

**Guide roller jamming problem in Apron feeder 1
of Coal handling plant**

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BACKGROUND: In AF (Apron feeder) 1 there are 136 guide rollers (arrangement: 17 X (3 +2 + 3)), on which the pans of the AF 1 move.

OBSERVATION:

Date	Time	Incident	Observation	Action Taken
21-01-05	8:30 am	The AF 1 stopped suddenly	Feeder motor was showing over load tripping. About 60 ton coal was loaded on the feeder (loading capacity 85 ton). No foreign material was found in the feeder, chain link & sprocket.	The drive was restarted.
22-01-05	3:30 pm	The AF 1 stopped suddenly	Feeder motor was showing over load tripping. There was no load (coal) in the feeder. Temperature of bearings of drive shaft and tail shaft were normal. (this indicates some friction or external force is acting on the AF 1 moving elements like links, guide rollers, sprocket etc.)	Feeder was started for a trial run

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OBSERVATION:

Date	Time	Incident	Observation	Action Taken
22-01-05	4:20 pm	Abnormal sound while AF 1 was in running condition (feeder run for 30 min)	<p>The AF 1 was examined in running condition—</p> <p>Following guide rollers were not rotating—</p> <p>Set 3/GR/2,4,5; Set 7/GR/2,4,6,7,8; Set 8/GR/1,3,4,5,8; Set 15/GR/3,7</p> <p>(this indicates lack of lubrication in GRs)</p> <p>Temperature of bearings and drive was normal.</p>	<p>Guide rollers were cleaned by brush and <i>bari</i> (iron rod)</p> <p>Manual greasing done in all the stopped guide rollers</p>
22-01-05	6:15 pm		<p>The level of abnormal sound was very low.</p> <p>The above rollers started rolling but not freely.</p>	<p>The m/c was taken in operation.</p> <p>An action plan was made for dismantling and proper cleaning of all the guide rollers of Set7 & 8 on S/D</p>

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OBSERVATION:

Date	Time	Incident	Observation	Action Taken
01-02-05	8:20 am		<p>After dismantling of set No. 7 & 8 it was found that fine coal dust was deposited inside the rollers. It was a thick & dry paste of coal and grease.</p> <p>It was observed in all the guide rollers that there was a gap between the roller-cover and the shaft and came out from the groove.</p> <p>The asbestos rope packing (felt) became hard with grease and coal dust.</p> <p>(this indicates that for coal handling the felt is not sufficient to stop the entry of fine coal dust inside the roller)</p>	<p>The guide rollers were cleaned with oil and reassembled</p> <p>New packing was fitted.</p> <p>All the rollers were remounted on the feeder bed</p>
01-02-05	5:30 pm		<p>All the guide rollers of Set No. 7 & 8 were running smoothly.</p> <p>(this indicates that the presence of coal dust inside the rollers is disturbing the lubrication of guide rollers)</p>	<p>MTG design was consulted for redesign of guide rollers or some modifications to stop the entry of coal fines inside the</p>

THANK YOU