



## VALVE OVERHAUL ITP

PROJECT		CONTRACTOR		REVISION NO.	DATE	PREPARED			CHECKED			APPROVED
COLLIE POWER STATION 2020 SHUTDOWN				0	29/07/2019	MAYUR SANGHANI			NITIN AGGARWAL			MARK PENSINI
EQUIPMENT I.D./TAG NO.		SERIAL NUMBER		VALVE TYPE	DESCRIPTION	SIZE			PRESSURE CLASS			ACTUATOR
11LAB65AA001		VD6A93-001		KOSO CONTROL VLV. 100D	ECONOMISER INLET	10"X7"			2500			KOSO PISTON PNEUMATIC 6360LA
Item No.	Activity	Characteristics to be Verified	Controlling Procedure/Instruction	Documents	SIGN-OFF						Comments	
					CONTRACTOR			TWPS				
					Task	Name	Date	Task	Name	Date		

1.0 VALVE IDENTIFICATION AND AREA SET UP												
1.1	Fully review Scope of Work, ITP and Procedure for the valve.	Ensure the correct procedure is followed, PPE is worn at all times, the work pack is filled correctly. Ensure tools and hard hats are secured using Lanyards and Chin straps respectively to avoid dropped objects at all times.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works	R				N/A	N/A	N/A	
1.2	Obtain work permit, Identify the valve, verify the valve KKS number against permit, work pack, ITP, procedure and lock on to the permit.	Verify that the valve details listed on the permit, ITP, Procedure and work pack match the valve.  Ensure all personnel working on the valve have signed and locked on to the permit.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack	R				N/A	N/A	N/A	

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1.3	Inspect the work area and surroundings and prepare the JHA.	Identify and list the hazards, associated risks and the controls required to minimise the likelihood of the hazard to cause harm.  All personnel working on the valve/inspecting the valve must sign on to the JHA prior to commencing any work.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit	R			N/A	N/A	N/A	
1.4	Demarcate the work area using caution/danger tape as required and attach information tags on the tapes at entry points.	Establish an exclusion zone to prevent unauthorised entry to the work area. Name and contact of the person in control of the work area must be detailed on the information tags.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack	R			N/A	N/A	N/A	

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1.5	Set up the work area by laying drop sheets on the floor, wire mesh on the railings and complete the Dropped Object Checklist.	Verify that there are no gapes in the drop sheets or wire mesh to ensure possibility of dropped objects is minimised.  Other than the mandatory PPE, task appropriate PPE must be worn by all personnel working/inspecting the valve.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			R			
1.6	Place the required tools and equipment in plastic tubs or tool boxes on the drop sheets away from the edges.	Verify that there is minimal possibility of tools, equipment, fasteners and other items falling out of the tubs/tool boxes.  Ensure the tubs/tool boxes as placed away from the edges and are not blocking/hindering access to the valve.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	

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		Ensure fasteners placed in plastic bags inside the tubs to minimise misplacement.									
1.7	Check that the valve, actuator and instruments have been isolated.	Verify that the valve and associated instruments are isolated. Where possibly ensure that there is no trapped pressure in the line.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	
1.8	Note and mark the position of the valve.	Ensure that the as found position of the valve is noted and marked as the valve is to be left in the as found position after overhaul.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	

2.0	VALVE STRIP DOWN & ASSESSMENT											
2.1	Disengage the valve stem from the actuator stem and remove actuator and other instruments.	Ensure that the valve stem is adequately supported to prevent it from dropping on the	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA	R				N/A	N/A	N/A	

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		<p>seat when the stems are disengaged.</p> <p>Ensure that the actuator is secured and there is sufficient tension on the slings to prevent uncontrolled movement.</p> <p>Ensure that the connections of tubing, wiring and orientation of the actuator/instruments are noted and photographs are taken prior to disassembly.</p>		Dropped object checklist							
2.2	Remove the gland packing and disassemble the bonnets and place the fasteners in a plastic box.	<p>Ensure minimal scoring the stem and packing bore when removing packing.</p> <p>Ensure the bonnet is lifted vertically till clear of the stem to avoid damaging the stem.</p>	11LAB65AA001 Valve Overhaul Procedure	<p>Scope of Works</p> <p>Work permit</p> <p>Work pack</p> <p>JHA</p> <p>Dropped object checklist</p>	R			N/A	N/A	N/A	

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2.3	Remove the plug & stem, disk stack and seat from the valve body.	Ensure care is taken when removing the plug & stem, disk stack and seat to minimise possibility of damage.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	
2.4	Take photos of the components as found and clean components to remove process build up.	Ensure photos are taken in the as found condition and after cleaning especially areas that have sustained damage.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	
2.5	Assess and note the condition of the plug & stem, disk stack and seat after cleaning and take photos.	Assessment of the components must only be carried out after cleaning to get a clear indication on the extent of damage.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	H			I			Assessment of the components and refurbishment plan to be discussed with Pro-Mech Engineering/TWPS

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3.0	REFURBISH/REPLACE COMPONENTS											
3.1	Pressure clean the disc stack to remove any scales / deposits.	Check for signs of damage or wear on the disk stack.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				I			Quality inspections to be carried out by Pro-Mech Engineering/TWPS
3.2	Polish the valve stem, lap plug and seat. Machine if required. If the components are beyond refurbishment, replace with new free-issued spares. Take photos of the components after refurbishment and prior to installation.	Ensure that the stem and packing bore are score free. Ensure that the dimensions of the stem, plug and seat are within tolerance as specified in the procedure/IOM.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				I			Quality inspections to be carried out by Pro-Mech Engineering/TWPS
3.3	Wire brush and clean all studs and nuts. Take photos after cleaning and prior to installation.	Ensure the studs and nuts are free from rust/dirt/anti-seize.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				N/A	N/A	N/A	

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3.4	Clean the valve body internally including the seat pocket and all other non-replaceable parts of the valve such as bonnet, gland flange, follower, packing bore etc Take photos after cleaning and prior to assembly.	Ensure that the valve body and seat pocket are clean.  Ensure that the gland flange and packing follower are cleaned and are free of high spots that my score the stem.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			I			Quality inspections to be carried out by Pro-Mech Engineering/TWPS
3.5	Replace all soft goods such as balance seal, gaskets and stem packing. Take photos prior to installation.	Verify that the softs goods are free from damage and are of the correct dimensions.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	
<b>4.0</b>	<b>RE-ASSEMBLE VALVE</b>										
4.1	Assemble the valve with refurbished/new trim parts and new soft goods.	Verify that the refurbished components are score free.  If replacement spares are used, verify that the components are damage free.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	

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4.2	Install the bonnet, gland packing, packing flower and gland flange.	Ensure correct packing is installed in the correct arrangement as shown I the valve GA. Ensure that the bonnet and gland flange studs are correctly torqued. Refer to the procedure/IOM for torque values.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				N/A	N/A	N/A	
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<b>5.0</b>	<b>ASSESS ACTUATOR AND ACCESSORIES</b>											
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5.1	Strip the actuator and assess the stem, piston, cylinder, covers and assembly rods.	Ensure photos are taken in the as found condition and after cleaning especially areas that have sustained damage.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				I			Assessment of the components and refurbishment plan to be discussed with Pro-Mech Engineering.
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5.2	Assess the condition of the accessories including pressure gauges & filter regulators.	Assessment of the components must only be carried out after cleaning to get a clear indication on the extent of damage.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				I			Assessment of the components and refurbishment plan to be discussed with Pro-Mech Engineering.
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6.0 OVERHAUL ACTUATOR AND ACCESSORIES											
6.1	Clean and polish the stem, piston, and cylinder internals. Clean the assembly rods and actuator cylinder externally.	Ensure that the stem, piston, and cylinder internals are score free. Ensure the assembly rods are free from rust/dirt/anti-seize.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				I		Quality inspections to be carried out by Pro-Mech Engineering.
6.2	Refurbish/replace accessories as required.	Ensure refurbished accessories are in good working condition. Ensure any accessories replaced with new is damage free and compatible.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	
6.2	Assemble the actuator with refurbished components and new soft goods.	Verify that the refurbished components are score free. If replacement spares are used, verify that the components are damage free.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	

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7.0	<b>ASSEMBLE VALVE AND ACTUATOR</b>										
7.1	Assemble the valve and actuator with all required accessories.	Ensure that the orientation of the actuator and accessories are correct. Verify the orientation with the as found photographs and notes.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R			N/A	N/A	N/A	
8.0	<b>FUNCTION TEST AND RE-PROFILE VALVE &amp; ACTUATOR ASSEMBLY</b>										
8.1	Function test the valve after assembly.	Verify that valve strokes smoothly.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	H			W			
8.2	Re-profile the valve using control valve profiler and leave the valve in the as found position.	Ensure that valve strokes smoothly and that the limits are set correctly. Verify the position of the valve with the as found marking/photos.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	H			W			

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9.0 TAGGING, FINAL FUNCTION TEST, & HANDOVER												
9.1	Tag the valve with valve information and date of overhaul. Take photos of the valve.		11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit Work pack JHA Dropped object checklist	R				N/A	N/A	N/A	
9.2	Carry out final function test. (Final function test can only be carried out once electrical connections have been restored to the control room).	Verify that the signal received by the control room matches the actual position of the valve.		Scope of Works Work permit	H				W			
9.3	Clean the work area, remove all tools, equipment, barricading and drop sheets.		11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit JHA Dropped object checklist	R				N/A	N/A	N/A	
9.4	Upon successful completion of Final function test, handover the valve to TWPS.	Ensure all personnel have signed off and removed the locks from the permit.	11LAB65AA001 Valve Overhaul Procedure	Scope of Works Work permit	R				N/A	N/A	N/A	

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