



## DALMIA CEMENT (B) LIMITED – DALMIAPURAM



### PRODUCTION DEPARTMENT

Issue No. 02	Rev. No: 01	Effective Date: 22.05.2015	SOP/PROD/10
Issued By: S & P		Approved By: Head – Production	
SOP FOR Solid fuel Transportation, Grinding & storage of Pulverised fuel - KHD Coal Mill.			

**SCOPE** : Solid fuel Transportation, Grinding & storage of Pulverized fuel - KHD Coal Mill.

**RESPONSIBILITY** : CCR executive.

**Accountability** : Section Head – Pyro.

**PPE:**

1. Safety goggles,
2. Safety helmet,
3. Safety shoe,
4. Mask,
5. Cotton Gloves.
6. Safety harness(Full body)

**TOOLS:**

1. Poking bar,
2. Hammer.
3. Showel

**Hazard:**

**Risks associated:**

Fall from height,

Fall of tools;

Hit of Hammer in hand;

**Mitigating Measures**

Use of safety harness

Carry the tools in tool bags

Trained to be engaged

**Procedure:**

- Get clearance from Maintenance if coal mill had been stopped for long stoppage.
- Get the clearance from KHD Coal Belt and KHD Coal Mill Hopper Machinery Attendant in accordance with Work Instruction for starting Coal Transport (Group 550 – including primary & secondary crusher & screen) & ensure that the clearance is obtained as per the same.



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- Start the group 550 and ensure that all the drives are running. And inform Coal Mill Hopper M/A, Coal Belt M/A to start feeding of solid fuel as per WI- DW14 & DW15.
- Check and ensure from Coal Mill Hopper M/A that Raw Coal and other fuel (DOB, Lignite etc. if any) are adequately available for starting the Coal Mill.
- Get the clearance from Coal Mill M/A in accordance with Work Instruction for starting the Coal Mill plant and ensure that clearance is obtained as per Work Instruction.
- Inform the Switch Board or electrical charge hand or shift supervisor about starting of coal mill.
- Check and ensure that recirculation is in closed position.
- Ensure that KHD kiln is running and B/F panel is ON depending upon the requirement.
- Select the bin loading group with either to Bin-1/ Bin-2 / Bin-3 depending upon the coal bin level.
- Start the coal dust storage bin loading group 500 and ensure that all drives are running.
- When operating with B/F, after checking the B/F OK signal, enable the B/F and ensure that the B/F inlet and outlet dampers are opened and “B/F systems healthy” signal is displayed.
- Start dust conveying group 404 and ensure that all the drives are running.
- Start coal mill fan and waste gas fan group 501 and ensure that coal mill fan and waste gas fan are started and running normally.
- Open the coal mill fan inlet damper slowly and keep 45-55% damper opening. Keep the classifier louvers at about 35% opening.
- Start Coal Mill mix auxiliaries (group No. 502) and ensure that all the drives are running. .
- Draw the hot gas by opening the waste gas fan inlet dampers one by one slowly. Watch the rise in mill outlet temperature and decrease in %O<sub>2</sub> before Mill Fan and keep Mill Fan Inlet draught around 400-600 mm wg.



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- When % O<sub>2</sub> before Coal Mill Fan is below 15% start Coal Mill and Mill Feed group (Group No.503) and ensure that all the drives are running.
- Set the feed rate for BSF1,2 & 3 depending on the fuel mix required and available.
- Operate the Coal Mill as per process requirement by regulating hot air volume mill feed rate and classifier louvers position. The following operating parameters are suggested for optimised production.

1. Mill inlet draught	= 40 - 100 mm WG
2. Mill Outlet draught	= 160 - 350 mm WG
3. Mill Outlet temperature	= 75 - 95 o C
4. % O <sub>2</sub> before Coal Mill Fan	= 6% - 15%
5. Coal B/F inlet temperature	= < 95 o C
- If parameter goes out of range take appropriate action to bring it back to the optimum range.
- Adjust the classifier louvers position to maintain fineness of coal dust residue below 20% on 90 micron sieve.
- Divert the recirculation air after Coal Mill Fan to Mill inlet to maintain air volume or process parameters when running with B/F
- When the B/F inlet temperature goes beyond 105 oC if the CO<sub>2</sub> is not purged ON automatically to the B/F, ask the Coal Mill M/A to purge CO<sub>2</sub> manually by pulling the wire.
- Operate the Coal Mill at optimum production level and ensure that the parameters are recorded automatically and monitor the parameters every hour in the coal mill log sheet. In case of any problem in the auto recording inform the concerned engineer and record manually in the log sheet until the problem is corrected.
- When the Mill is running in stable operating condition, put the Mill operation in fuzzy mode after entering the present operating parameters in the fuzzy control PC. In case of non availability of the fuzzy control system, operate the Plant manually. When running in fuzzy mode observe the performance of the Mill and if found any abnormality changeover to manual mode and inform concerned person to look into the problem in fuzzy control.
- Get the Laboratory information as reported and record the same in the Laboratory Report and take corrective action to maintain the operating parameters in the suggested range.



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- Record stop and starting time of the mill with the probable reasons in the stoppage report.
- Record the fault details of equipments in fault register and inform the same to the concerned Supervisor in shift.
- Change the Coal dust loading to other bin as required or when the bin level is full i.e. 53 MT.
- Check and ensure that work instructions to Coal Mill M/A are carried out properly and take corrective steps if deviations are observed.
- Ensure that the initial and final counter readings of the coal Belt scale feeder are recorded automatically in the Log sheet in each shift. In case of any problem, record the counter readings manually till the problem in auto recording is rectified.
- Coal Mill plant will be stopped due to any one of the following reasons.
  - 1. Preventive Maintenance
  - 2. Breakdown
  - 3. Power failure / Power change
  - 4. Planned Maintenance
  - 5. Grinding Media charging etc.
- Restart the plant after getting clearance from maintenance or other related personnel.
- Monitor the Mill load and mill sound level charge make up grinding media of 1 or 2 MT at regular interval based on wear and tear found out by previous charge and unloading of grinding media as & when required to maintain sufficient coal dust stock in the bin.
- **PROCEDURE FOR STOPPAGE KHD COAL MILL PLANT.**
- Stop the Mill Feed Belt Scale Feeders.
- Stop the Mill after 5 minutes from feed stop.
- Direct the hot gas through GCT.



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- Open the VRM-II ESP Fan inlet damper or increase the ESP Fan speed and close the waste gas fan inlet dampers simultaneously and ensure negative pressure is maintained after PH Fan.
- Stop Coal Mill Fan and WG Fan group 501 & 404.
- Stop Coal Mill auxiliaries group 502 after 5-10 minutes.
- Stop Coal dust conveyor group 500.
- Close recirculation dampers to Zero position.

<b>Job Safety Analysis</b>	Job: Belt Discharge chute cleaning	Date: 01 – 07 - 2013	Analysis by: Section Incharge	Reviewed by: Section Head
Title of employee doing job:	Supervisor: Sec.Incharge	Department: Coal Mill	Section: All belt conveyers	Approved by: Department Head
Req'd/recommended PPE:				
<b>Sequence of Basic Job Steps</b>	<b>Potential Hazards</b>	<b>Recommended Safe Job Procedure</b>	<b>What Could Go Wrong</b>	<b>Corrective Action</b>



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Cleaning of the Coating at belt discharge chute	pipe hit to the person	Hold the Pipe properly, if there any possible tie it one end.	Pipe may hit the person while cleaning the chute.	Hazards to be explain to the people who are working in that area by safety PP talk, tool box talk.
Inspecting the chute	Fall of the person	While inspecting the chute use safety belt and make proper approach to view the chute.	Person may fall on to the chute due to slip.	Use Proper safety belt to inspect the chute.
Cleaning spillage in belt conveyor bottom	Showel may entrapped into conveyor	Ensure showel should not touch the conveyor while cleaning	Person may entrapped into conveyor if he hold strongly	Stop the conveyor and start the conveyor after clean the spillage material
Fine coal spillage cleaning	Burn injury while handling fine coal	Use asphestos gloves	Fine coal dust may entrapped through gloves / shoes gaps	Spray water over the fine coal dust and then clean that with showel

#### Emergency Shut- off:

1. In case of belt is moving, Emergency pull chord switch should be activated by the person.
2. If body injury is there, First aid will be given and inform to the Safety department or Call Emergency number 233/555/9865125176/9865177444.

#### Records/Annexure:

1. Refer Line clearance certificates.
2. JSA as enclosed below.

HOD PRODUCTION

HOD TECHNICAL