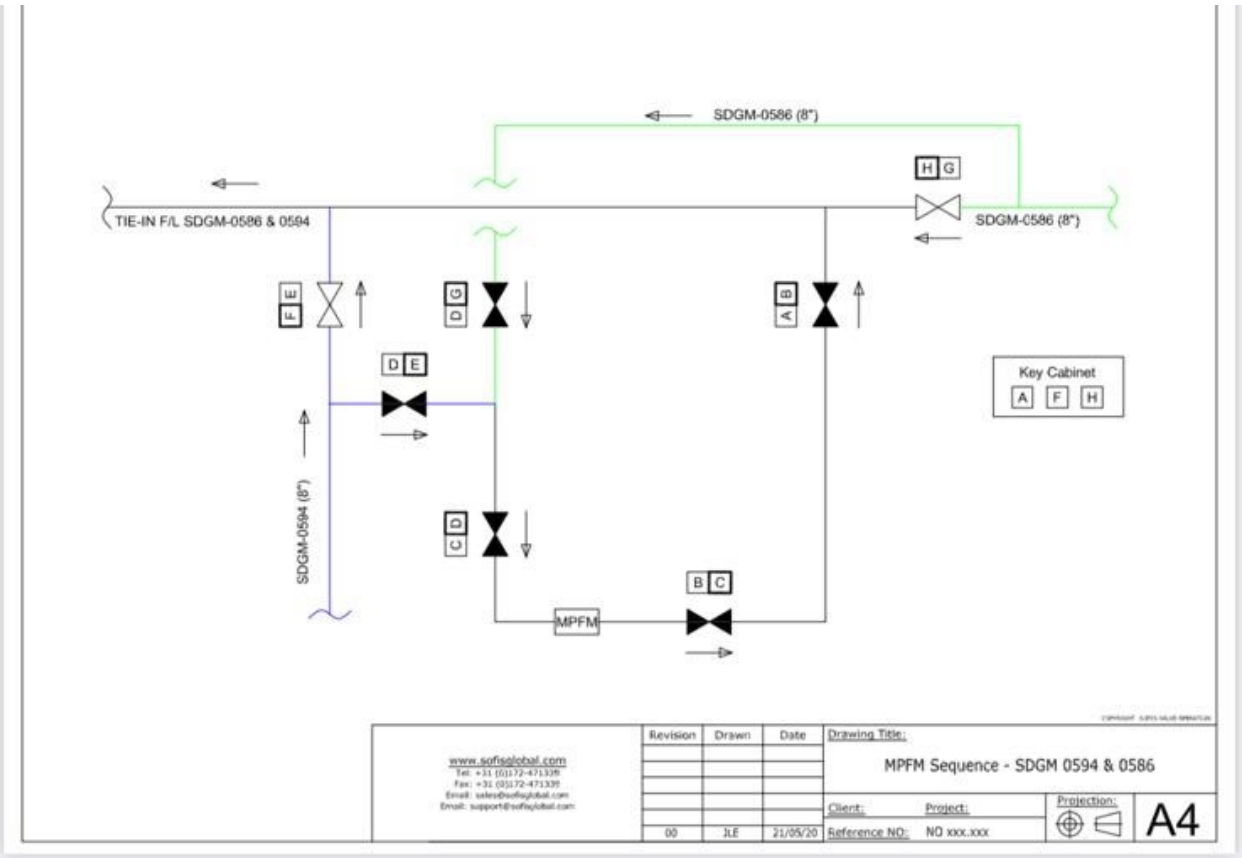
SDGM F/L 0593 & 0248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B C
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www.sofisglobal.com
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Project:
Projection:
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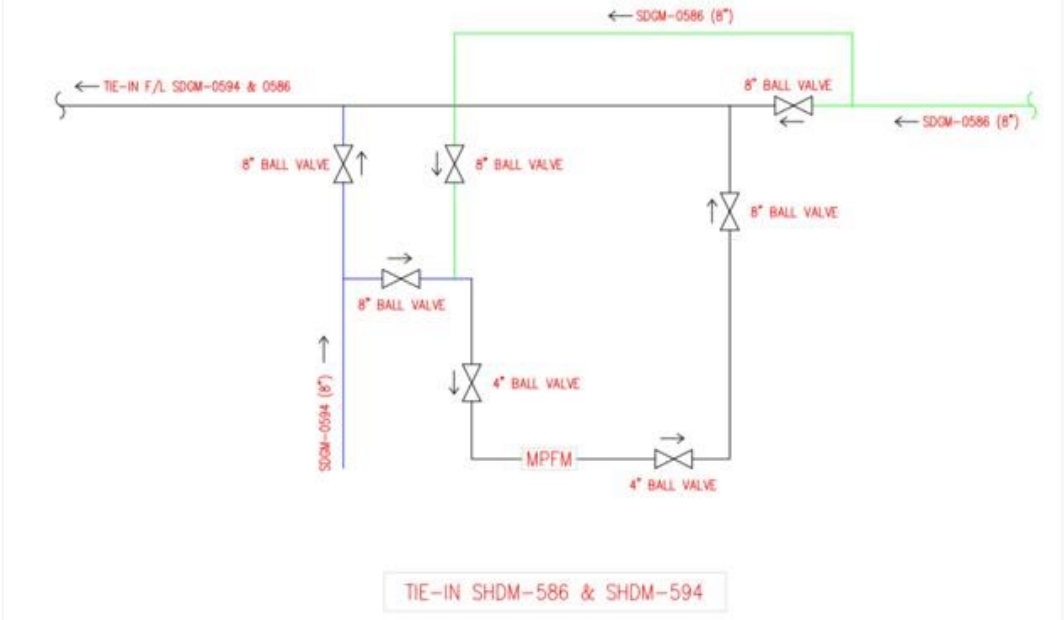
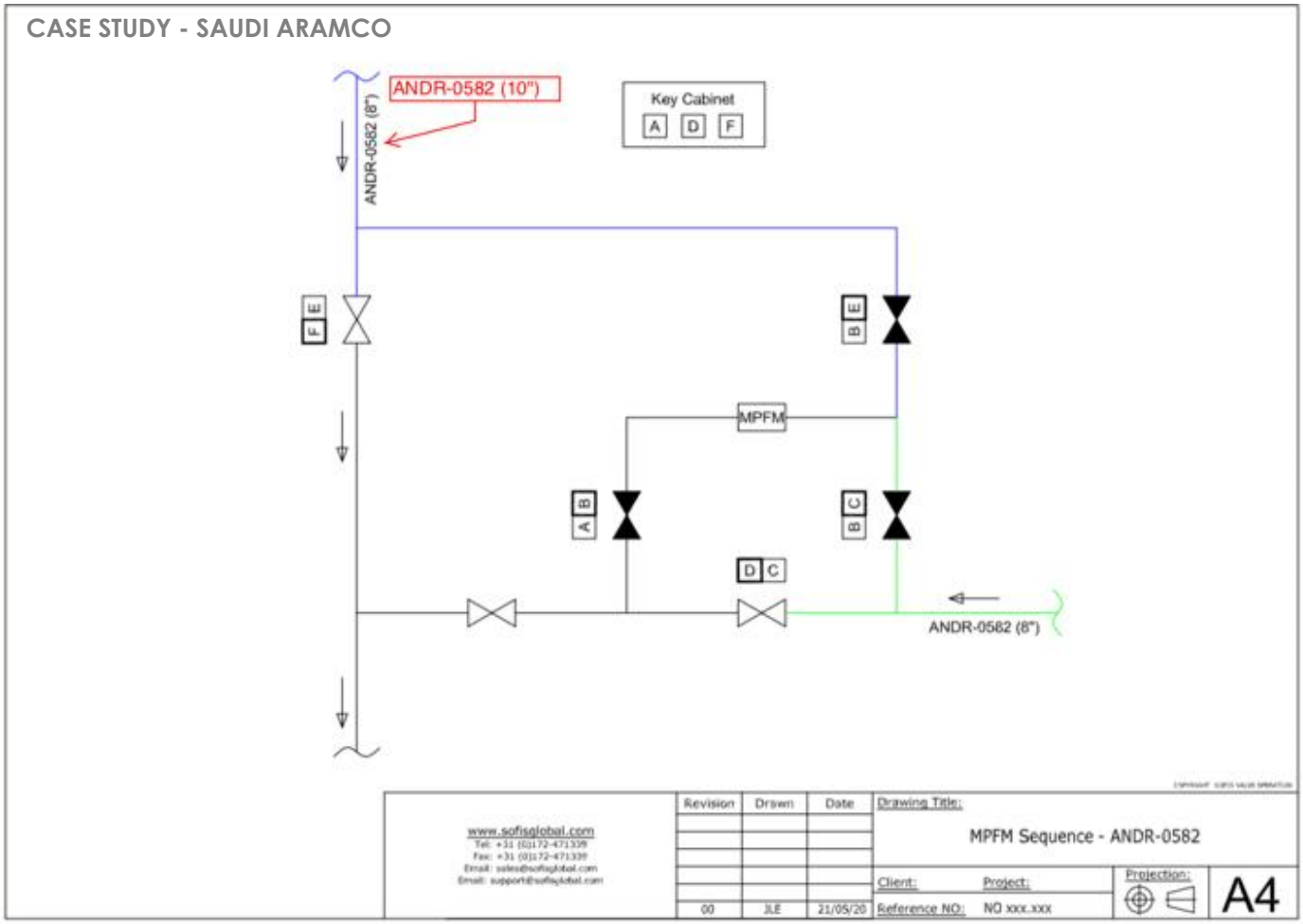
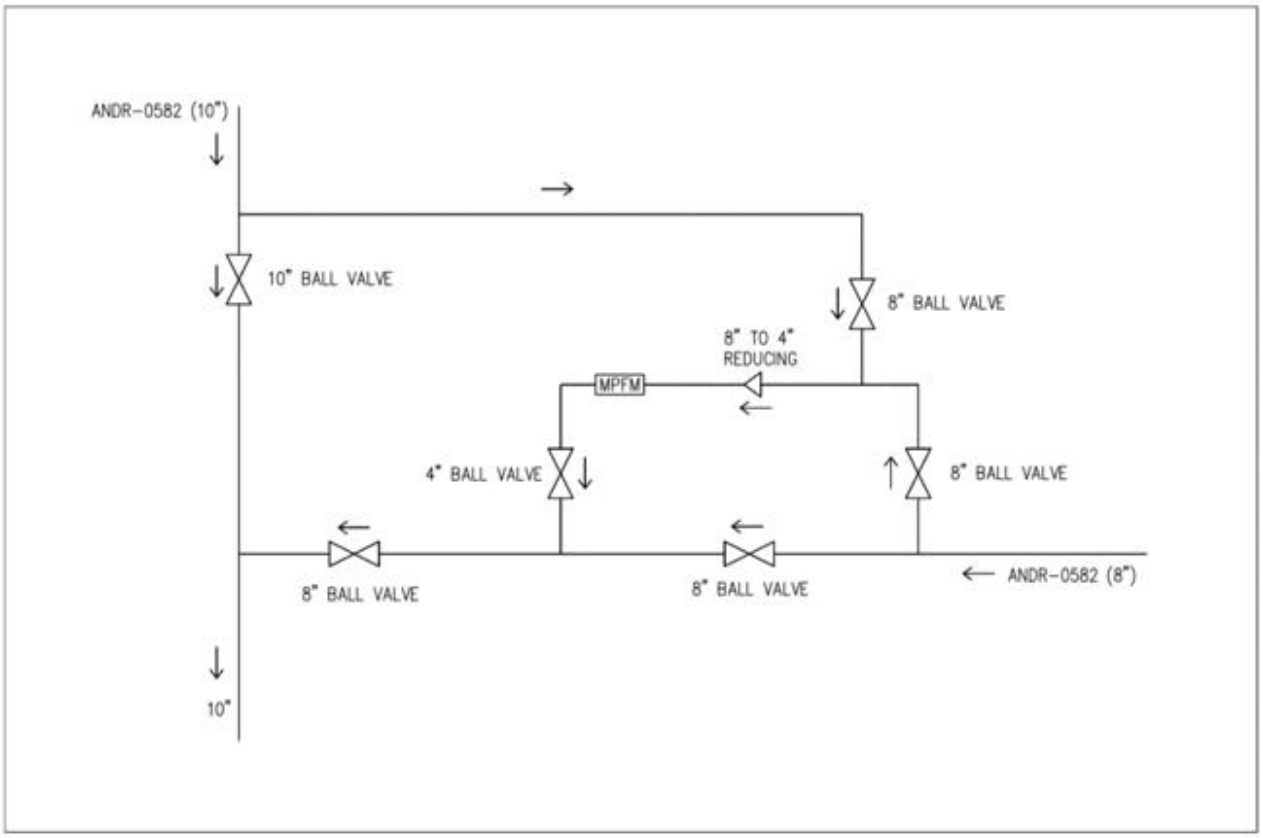
21/05/20
Reference NO:
NO xxx.xxx


SDGM-0586 (8")
TIE-IN F/L SDGM-0594 & 0586
8" BALL VALVE
SDGM-0586 (8")
8" BALL VALVE
8" BALL VALVE
8" BALL VALVE
8" BALL VALVE
4" BALL VALVE
SDGM-0594 (8")
MPFM
4" BALL VALVE
TIE-IN SHDM-586 & SHDM-594

CASE STUDY - SAUDI ARAMCO





MCDS AND SYSTEMS

sofis

MASTER CONTROL DATA SHEET

REF: 52525

TAG ALIGNMENT:

REVISION:0
CREATED BY: EHU
DATE: 15/10/20
APPROVED BY: EH

LATEST REV BY:
CUSTOMER: GAS Arabian Services Co. Ltd
PROJECT: Saudi Aramco OMPP, Saudi Arabia
P/O No: PO310825

Notes
Special Instructions

SERIAL No	DEL No	PIN CODE	EPAC Item	PO ITEM	LOCK MARKINGS 1	LOCK MARKINGS 2	LOCK MARKINGS 3	LOCK MODEL	ADAPT No	No OF TURNS	CLOSED CODE	CL KEY WAY	OP KEY WAY	OPEN CODE	CL KEY	OP KEY	VALVE / GEAR MANUFACTURER	TYPE	FIG	SIZE	CLASS	OP	FIT TO	COMPLETED BY	ASSEMBLER ID NCR	INSPECTOR ID NCR
52525-0001	1		1		ANDR-3007	VALVE 1	Aindar	HRL-S-CO-R21	A80147564	Type 1	BG35	B	C	BG36	1	1	Unknown	Plug		4"		HW380S				
52525-0002	1		1		ANDR-3007	VALVE 2	Aindar	HRL-S-CO-R21	A80147564	Type 1	BG37	A	B	BG35	1		Unknown	Plug		4"		HW380S				
52525-0003	1		2		ANDR-3007	VALVE 3	Aindar	HRL-S-CO-R21	A80147491	Type 1	BG39	D	C	BG36	1		Unknown	Plug		8"		HW700S				
52525-0004	1		1		ANDR-0562	VALVE 1	Aindar	HRL-S-CO-R21	A80147477	Type 1	CJ46	B	C	CJ47	1	1	Rotork	Ball		4"		HW380S				
52525-0005	1		1		ANDR-0562	VALVE 2	Aindar	HRL-S-CO-R21	A80147477	Type 1	CJ48	A	B	CJ46	1		Rotork	Ball		4"		HW380S				
52525-0006	1		2		ANDR-0562	VALVE 3	Aindar	HRL-S-CO-R21	A80147463	Type 1	CJ49	D	C	CJ47	1		Sambo	Ball		8"		HW700S				
52525-0007	1		1		ANDR-0582	VALVE 1	Aindar	HRL-S-CO-R21	A80147477	Type 2	DJ13	A	B	DJ14	1	1	Rotork	Ball		4"		HW380S				
52525-0008	1		2		ANDR-0582	VALVE 2	Aindar	HRL-S-CO-R21	A80147463	Type 2	DJ14	B	C	DJ15		1	Sambo	Ball		8"		HW700S				
52525-0009	1		2		ANDR-0582	VALVE 3	Aindar	HRL-S-CO-R21	A80147463	Type 2	DJ17	D	C	DJ15	1		Sambo	Ball		8"		HW700S				
52525-0010	1		2		ANDR-0582	VALVE 4	Aindar	HRL-S-CO-R21	A80147463	Type 2	DJ14	B	E	DJ18		1	Sambo	Ball		8"		HW700S				
52525-0011	1		2		ANDR-0582	VALVE 5	Aindar	HRL-S-CO-R21	A80147516	Type 2	DJ19	F	E	DJ18	1		Rotork	Ball		8"		HW700S				
52525-0012	1		1		FZRN-8011	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	FJ46	B	C	FJ47	1	1	Rotork	Ball		4"		HW380S				
52525-0013	1		1		FZRN-8011	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	FJ48	A	B	FJ46	1		Rotork	Ball		4"		HW380S				
52525-0014	1		2		FZRN-8011	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	FJ49	D	C	FJ47	1		Sambo	Ball		8"		HW700S				
52525-0015	1		1		FZRN-8002	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	CG35	B	C	CG36	1	1	Rotork	Ball		4"		HW380S				
52525-0016	1		1		FZRN-8002	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	CG38	A	B	CG35	1		Rotork	Ball		4"		HW380S				
52525-0017	1		2		FZRN-8002	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	CG39	D	C	CG36	1		Sambo	Ball		8"		HW700S				
52525-0018	1		1		FZRN-8027	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	FH46	B	C	FH47	1	1	Rotork	Ball		4"		HW380S				
52525-0019	1		1		FZRN-8027	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	FH48	A	B	FH46	1		Rotork	Ball		4"		HW380S				
52525-0020	1		2		FZRN-8027	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	FH49	D	C	FH47	1		Sambo	Ball		8"		HW700S				
52525-0021	1		1		FZRN-8300	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	EG36	B	C	EG37	1	1	Rotork	Ball		4"		HW380S				
52525-0022	1		1		FZRN-8300	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	EG38	A	B	EG36	1		Rotork	Ball		4"		HW380S				
52525-0023	1		2		FZRN-8300	VALVE 3	Fazran	HRL-S-CO-R21	A80147669	Type 1	EG39	D	C	EG37	1		Euler Gears	Ball		8"		HW600S				
52525-0024	1		1		FZRN-8304	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	AC46	B	C	AC47	1	1	Rotork	Ball		4"		HW380S				
52525-0025	1		1		FZRN-8304	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	AC48	A	B	AC46	1		Rotork	Ball		4"		HW380S				
52525-0026	1		2		FZRN-8304	VALVE 3	Fazran	HRL-S-CO-R21	A80147632	Type 1	AC49	D	C	AC47	1		Euler Gears	Ball		8"		HW600S				
52525-0027	1		1		FZRN-8310	VALVE 1	Fazran	HRL-S-CO-R21	A80147603	Type 1	DH46	B	C	DH47	1	1	Unknown	Ball		4"		HW380S				
52525-0028	1		1		FZRN-8310	VALVE 2	Fazran	HRL-S-CO-R21	A80147603	Type 1	DH48	A	B	DH46	1		Unknown	Ball		4"		HW380S				
52525-0029	1		2		FZRN-8310	VALVE 3	Fazran	HRL-S-CO-R21	A80147685	Type 1	DH49	D	C	DH47	1		Rotork	Ball		8"		HW600S				
52525-0030	1		1		FZRN-8312	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	DG35	B	C	DG37	1	1	Rotork	Ball		4"		HW380S				
52525-0031	1		1		FZRN-8312	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	DG38	A	B	DG35	1		Rotork	Ball		4"		HW380S				
52525-0032	1		2		FZRN-8312	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	DG39	D	C	DG37	1		Sambo	Ball		8"		HW700S				
52525-0033	1		1		FZRN-8314	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	BD46	B	C	BD47	1	1	Rotork	Ball		4"		HW380S				
52525-0034	1		1		FZRN-8314	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	BD48	A	B	BD46	1		Rotork	Ball		4"		HW380S				
52525-0035	1		2		FZRN-8314	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	BD49	D	C	BD47	1		Sambo	Ball		8"		HW700S				
52525-0036	1		1		FZRN-8316	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	HK46	B	C	HK47	1	1	Rotork	Ball		4"		HW380S				
52525-0037	1		1		FZRN-8316	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	HK48	A	B	HK46	1		Rotork	Ball		4"		HW380S				
52525-0038	1		2		FZRN-8316	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	HK49	D	C	HK47	1		Sambo	Ball		8"		HW700S				
52525-0039	1		1		FZRN-8318	VALVE 1	Fazran	HRL-S-CO-R21	A80147477	Type 1	AD46	B	C	AD47	1	1	Rotork	Ball		4"		HW380S				
52525-0040	1		1		FZRN-8318	VALVE 2	Fazran	HRL-S-CO-R21	A80147477	Type 1	AD48	A	B	AD46	1		Rotork	Ball		4"		HW380S				
52525-0041	1		2		FZRN-8318	VALVE 3	Fazran	HRL-S-CO-R21	A80147463	Type 1	AD49	D	C	AD47	1		Sambo	Ball		8"		HW700S				
52525-0042	1		2		SDGM-0586 & 0594	VALVE 1	Shedgum	HRL-S-CO-R21	A80147463	Type 3	EG02	H	G	EG03	1	1	Sambo	Ball		8"		HW700S				
52525-0043	1		3		SDGM-0586 & 0594	VALVE 2	Shedgum	HRL-S-CO-R21	A80147463	Type 3	EG04	D	G	EG03	1		Sambo	Ball		8"		HW700S				
52525-0044	1		1		SDGM-0586 & 0594	VALVE 3	Shedgum	HRL-S-CO-R21	A80147477	Type 3	EG05	B	C	EG06	1	1	Rotork	Ball		4"		HW380S				
52525-0045	1		1		SDGM-0586 & 0594	VALVE 4	Shedgum	HRL-S-CO-R21	A80147477	Type 3	EG06	C	D	EG04			Rotork	Ball		4"		HW380S				
52525-0046	1		2		SDGM-0586 & 0594	VALVE 5	Shedgum	HRL-S-CO-R21	A80147463	Type 3	EG07	A	B	EG05	1		Sambo	Ball		8"		HW700S				
52525-0047	1		2		SDGM-0586 & 0594	VALVE 6	Shedgum	HRL-S-CO-R21	A80147463	Type 3	EG04	D	E	EG08		1	Sambo	Ball		8"		HW700S				
52525-0048	1		2		SDGM-0586 & 0594	VALVE 7	Shedgum	HRL-S-CO-R21	A80147463	Type 3	EG09	F	E	EG08	1		Sambo	Ball		8"		HW700S				

LOCKS CODED BY _____ TAGS FITTED BY _____

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INSPECTION STAMP _____
DESIGN VERIFICATION NOT REQUIRED

TOTAL COMMITTED TO BETTER ENERGY TOTAL E&P CONGO	MOHO NORD PROJECT	MOHO NORD

NON CONFORMANCE REPORT

NCR n°: MHN-CT118-MHNP-2100-NCR-000060	Rev. n°: 00	Date : 03/20/2017

15-Proposed Corrective Action to Prevent Recurrence:
Repaired

16-Person in Charge of the NCR Implementation:

17-Implementation Date:

18-Derogation Request / Concession Request: Yes ☐ / No ☐ n°

19-Proposed Corrective Action: Accepted ☒ / Rejected ☐

20-NCR Closed Out:

By (Name, Date and Signature):

Closed by HMI QM : J.H. Baek
30 Jun. 2017

WASIM
30/06/17

CCEL-SOFIS
E-mail: info@ccelengineering.com
Page No. 1 of 4 Pages

COMMISSIONING REPORT for: HABAN PIG LAUNCHER L-501002

(Company): PDO, OMAN ONSHORE / OFFSHORE*

Address: MUSCAT, OMAN Tel:

Name and Position of Site Contact: Rizwan., Mech PH.,

Work carried out: NEW INSTALLATION ✓ MAINTENANCE SURVEY

THE FOLLOWING INTERLOCK SYSTEMS HAVE BEEN INSTALLED AND COMMISSIONED, all key / lock release positions have been set.

SYSTEM /TAG NO.	KEY(S) SET	COMMENTS
L-501002	BJ13 – A BJ14 – B BJ15 – C BJ16 – D BJ17 – E	These Keys Installed at Sites except Key A
	BJ19 – F	Rizwan H-5630

CCEL / SOFIS Engineer Signature: CHARLES Date: 23-06-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature: Date: 23/6/22

Name (Print): Azmi Prakash Position:

Seeb Al-Sarya Engineering L.L.C.

NGOMA FPSO ANGOLA
PROCESS INTERLOCKING SYSTEMS

SITE SURVEY, MAINTENANCE & INSTALLATION
SITE REPORT

INSIDE	Page
Scope of service	2
Summary of site activities	2
Condition of interlocks on Board	2
Recommendation	2
Logistics summary	3
Signed Field Service Report	4-11
Site pictures	12

sofis

CCEL OIL & GAS

WE KEEP YOUR PROCESS FLOWING

OCTOBER 2022

CCEL OIL & GAS

info@ccelengineering.com

CUSTOMER ACCEPTANCE

Customer / Representative Signature .....

Name (Print) .....

DAN IONESCU Offshore Installation Manager NGOMA FPSO

Date .....

Angola Representative

SCOPE OF SERVICE

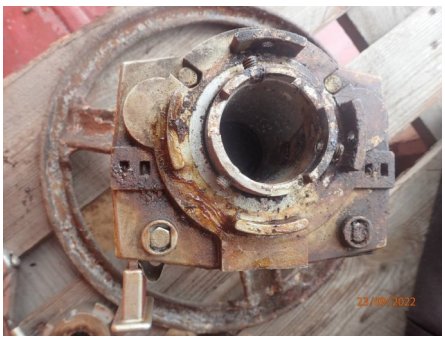
1. Technical Evaluation of the installed Interlocks on board NGOMA FPSO
2. Re-alignment and maintenance on critical valves as per client site request
3. General evaluation of interlock condition on board and recommendation

SUMMARY OF SITE ACTIVITIES

Reference	Qty	Summary
Smithflow Control locks	143	Survey carried out. Complete replacement required
Netherlocks (including 2 DL3)	95+2	Survey carried out. Complete replacement required
Nos of Locks Serviced, key resets, & recommissioned	96	A temporary intervention maintenance carried out on critical valves

CONDITION OF INTERLOCKS ON BOARD / RECOMMENDATION

General overall condition of locks on board NGOMA FPSO are very bad and require immediate replacements. Majority of the locks are badly corroded, key missing, damaged locks, key settings are out of place.



LOGISTICS SUMMARY

Reference	PERIOD	Comment
Nos of days for travel Period	2	1 night travel & hotel in and 1 night travel outbound
Nos of days site activities	36	On board NGOMA
Nos of Times for Ticket change	1	Client request for date change

FIELD SERVICE REPORT

NGOMA INSTALLED INTERLOCKS
SURVEY / MAINTENANCE

CCEL -SOFIS

E-mail: info@ccelengineering.com

FIELD SERVICE REPORT for(location): NGOMA FPSO – MAIN DECK

Visit to (Site Name/Company): NGOMA FPSO

ONSHORE /.OFFSHORE*

Address: ____________________

DATE: 21-09-2022

Tel: __________ Email: ____________________

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: Francisco da costa / C. operator

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☐ SURVEY

SUMMARY OF WORK CARRIED OUT / REPORT

– started the inventory of the NGOMA installed interlocks on the main - Deck.

It was observed that majority of the interlocks are seriously corroded. and stands the risk of malfunctioning.

Some were not having keys, their keys are missing

others were badly damaged, keys were stucked

CCEL / SOFIS Engineers Signature: Charles [signature]

Date: 21-09-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature: [signature]

Date 21-09-2022

Name (Print) VLACIU VICTOR

Position CARGO SUPERVISOR

STAMP

NGOMA INSTALLED INTERLOCKS
SURVER / MAINTENANCE

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No. 2 of ..... pages

FIELD SERVICE REPORT for(location): NGOMA – MAIN DECK PPSO

Visit to (Site Name/Company): NGOMA FPSO

ONSHORE / OFFSHORE*

Address:

DATE: 22-09-2022

Tel: Email:

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: Francisco da Costa / C. operator

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

Maintenance job was carried out on the following locks on the main deck.

(1) F27-SP-321050 F1 – The lock was badly damaged and the internal damaged parts was replaced. – SLOP PORT A/B-04A.

(2) F27-SP-321051 G2 – Key was stucked and was removed and serviced. key A-04AE

(3) F27-SP-321049 E1 – The lock is badly damaged and requires replacement like for Like.

(4) F27-SP-321049-E2 was serviced OK.

(5) – continuation of the interlock inventory on Main Deck

CCEL / SOFIS Engineers Signature: Charles Ang. Date: 22-09-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature: VLACIU VICTOR Date: 22-09-2022

Name (Print): VLACIU VICTOR Position: CARGO SUPERVISOR

STAMP

NGOMA FPSO INSTALLED INTERLOCKS
MAINTENANCE / CALIBRATION / SETTING OF KEYS

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No.....of.....pages

FIELD SERVICE REPORT for(location): NGOMA FPSO - MAINDECK

Visit to (Site Name/Company): NGOMA - FPSO

~~ONSHORE~~ / OFFSHORE*

Address: ANGOLA

DATE: 27-09-2022

Tel:_____ Email:_____

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: Francisco da Costa, A. Mabiala / C. Op

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

Maintenance / calibration / settings of keys such that the Ref positions A/B accept key A or B, B will not accept key A, and A will not accept key B.

25. F27-SP-321025-E1 26. F27-SP-321025-E2 27. F27-SP-321026-F1 28. F27-SP-321026-F2	(COT 2F-P) Certified OK
29. F27-SP-321027-G1 30. F27-SP-321027-G2	
31. F27-SP-321034-E1 32. F27-SP-321034-E2	(COT 3A-P) Certified OK
33. F27-SP-321035-F1 34. F27-SP-321035-F2 35. F27-SP-321036-G1 36. F27+SP-321036-G2	

CCEL / SOFIS Engineers Signature CHARLES ANY Date: 27-09-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature _____ Date 4/10/22

Name (Print) AMIT Position CARGO SUPT

STAMP

FPSO INSALLED INTERLOCKS
MAINTENANCE / CALIBRATION / SETTING OF KEYS

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No.....of.....pages

FIELD SERVICE REPORT for(location): NGOMA - MAIN DECK (FPSO)

Visit to (Site Name/Company): NGOMA - FPSO

~~ONSHORE~~ / OFFSHORE*

Address: ANGOLA

DATE: 27/09/2022

Tel:_____ Email:_____

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: Francisco da Costa A. Mabrak/C.OP

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

Maintenance / calibration / setting of keys such that the Red positions A/B accept key A or B, B will not accept key A, A will not accept key B.	
37. F27 - SP - 321055 - E1 38. F27 - SP - 321055 - E2 39. F27 - SP - 321056 - F1 40. F27 - SP - 321056 - F2	(COT 4 P) certified OK
41. F27 - SP - 321057 - G1 42. F27 - SP - 321057 - G2	
43. F27 - SP - 321064 - G1 44. F27 - SP - 321064 - E2	
45. F27 - SP - 321065 - F1 46. F27 - SP - 321065 - F1 47. F27 - SP - 321066 - G1 48. F27 - SP - 321066 - G2	METHANOL TANK P certified OK

CCEL / SOFIS Engineers Signature CHARLES Amy Date: 27-09-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature _____ Date 4/10/22

Name (Print) AMIT Position CARGO SUPT

STAMP

NGOMA FPSO INSTALLED INTERLOCKS
MAINTENANCE / CALIBRATION / SETTING OF KEYS

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No.....of.....pages

FIELD SERVICE REPORT for(location): NGOMA - MAIN DECK FPSO

Visit to (Site Name/Company): NGOMA - FPSO

~~ONSHORE~~ / OFFSHORE*

Address: ANGOLA

DATE: 27/09/2022

Tel:_____ Email:_____

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: Francisco da Costa A. Mabiala / C.O.P

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

Maintenance / calibration / setting of keys such that the Red position A/B accept key A or B, B will not accept key A, A will not accept key B.

49. F27 - SP - 321040 - E1 50. F27 - SP - 321040 - E2 51. F27 - SP - 321041 - F1 52. F27 - SP - 321041 - F2	(COT 3F - P) certified ok
53. F27 - SP - 321042 - G1 54. F27 - SP - 321042 - G2	
55. F27 - SP - 321049 - E1 56. F27 - SP - 321049 - E2	
57. F27 - SP - 321050 - F1 58. F27 - SP - 321050 - F2 59. F27 - SP - 321051 - G1 60. F27 - SP - 321051 - G2	(SLOP P) certified ok

CCEL / SOFIS Engineers Signature CHARLES ANS. Date: 27-09-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature _____ Date 4/10/22

Name (Print) AMIT Position CARGO SUPT

STAMP

NGOMA FPSO INSTALLED INTERLOCKS
MAINTENANCE / CALIBRATION / SETTING OF KEYS

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No.....of.....pages

FIELD SERVICE REPORT for(location): FPSO – MAIN DECK

Visit to (Site Name/Company): NGOMA – FPSO

~~ONSHORE~~ / OFFSHORE*

Address: ANGOLA

DATE: 04/10/2022

Tel:_____ Email:_____

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: JOSE MALIBUCO CARGO SUPT

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

maintenance / calibration / setting of keys such that the pef positions A/B accept key A or B, B will not accept key A, A will not accept key B.

61. F27 – SP – 321001	E_1	(COT 1C) certified ok
62. F27 – SP – 321001	E_2	
63. F27 – SP – 321002	F_1	
64. F27 – SP – 321002	F_2	
65. F27 – SP – 321003	G_1	
66. F27 – SP – 321003	G_2	
67. F27 – SP – 321007	E_1	
68. F27 – SP – 321007	E_2	
69. F27 – SP – 321008	F_1	(COT 1A-S) certified ok
70. F27 – SP – 321008	F_2	
71. F27 – SP – 321009	G_1	
72. F27 – SP – 321009	E_2	

CCEL / SOFIS Engineers Signature CHARLES Aug: Date: 04-10-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature _____ Date 04/10/22

Name (Print) AMIT Position CARGO SUPT

STAMP

NGOMA FPSO INSTALLED INTERLOCKS
MAINTENANCE / CALIBRATION / SETTING OF KEYS

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No.....of.....pages

FIELD SERVICE REPORT for(location): FPSO – MAIN DECK

Visit to (Site Name/Company): NGOMA – FPSO

~~ONSHORE~~ / OFFSHORE*

Address: ANGOLA

DATE: 04/10/2022

Tel:_____ Email:_____

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: JOSE MANBUCO CARGO SUPT

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

Maintenance / Calibration / setting of keys such that the pef positions A/B accept key A or B, ~~Key~~ B will no accept key A and A will not accept key B.

73. F27 – SP – 321022 – E_1 74. F27 – SP – 321022 – E_2 75. F27 – SP – 321023 – F_1 76. F27 – SP – 321023 – F_2	(COT 2A-S) certified OK
77. F27 – SP – 321024 – G_1 78. F27 – SP – 321024 – G_2	
79. F27 – SP – 321028 – E_1 80. F27 – SP – 321028 – E_2	
81. F27 – SP – 321029 – F_1 82. F27 – SP – 321029 – F_2 83. F27 – SP – 321030 – G_1 84. F27 – SP – 321030 – G_2	(COT 2F-S) E_1, E_2, F, & G_1 certified OK F_2 & G_2 keys stucked. Requires Removal of H/W (H/W Rwty)

CCEL / SOFIS Engineers Signature CHARLES AWU Date: 04-10-2022

CUSTOMER ACCEPTANCE

Customer / Representative Signature _____ Date 4/10/22

Name (Print) AMIT Position CARGO SUPT

STAMP

NGOMA FPSO INSTALLED INTERLOCKS
MAINTENANCE / CALIBRATION / SETTING OF KEYS

CCEL -SOFIS
E-mail: info@ccelengineering.com

Page No..........of............pages

FIELD SERVICE REPORT for(location): FPSO MAIN DECK

Visit to (Site Name/Company): NGOMA - FPSO OPS

~~ONSHORE~~ / OFFSHORE*

Address: ANGOLA

DATE: 04/10/2022

Tel: ______ Email: ______

SOFIS REF:

Visit requested by ☐ OFFICE ☑ CUSTOMER (SPECIFY) Call Out

Name and Position of Site Contact: JOSE M. [illegible]

Work carried out: NEW INSTALLATION ☐ SERVICE ☐ REMOVAL ☐ MAINTENANCE ☑

SUMMARY OF WORK CARRIED OUT / REPORT

Maintenance / Calibration / setting of keys such that the Ref positions A/B, accept key A or B, B will not accept Key A and A will not accept Key B.

85.	F27 - SP - 321043-E1	(COT 3F-S) Certified. OK
86.	F27 - SP - 321043-E2	
87.	F27 - SP - 321044-F1	
88.	F27 - SP - 321044-F2	
89.	F27 - SP - 321045-G1	
90.	F27 - SP - 321045-G2	
91.	F27 - SP - 321058-E1	
92.	F27 - SP - 321055-E2	
93.	F27 - SP - 321059-F1	(COT 4S) certified OK
94.	F27 - SP - 321059-F2	
95.	F27 - SP - 321060-G1	
96.	F27 - SP - 321060-G2	

CCEL / SOFIS Engineers Signature: CHARLES [signature] Date: 04-10-2022

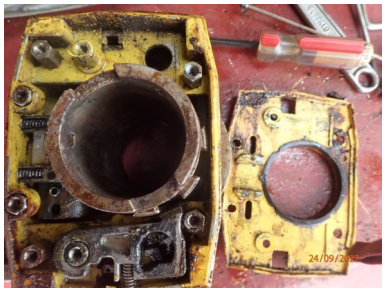
CUSTOMER ACCEPTANCE

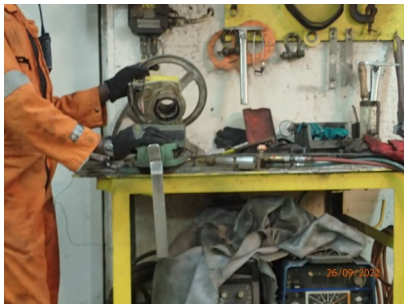
Customer / Representative Signature: [signature] Date: 4/10/22

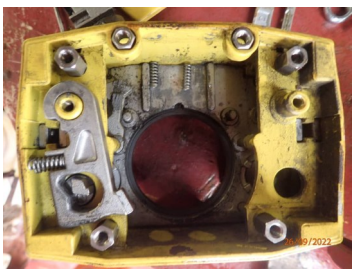
Name (Print): AMIT Position: CARGO SUPT

STAMP

SOME SITE PICTURES







CCEL OIL & GAS

CONTROL VALVE REPAIR PROJECT

KADUNA REFINERY QUICK FIX PROJECT

KRPC QUICK FIX PROJECT

CCEL OIL & GAS

CONTROL VALVE REPAIR PROJECT

KRPC QUICK FIX PROJECT

About Us

CCEL Oil & Gas Limited Company is an indigenous company registered with CAC, saddled with the responsibility of carrying out professional services in oil and gas such as: engineering/designing services, procurement services, maintenance services, and construction management services.

CCEL Oil & Gas Limited has been around for over 15 years and has furnished the oil and gas industry with services ranging from design, installation and commissioning, maintenance of process interlocking systems, valve and actuator overhaul, pipeline and flange-facing services. We have a technical backup that is essential to maintaining process safety and constant product flow.

CCEL OIL & GAS

PROJECT REFRENCES & CLIENTS

KRPC QUICK FIX PROJECT







Chevron MEREN SONAM

Nigeria LNG Limited

SEPLAT

ALCON

ExxonMobil

ارامكو السعودية Saudi Aramco

DORMAN LONG SINCE 1949 ENGINEERING

Chevron EGTL

eni Naoc

NNPC WARRI REFINERY

TOTAL CONGO

HYUNDAI HEAVY INDUSTRIES CO.,LTD.

TOTAL AMENAM OML 99 / ODUDU

SNEPco

INDORAMA PETROCHEMICALS

PUNTCHEM

SPDC

NNPC PORT HARCOURT REFINERY

ENTREPOSE DANI

TOTAL UPSTREAM

IKIKE PROJECT

شركة تنمية نفط عمان Petroleum Development Oman

TOTAL OFON 2 PROJECTS

SAIPEM

vtti NAVGAS

TOTAL JV

eni saipem

WESCO

SBM OFFSHORE ENERGY. COMMITTED. ANGOLA

CCEL OIL & GAS

CONTROL VALVE REPAIR PROJECT

ACCOMPLISHMENTS: VALVE REVAMP

KRPC QUICK FIX PROJECT

AS FOUND

WRPC

DISASSEMBLED

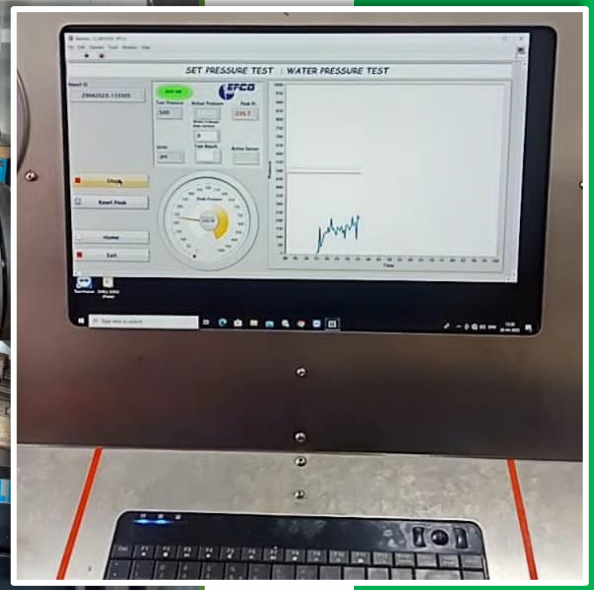
AS RECOVERED

CCEL OIL & GAS

CONTROL VALVE REPAIR PROJECT

ACCOMPLISHMENTS: VALVE HYDRO-TEST

KRPC QUICK FIX PROJECT



WRPC

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CONTROL VALVE REPAIR PROJECT

ACCOMPLISHMENTS: MACHINING

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CCEL OIL & GAS

CONTROL VALVE REPAIR PROJECT

KRPC QUICK FIX PROJECT

ACCOMPLISHMENTS:

DIFFERENT TYPES OF VALVES REVAMPED AT **WRPC**

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CONTROL VALVE REPAIR PROJECT

IMPLEMENTATION STRATEGY

KRPC QUICK FIX PROJECT

PROPOSED START DATE: --

NO. OF DAYS: --

ACTIVITY	IMPLEMENTATION TIMELINE (1 to 240 DAYS)
	Start Date: — Finish Date:
MOBILISATION PLAN, SITE WALKTHROUGH AND HSE INDUCTIONS & TRAINING	1
CONTROL VALVE REPAIR: AS FOUND TESTS, STRIPPING, INSPECTION OF INTERNAL PARTS, CLEANING/MACHINING OF THE INTERNALS, REPLACEMENTS OF PARTS & REASSEMBLING OF THE VALVES	2 to 63
	2 to 93
HYDRO-TESTING	3 to 149
CALIBRATION BY CCEL	6 to 152
CALIBRATION WITNESS BY WRPC	9 to 155
PAINTING	117 to 190
RETURN OF CONTROL VALVES TO WAREHOUSE	120 to 193
REPLACEMENTS OF PARTS AFTER REINSTALLATION	180 to 240

CCEL OIL & GAS

CONTROL VALVE REPAIR PROJECT

KADUNA REFINERY

KRPC QUICK FIX PROJECT

Project Planning / Work Schedule

1. Safety induction / Planning
2. Our team meeting with the mechanical/instrument team
3. CCEL will meet with Daewoo Scaffolding and Crane teams for clear evaluation & procedure
4. Our control valve repair team to proceed with the job as planned

Strategy:

a) CCEL instrument team will carry out functionality test on the valves/ positioners
(Go Back to Slide 11)

a) The mechanical team will strip the valves for maintenance, repairs and servicing
b) The instrument team will carry out maintenance/repairs and servicing of positioners
c) CCEL Test Bench Team will then carry out a hydro-test on the valve
d) The instrument team conducts test/calibration of the control valves.
e) CCEL Instrument Team/KRPC & DAEWOO witness and approve final calibration of the valves.
(Go Back to Slide 13)

a) CCEL Painting Team commences painting of the control valves.
b) Painted valves are returned to the warehouse awaiting reinstallation.

5. Logistics by CCEL

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CONTROL VALVE REPAIR PROJECT

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Method Statement for Off-Line Control Valve Corrective Maintenance

The following are the Sequence of Activity for the above subject works:

STEP 1: Confirm Isolation- the Candidate valve and integral components/ connectors are checked for positive isolation. This is to prevent release of trapped pressure and other contaminants that can result in injury/damages to personnel and the environment. Use of certified pressure gauges, recorders, slowly open vents and drains on the valves body cavity before disassembly.

STEP 2: Orientation Markings- The valve's orientation is marked and recorded to prevent mismatched faces during reassembly.

STEP 3: Preparation for Disassembly of valve from process: The valves on pipe, other connecting faces and studs are lightly ''tapped'' and penetrant applied to break the surface tension for ease of disassembly.

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CONTROL VALVE REPAIR PROJECT

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Method Statement for Off-Line Control Valve Corrective Maintenance

STEP 4: Disassembly of valve from process: The candidate valve is disassembled from process pipeline using suitable non spark tools, use of approved bolting/unbolting sequence to avoid misalignment, provision for containment of process medium run off and provision of support for valve to prevent ''drop off'' from height.

STEP 5: Preparation for mechanical lifting of valve from piping: The valve's lifting rig is checked, the lifting equipment must be certified, colour-coded and approved according to the clients specifications. Appropriate lifting shackles, harnesses and web slings must be used; and then transported to the workshop.

STEP 6: As found Functionality Test/Strip down inspection and Cleaning: This is to ascertain the condition of the valve on arrival (Go To Step (a), Slide 9 for details). The valve is disassembled and its components are cleaned with a suitable solvent, inspected for scales, galls, deformities, etc. Faulty/damaged components are segregated for step 8.

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CONTROL VALVE REPAIR PROJECT

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Method Statement for Off-Line Control Valve Corrective Maintenance

STEP 7: Servicing of Moving Parts- Moving or motion supporting components after initial cleaning/inspection, are serviced using a suitable O.E.M recommended solvent to remove impurities such as sand, rust, debris, etc., After servicing, a suitable lubricant is applied to the component. This step applies for components such as seat ring, valve plug, valve stem and seat, diaphragm, actuator spring, bearings, gland packing, gaskets etc

STEP 8: Replacement of Faulty Components- The valve's faulty components on inspection are replaced in strict compliance to the O.E.M procedure/guidelines for the work.

STEP 9: Reassembly - The valve is reassembled using the reversed disassembly sequence and in strict compliance with the O.E.M. procedure/guidelines for this activity.

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CONTROL VALVE REPAIR PROJECT

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Method Statement for Off-Line Control Valve Corrective Maintenance

STEP 10: Pressure Testing - After reassembly, the maintained valve is tested and certified (with a certificate) for functionality, ease of turning, shut off ability and smooth operation.

STEP 11: Calibration Test: The valve is test and calibrated in accordance with KRPC datasheet calibration requirement. (Go To Step (e), Slide 9)

STEP 12: Painting: The control valves will be painted according To CCEL painting procedure approved by KRPC.

STEP 13: Reinstallation/Commissioning:

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CONTROL VALVE REPAIR PROJECT

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