

Worksheet

HAZOP-PC 1.00

Company: DOW CHEMICAL CO.
Process: HDPE - POLY B

Nod : 20
Pag : 1

Node: 20 DR-2007 MECHANICAL SEAL					
Parameter: Flow			Intention: 10 GPH H2O		
GUIDEWORD	DEVIATION	POSSIBLE CAUSES	CONSEQUENCES	RECOMMENDATIONS	BY
No	No Flow	INSTRUMENT FAILURE MISOPERATION LOSS OF PUMPS PLUGGED LINE REGULATOR FAILURE	DAMAGE SEAL ENVIRONMENTAL RELEASE O2 INTO VENT SYSTEM SHUT DOWN TRAIN	EVALUATE WATER FLOW INDICATION	*
				EVALUATE WATER STRAINER	GH
				EVALUATE AUTO START OF SPARE CONDENSATE PUMP	RF
				GAS DETECTOR AT SEAL	*
				EVALUATE CONTINUOUS N2 PURGE TO SEAL CAVITY	GH
				EVALUATE WATER FLOW IN BOTTOM/ OUT TOP	GH
				EVALUATE SOURCE OF WATER	GH/ RF

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Node: 20 DR-2007 MECHANICAL SEAL					
Parameter: Temperature			Intention: 5-<100 DEG C WATER		
GUIDEWORD	DEVIATION	POSSIBLE CAUSES	CONSEQUENCES	RECOMMENDATIONS	BY
More	Higher Temp	SEE NO FLOW	SEE NO FLOW WATER FLASHING IN SEAL	CHECK TIE IN	GH
		WRONG TIE IN POINT		EVALUATE SEAL SPECIFICATIONS/ TEMPERATURE LIMITS	GH
Less	Lower Temp	LOW AMBIENT TEMPERATURE	SEE NO FLOW	ESTABLISH FREEZE POLICY	DS
				FOLLOW FREEZE POLICY	GH

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Node: 20 DR-2007 MECHANICAL SEAL					
Parameter: Pressure			Intention: 10 PSI ABOVE DRYER		
GUIDEWORD	DEVIATION	POSSIBLE CAUSES	CONSEQUENCES	RECOMMENDATIONS	BY
More	Higher Pressure	BACKPRESS WATER REGULATOR FAILURE MISOPERATION FREEZING WEATHER	DESTROY SEAL SEE NO FLOW INCREASE SEAL WEAR	CHECK REGULATOR SETTING	GH
				CHECK SEAL DESIGN PRESSURE	GH
				TRAINING	RF
Less	Lower Pressure	REGULATOR FAILURE LOSS OF WATER PUMP	EXCESS SEAL LEAKAGE	CHECK SEAL SPRING TENSION	GH
				CHECK MINIMUM WATER PRESS REQ'D	GH

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Company: DOW CHEMICAL CO.
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Node: 20 DR-2007 MECHANICAL SEAL					
Parameter: Service Failure			Intention: MAXIMIZE SEAL LIFE		
GUIDEWORD	DEVIATION	POSSIBLE CAUSES	CONSEQUENCES	RECOMMENDATIONS	BY
More	More Service Failure	HIGH VIBRATION	HIGH MAIN BUDGET	EVALUATE VIBR MONITORING	GD/DS
		BEARING FAILURE	PLANT SHUTDOWN		
		SHAFT FAILURE	HYDROCARBON	EVALUATE AMP MONITORING	*
		WAX BUILDUP	RELEASE (WILL ALSO LOSE PACKING)		
		BROKEN BLADE		EVALUATE CAIN JULY 90 FAILURE	GH
		MISALIGNMENT		EVALUATE SEAL N2 TRIP BASED ON MECH FAILURE/ PROBLEM SIGNAL/ SEAL GAS RELEASE	KW
		DRIVE SYSTEM FAILURE			
		LACK OF LUBRICATION		EVALUATE SHUTDOWN LOGIC	RF