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	INTEGRATED MANAGEMENT SYSTEM	Revision Date:	05/01/2022
	Work Instructions to control leakage of gas through Air Conditioners and water Cooler, Refilling of Gas in AC's & Routine Checks	Revision No:	06
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TO CONTROL LEAKAGE OF GAS THROUGH AIR CONDITIONERS AND WATER

COOLERS, REFILLING OF GAS IN ACS & ROUTINE CHECKS

Objective: To reduce the aspect of gas leakage through Air Conditioners and Water Coolers & AC maintenance.

Scope: Blast furnace 1 and 2, Power Plant, Projects, Administration, Canteen, electrical, instrumentation, Mechanical w/s, dispatch office, Raw Material office, Lab, EDP, Dispensary, HBS control rooms, Rest rooms.

Performance Criteria: Avoid leakage of gas through air conditioners and water Coolers.

Reference: RISK/INST/15, RISK/INST/17, RISK/INST/19 & WI/ELECT/21, SP-44/H

Aspect for the Activity: Waste generation, Dust spreading, Water consumption & Gas leakage.

Identification of Hazards:

Physical: Pressure, Honeybee/snake bite, Noise, Electric Shock

Mechanical: Impact & falling from height, Trip & Fall

Chemical: CO Gas poisoning, Vapor, Steam, Dust, Graphite, Hot Water


Ergonomics: Insufficient work practices

Hazard due to Human Behavior/Human error: Not adhering to WI/ PPE, Alcoholism, Use on non-certified tools/equipment.

Responsibility: Sr. Engineer Instrumentation/Associate / Inst Technician

Procedure:

1. Check for abnormal increase in grill and water temperature.
2. Switch off power supply MCB for maintenance checkup.
3. Remove the supply plug top from the socket.
4. Put a board of “work in progress, do not switch on the power”.
5. If testing is to be done with N2, put LOTO on MCB.
6. Check for ice formation on Compressor input and output lines.
7. Clean indoor and outdoor unit of Air Conditioner.
8. Inspect all joints periodically and tighten leaky joints.
9. In case of doubt in gas leakage, check the pressure at suction line near outdoor unit. If it is around 45 psi or less than that leakage is confirmed. Then check the standing pressure.
10. Standing pressure is the pressure at the same point when AC is in OFF condition. If the standing pressure is around 120-150 psi, it is possible to

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check the leakage point with soap oil. If the standing pressure is below 120 psi, then drain the gas fully and refill with N2 and check for leakage with soap oil.

11. Check for the leakage point in condenser coil, area where brazing is done, Flare nut, Indoor coil and suction line pin where in leakage is more common in these places.
12. Once leakage is identified, drain the gas fully and arrest the leakage by brazing. Fill the nitrogen gas up to 280-300psi (app) and keep it on hold for 24 hrs to cross check the leakage is arrested or not. Unit should not be switched on (Plug should be removed & Work in progress tag should be applied on AC socket) when N2 is filled as same may cause explosion.
13. If there is no pressure drop, it means leakage is arrested. Once leakage is arrested fully, vacuumize the unit and refill the R22 gas up to 65-70psi (suction line pressure in running condition).
14. Suction pressure is around 65-70 psi and standing pressure is around 220-250 psi for normal operation of AC.
15. Once the job is completed remove the board and put on the power supply, check the operation of Air conditioner system for smooth running.

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