	VEDANTA LIMITED – VALUE ADDED BUSINESS	Document No:	VL/IMS/PID1/INST/WI/12
	INTEGRATED MANAGEMENT SYSTEM	Revision Date:	05/01/2022
	Work Instructions for Checking of Furnace Top Equipment's	Revision No:	07
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CHECKING OF FURNACE TOP EQUIPMENTS

Objective: Procedure for checking of furnace top equipment's like transmitters, thermocouples, limit switches, proximity sensors, cameras etc.

Scope: This procedure applies to transmitters, Thermocouples, Limit switches and Proximity sensors mounted on Furnace Top Only.

Reference: Operating manual for transmitters, LS, Proximity Switch & Standard reference chart of Thermocouple.

Standard used:

- 1) Pressure calibrator: FLUKE 729-300G
- 2) Pressure calibrator: FLUKE 719PRO-30G
- 3) Multi-Function Calibrator: FLUKE 725

Performance Criteria: Accuracy of transmitters/thermocouples/limit switches/proximity sensors

Reference: RISK/INST/09, RISK/INST/14 & RISK/INST/17

Aspect for the Activity: Waste generation

Identification of Hazards:

Chemical: CO gas poisoning, Dust

Mechanical: Trip & Fall


Physical: High temperature, High pressure, Hot Surface

Hazard due to Human Behaviour/Human error: Not adhering to WI/ PPE, Alcoholism, touching thermocouple tip with bare hands, Use on non-certified tools/equipment.

Responsibility: Sr. Engineer Instrumentation/Associate / Inst Technician

PROCEDURE:

1. Before starting the job ensure that furnace is under shutdown and all gas lines are purged with steam. Use PPE dust mask, CO monitor, hand gloves and walkie talkie for communication purpose. Also don't climb on conveyors/rotating equipment's while working.
2. Inform production about the job being carried out and take work permit if required.
3. Check if CO gas levels are within safe limits.
4. If CO gas levels are not met do not carry out the job till safe levels are reached.
5. Do not touch any hot areas.
6. Check Transmitters, impulse Lines and, mV output of thermocouples and verify the corresponding values from control room.

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7. Check all the fittings, replace the same if worn out
8. Connect back impulse lines to transmitter and check if all valves are in their proper position.
9. Give clearance to production after the job is over by clearing the work permit.

CHECKING OF LIMIT SWITCHES/PROXIMITY SWITCHES

1. Check if the furnace is under shutdown and all gas lines are purged with steam.
2. Use PPE dust mask and CO monitor.
3. Check if shutdown protocol has been taken for any top-charging device.
4. Before carrying out work on limit switches/Proximity switches of top devices get bell operation clearance from production.
5. Ensure reliable line of communication between PLC control room operator and furnace top.
6. Ensure that there is electrical/mechanical clearance for top device operation.
7. Check on CO monitor for safe levels of CO gas.
8. If CO gas are not within safe levels do not carry out the job till gas reaches safe level.
9. Check that there is no person standing around the bell during opening, also while taking trails of lower bell upper bell, take clearance from mechanical & production & also don't allow any body to stand in front/nearby area of top hedge (as due to bell operations some it causes positive pressure & heat/dust to come out from there).
10. Perform check limit/Proximity switch by operating bells.
11. Service the limit/Proximity switches by applying AC90.
12. Replace the limit/Proximity switches if it is giving problem repetitively.
13. After carrying out the work inform production for clearance.

Prepared By: Associate Manager– Electrical & Instrumentation PID1	Reviewed & Issued By: Management Representative	Approved By: Head – Electrical & Instrumentation PID1
Signature:	Signature:	Signature:
Date: 05/01/2022	Date: 05/01/2022	Date: 05/01/2022