Maintenance Work Order

BDB2019-08004 **B1149 BOP Control Unit / Yearly - ET** **6. Filed**

General			Planning	
Work Instruction	B1149		*Due Date*	28/10/2020
Function	332100001	Accumulator Unit, BOP	*Est. Duration*	0
Asset	33210201-01	BOP Control System, Accumulator Skid	*Planned Start*	28/10/2020
Serial Number	6331		*CBM Status*	Normal
Form			*Port Call*	
Completed	20/06/2020		*Arrival Date*	

Work Classification			
Maint. Type	Preventative Maintenance	*Unexpected*	NO
Maint. Class	Electrical	*Maint. Criteria*	
WR / Failure			
Priority			

Team

Type	*Description*	*Est. Hours*	*Estimated Cost*		*Responsible*
INTERNAL	Sr Electronics Technician	12,00	USD	600,000000	✓
INTERNAL	Electronics Technician 1	12,00	USD	600,000000	

Maintenance Work Order

BDB2019-08004	B1149 BOP Control Unit / Yearly - ET	6. Filed

Work Instruction

Safety: Ensure that Job Hazard Analysis is in place, has been reviewed, and is approved to proceed. Implement all safety precautions such as Permit to Work, Energy Isolation Certificate (lock out/tag out), and any notifications required to begin work.

1. Check with OIM and Toolpusher when planning the job.
2. Open up a PTW and obtain an isolation certificate for working on the BOP control unit
3. Complete a JHA and hold a PJSM with all personnel involved.
4. Open up the EXd panel and check all wiring is tidy, with no damage and no signs of burring, check all connections are tight.
5. Using the hydraulic hand pump and gauge start testing each pressure switch, between purple and blue should be N/C, between purple and red should be N/O, Using the pump slowly increase the pressure until the NO contact closes - record the value which it closes - slowly release the pressure and again record the pressure. Check previous readings for comparison and the settings.
6. Check all transducers - connect the hydraulic hand pump with gauge increase the pressure and check the pressure at 4mA, 8mA, 12mA, 16mA and 20mA using a process meter, and record. Check previous readings for comparison and the settings.
7. Check flow switches are working ok.
8. Deisolate and power up the unit
9. Take a backup of the current program running in the PLC and update the register keeping copies of the program on the back up hard drive.
10. Close the panel and tidy up the area
11. Record all work activities/findings in the Work Order Notes in AMOS.

Segurança: Assegure-se de que a Análise de Perigo do Trabalho esteja em vigor, tenha sido revisada e aprovada para prosseguir. Implemente todas as precauções de segurança, como Permitir para Trabalhar, Certificado de Isolamento de Energia (lock out / tag out) e quaisquer notificações necessárias para iniciar o trabalho.

1. Verifique com o OIM e o Toolpusher ao planejar o trabalho.
2. Abra um PTW e obtenha um certificado de isolamento para trabalhar na unidade de controle do BOP
3. Complete um JHA e mantenha um PJSM com todo o pessoal envolvido.
4. Abra o painel EXd e verifique se toda a fiação está arrumada, sem danos e sem sinais de rebarbas, verifique se todas as conexões estão apertadas.
5. Usando a bomba manual hidráulica e manômetro teste cada interruptor de pressão, entre roxo e azul deve ser N / C, entre roxo e vermelho deve ser N / O, usando a bomba lentamente aumentar a pressão até que o contato NO fecha - gravar o valor que fecha - libere lentamente a pressão e novamente registre a pressão que o interruptor abre e registra. Verifique as leituras anteriores para comparação e as configurações.
6. Verifique todos os transdutores - conecte a bomba hidráulica com o manômetro aumente a pressão e verifique a pressão em 4mA, 8mA, 12mA, 16mA e 20mA usando um medidor de processo, e registre. Verifique as leituras anteriores para comparação e as configurações.
7. Verifique se os interruptores de fluxo estão funcionando corretamente.
8. Desisole e ligue a unidade
9. Faça um backup do atual programa em execução no CP e atualize o registro mantendo cópias do programa no disco rígido de backup.
10. Feche o painel e arrume a área
11. Registre todas as atividades / descobertas de trabalho nas Notas da Ordem de Serviço no AMOS.

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Maintenance Plan Notes

Work Orders Notes

Checked all presure transducers using hand pump - found 1 bad pressure switch - requires to be replaced - created new W/O BDB2020-03984
Checked all connections all ok
Cleaned Ex flame paths with emery cloth and used non conductive silicon to seal.
Replaced broken earth strap on PLC enclosure due to old one corroded away.
Cleaned the panels inside and out best i could
Replaced all silica gel packs from inside the panels and dated them.
Checked the flow meter and looks ok unable to calibrate or check as didnt run the system

Maintenance Work Order

BDB2020-03984 **ET - Replace pressure switch on BOP Control unit** **6. Filed**

General			Planning	
Work Instruction			*Due Date*	20/06/2020
Function	332	BOP Control Systems	*Est. Duration*	0
Asset			*Planned Start*	20/06/2020
Serial Number			*CBM Status*	Normal
Form			*Port Call*	
Completed	20/06/2020		*Arrival Date*	

Work Classification			
Maint. Type	Corrective Maintenance	*Unexpected*	NO
Maint. Class	Electronics Tech	*Maint. Criteria*	At Sea
WR / Failure			
Priority			

Team

Type	*Description*	*Est. Hours*	*Estimated Cost*		*Responsible*
INTERNAL	Sr Electronics Technician	2,00	USD	100,000000	

Work Orders Notes

During PM found 1 pressure switch wouldnt activate at the required pressue. Replaced with new from stores BD201327 - Calibrated to close at 750 psi and open at 500psi

Maintenance Work Order

BDB2019-08199	Drill / Marine - Koomey mechanical treatment and UTG of the HP piping	6. Filed

General			Planning	
Work Instruction			*Due Date*	31/03/2020
Function	332100001	Accumulator Unit, BOP	*Est. Duration*	0
Asset	33210201-01	BOP Control System, Accumulator Skid	*Planned Start*	04/11/2019
Serial Number	6331		*CBM Status*	Normal
Form			*Port Call*	
Completed	18/02/2020		*Arrival Date*	

Work Classification			
Maint. Type	Corrective Maintenance	*Unexpected*	NO
Maint. Class	Drilling	*Maint. Criteria*	At Sea
WR / Failure			
Priority			

Team

Type	*Description*	*Est. Hours*	*Estimated Cost*		*Responsible*
INTERNAL	Toolpusher	2,00	USD	250,000000	
INTERNAL	Painter	72,00	USD	3600,000000	
EXTERNAL	OES Servicos e Equipamentos de	16,00	USD	4000,000000	

Work Orders Notes

Remove corrosion from HP piping, HP flanges, HP valves, triplex pumps, regulators USE ONLY SCRAPER AND WIRE BRUSH NO POWER TOOLS ALLOWED TO USE Perform UTG of the HP piping by OES Paint all parts red color
Clean exposed accumulators and protect with koomey fluid and denso tape top caps of the accumulators to prevent rust Attached photo
All work has been completed.

Maintenance Work Order

BDB2020-04415	EOW MECH- Service of the BOP Control Unit	6. Filed

General			Planning	
Work Instruction			*Due Date*	31/07/2021
Function	332100001	Accumulator Unit, BOP	*Est. Duration*	30,00
Asset	33210201-01	BOP Control System, Accumulator Skid	*Planned Start*	11/07/2020
Serial Number	6331		*CBM Status*	Normal
Form			*Port Call*	
Completed	23/12/2020		*Arrival Date*	

Work Classification

Maint. Type	Corrective Maintenance	*Unexpected*	NO
Maint. Class	Mechanical	*Maint. Criteria*	At Sea
WR / Failure			
Priority			

Team

Type	*Description*	*Est. Hours*	*Estimated Cost*		*Responsible*
INTERNAL	Mechanic Supervisor	12,00	USD	1500,000000	
INTERNAL	Mechanic	12,00	USD	600,000000	
INTERNAL	Sr Mechanic	15,00	USD	1500,000000	✓

Work Orders Notes

Electrical Systems
- Electrical cables needs a better arrangement from derrick JB

Trolley Assembly
- Corrosion requires treatment and painting
- Systems shall be serviced
- Hydraulic Hoses and fittings shall be replaced
- Drag chain with corroded points

Equipment work scope is being discussed by supervisors and an operational window will be required to provide corrective actions.

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June 26, 2020
The equipment was removed and sent to town for a complete overhaul.
The hydraulic filter was removed and element replaced.
The block manifold was replaced by a new one.
Some hydraulic fittings with signs of corrosion were replaced on hydraulic lines for OAC.

We are waiting OAC arrive to install back on place.

There is a EOW WO open for the overhaul of OAC
WO# BDB 2020-04076

17 – DEC – 2020
RMS – A. BURKE
DUE TO RIGDOWN OPERATIONS AND REMOVAL OF EQUIPMENT OR ISOLATION, THIS PM HAS BEEN SUSPENDED UNTIL RIG RE-ACTIVATION. D-MOC 91 HAS BEEN CREATED TO COVER THE SUSPENSIONS WITH AN HRA.