To
The presentation
on
ENHANCING POWER PLANT PRODUCTIVITY THROUGH COAL STOCK YARD MANAGEMENT
AT
RAMGUNDAM
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CHALLENGES IN COAL STOCK PILE MANAGEMENT.

- Spontaneous combustion
- Sliding of coal on to stacker reclamer rails
- Wet coal
- First in first out
- Keeping the coal always available in reclaimable area.
- Keeping space ready always for stacking coal.
- Water drainage system
- Fire protection
- Monsoon preparation
- Height and orientation of stock pile
- Selective Bunkering
Spontaneous Ignition:

- Low temperature atmospheric oxidation due to the presence of methane.
- Exothermic oxidation causes the rise in temperature.
- Spontaneous oxidation.
- Decrease in Calorific value.
- Decrease in Carbon and Hydrogen content and increase of Oxygen %.
- Coal begins to burn on its own.
Selective Bunkering:

Feeding of coal to boiler bunkers of different units selectively as per quality requirement. Ramagundam, Stage 1 units require better quality coal, Stage 2 units can be fed next lower quality coal and stage 3 unit can be fed lowest quality coal for optimum generation.
GUIDE LINES FOR STOCK YARD MANAGEMENT

- Pile Orientation: the air should strike the width and not the length.
- Freshly mined coal should not be stacked over old coal, and old coal should be used.
- Stacking: layer by layer (each of 1-1.5M height) with compaction of each layer.
- Stacking in small heaps & compacted in trapezoidal shape.
- Height of stockpile should not be more than 9-10M.
- Before stacking, the coal should be visibly wet.
- Each stockpile should be segregated into various segments for first IN, first OUT practice.
- Stacking good quality and bad quality coals separately and use the stocks judiciously to achieve maximum generation.
ACHIEVEMENTS THROUGH STOCK PILE MANAGEMENT

- Managed uninterrupted coal supply of 65000MT only through reclaiming during zero coal receipt for 2 days.
- Managed whole rainy season without any SR track jams due to coal sliding.
- Managed whole rainy season with minimum chute jams due to wet coal handling.
- Managed (even during rainy season) without any generation loss due to chute jamming or non availability of coal in bunkers.
- Managed successfully recent coal crisis for continuously 35 days of SCCL strike.
PRACTICES BEING FOLLOWED AT RAMAGUNDAM

- Allocating fixed locations in stack yard for **different qualities of coal**
- Stacking small heaps of 1 – 1.5 mtrs. Height effective compaction.
- Simultaneous operation of Reclaiming and stacking with different SRs.

- Stacking layer by layer of 1 -1.5mtrs. and compaction with sufficient spray of water

- Top surface stacked coal was sloped out ward for rain water / spray water draining.
- Exposing all the bund walls, shifting the coal pile 1 – 1.5mtrs. away from bund wall.
PRACTICES BEING FOLLOWED AT RAMAGUNDAM (contd..)

- Periodical Coal stock verification through Bulk density
- Maintaining 2 to 3 STEP shaped coal pile throughout the length.
- Covering of 1.5 piles just before rainy season by LDPE (low density polythene sheet) with coal filled cement bags kept above to keep the LDPE sheets in position against wind. Manual Removal of foreign materials to avoid entanglement with bucket wheel and with chutes.
- Completely exposing the big and small drains (Inter connected through holes) and maintaining them dry always.
- Always trying to maintain maximum height of coal pile to 10 mtrs.

- Stacker Reclaimer equipment complete cleaning (Once in 3 days) and PM schedules.
PRACTICES BEING FOLLOWED AT RAMAGUNDAM (contd..)

- Fire quenching at the initial stage itself by piercing long fire quenching water pipe into the pile at valley portions.
- Carrying out more fire quenching operations with more frequency during March to June.
- Keeping available and operating all 6 dozers ie.
  1) Pushing the stacked coal in layers away from stacker reclaimer and compacting during high coal receipt periods.
  2) Pushing the compacted coal towards stacker reclaimer (and compacting) to keep ready for reclaiming during low coal receipt periods.
PRACTICES BEING FOLLOWED AT RAMAGUNDAM (contd..)

- Periodical Coal quality mapping for selective bunkering: 3 samples from each pile are analysed for quality. This data is used judiciously while stacking and reclaiming to feed required quality of coal to different units for selective bunkering.
- First in first out (FIFO)

- Daily interaction meeting of Operation (SCE), stock pile management team (part of operation), Dozer section, in the evening at coal yard to review day's progress and to schedule next day's activities.
- Very frequent coal yard visits by AGM (O&M) and GM of the station.
Complete stacking of imported coal in dedicated pile and reclaiming the total coal with blending within 2 days.

- Shifting of all the lighting towers (surrounded by coal) away from the pile to facilitate effective dozing and compaction.

- Adherence to Action plans and Road maps made for Stock yard management for normal activities and during monsoon.

- All the information regarding the details of stock pile (quality & quantity) is shared with all Operators of stacker reclaimer and dozers through the concerned engineers for having better awareness which gave good results.