

**REPORT ON ACCIDENT OF Mr.A.R.KHAN DUE TO FLASHOVER IN PDB-2  
INSTALLED AT BAGGING PLANT MCC ROOM ON 02.05.2014**



A committee comprising of following members was nominated by competent authority to investigate the cause of accident occurred at Bagging Plant MCC room in which Mr.Abdul Raffique Khan got trapped by Electrical Flashover.

- |                     |                              |
|---------------------|------------------------------|
| 1. Mr.A.K.Panda     | General Manager (Production) |
| 2. Mr.R.P.Gupta     | Dy.General Manager (F&S)     |
| 3. Mr.P.K.Mahapatra | Sr.Manager (GE)              |
| 4. Mr.S.K.Mohapatra | Dy.Manager (GE)              |

Committee visited site on 03.05.2014 to get the first hand information on the accident occurred to

- Investigate the reasons of flashover.
- Explore & recommend suitable measures to avoid re-occurrence of such type of incident in future.

#### **1.0 Detail of Incidence**

Mr. Abdul Raffique Khan was in A- Shift on 02.05.2014.He had to remove the connection of a single phase pedestal fan which was connected temporarily from the PDB-2 situated inside the MCC room during shutdown period while executing replacement job of new MCC.He was carrying out the disconnection job alone inside MCC room as no other shift technicians were available at that time. All of a sudden a flashover sound was heard from the MCC room & Mr.A.K.Verma, Electrical In-charge who had gone to check some other urgent job nearby slat area rushed into the room & found flashover occurred in the cubicle of PDB-2 in which Mr.A.R.Khan was working. He immediately isolated the incoming supply of PDB-2 which was taken from newly installed Bagging MCC Feeder No.17F3.Mr.A.R.Khan was found in conscious state & had burn injury on both the hands. Then Mr.A.K.Verma took Mr. Khan to plant dispensary to have some first aid / preliminary treatment.

## 2.0 Observation of Committee at site


The constituted committee members visited the accident site on dated 03.05.2014 Unit to identify the root cause of the flashover. Following points were observed.

- a) PDB-2 (Power Distribution Board) has one incoming feeder of 400 A rating, 1 no.200 A SFU (Switch Fuse Unit) type outgoing feeder & 5 nos.of SFU type outgoing feeders of 63 A each.
- b) There are 6 nos.of 4P MCB (Miniature Circuit Breaker) of 63 A each were installed in Feeder no.2F3 in two separate row.
- c) Incoming supply to all of the above MCB is taken from 200A SFU, Feeder No.1F3.
- d) At the time of visit bottom row damaged MCB found removed & all incoming and outgoing cables wrapped with PVC tapes (Photo attached)
- e) As reported by electrical in-charge temporary connection for the single phase pedestal fan was taken from one of the 4P MCB directly from the MCB outgoing and accident occurred during disconnection of fan.
- f) As reported the feeder no.1F3 from which power supply of all 6 nos.4P MCB is connected was in energized condition. The particular MCB in which fan was connected switched off before disconnection.
- g) Heavy deposit of carbon particles observed at incoming side of bottom row MCB indicating that flashover might have occurred in incoming side of particular MCB.
- h) As the MCC was replaced very recently, clear nomenclatures were not found on both sides (i.e. on MCC & PDB-2).
- i) Also proper marking of individual outgoing feeders in Feeder No.2F3 was not observed.
- j) Safety Hand gloves for use in 440 V voltage level was not found in MCC room.

## 3.0 Possible Reasons

From the observations found at site, the incident may be occurred due to following reasons.


- a) Safety permit system was not followed.

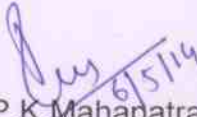
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- b) Non-isolation of the particular feeder 1F3 of PDB-2 before carrying out the disconnection job as there were live cables connected at the incoming side of each 6 nos.MCB.
- c) Single phase connection for the pedestal fan was taken directly from the outgoing of 4P MCB.
- d) The MCB contact might not have been properly isolated even after switching off of MCB due to malfunctioning of MCB and tools used for disconnection might have slipped & got contacted with body of the panel or with other phase.
- e) Critical power supply like supply for UPS is taken from one of the MCB installed in the top row and the person working might have thought not to switch off the complete supply to avoid interruption of power supply.
- f) Safety hand gloves not used.

#### **4.0 Recommendation by Committee**

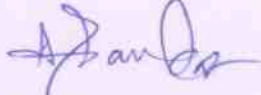
- a) Safety Permit for each & every job should be issued by an authorized person depending upon the voltage level in which job is to be carried out. If required a separate permit procedure for electrical isolations may be adopted with consent of all concerned.
- b) There should be two stages checking for proper & firm isolation of the feeder in which any maintenance/shutdown job is to be carried out.
- c) Use of safety gloves as per specified voltage levels in which job has to be carried out.
- d) Temporary connections for fans/welding machines etc. may be provided from an earmarked PDB & to be ensured that no essential/critical power supply is provided from the same PDB which shall restrict isolation as & when required.
- e) SLD (Single Line Diagram) of each panel shall be displayed inside MCC room.
- f) MCC room should have an additional exit considering emergency situation at the time of need.

- g) It is observed that the level of floor is quite uneven due to wrong placement of chequered plates on cable trench which may obstruct / hit anybody in emergency out from the MCC room. Proper flooring may be ensured.
- h) Storing of unwanted items inside the MCC room may be avoided.
- i) Some live panels found in open condition due to temporary connection of live cable above the floors. Hence all looping cables laid should be removed if not required otherwise they should be taken through gland plate with proper glanding & termination.
- j) Cables shall be properly dressed on the trays in the incoming cable trays behind the newly installed Bagging MCC room.
- k) Call station of PA system may be installed inside MCC room for communication in emergency.
- l) Deployment of manpower in a shift may be reviewed so as to avoid work pressure on a single manpower & to achieve necessary safety precautions while executing any activities in bagging plant.

  
Mr.S.K.Mohapatra  
DM (GE)

  
Mr.P.K.Mahapatra  
SM (GE)

  
Mr. R.P.Gupta  
DGM (F&S)

  
Mr.A.K.Panda  
GM (Production)

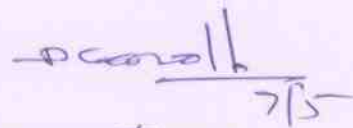
**Encl.:**

Annexure 1: Office Order for Constitution of Committee

Annexure 2: Statement of Witness Mr.A.K.Verma, Electrical In-charge, Bagging Plant.

Annexure 3: Relevant Photographs.

Executive Director (PDP): For kind perusal.

  
original: SL JP Surostava  
scanned copy: JGM(E) / GM(T) / GM(Prod) /  
DGM (F&S) / JGM (HR) / ED

ANNEXURE -1



**Investigation of electrical accident in Bagging Plant.**

ed-office-paradeep to: akpanda, rpgupta, pkmahapatra,  
sangrammohapatra

05/02/2014 06:13 PM

Cc: pvnarayana, jpsrivastava, pbhattacharjee, puspamohanty,  
mukeshkulshrestha, rkbhardwaj

Mr. Abdul Rafique Khan (108564), Attendant, Electrical in Bagging Plant got trapped by Electrical Flash in the MCC Room of Bagging Plant at 09.00 AM on 02/05/2014. The following committee will investigate into the reasons of accident and submit their recommendations, so that no future accident shall take place.

- 1) Shri A.K. Panda, GM(Prod)
- 2) Shri R.P. Gupta, DGM(F&S)
- 3) Shri P.K. Mahapatra, SM(GE)
- 4) Shri Sangram Mohapatra, DM(GE)

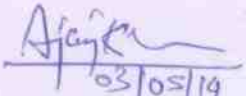
The committee will submit its report by 07/05/2014.

With regards,

S. K. Gandhi  
Executive Director  
IFFCO, PARADEEP UNIT  
Village - Musadia, P.O. - Paradeep  
Distt. - Jagatsinghpur, Odisha - 754 142  
Tel : 092381-01092 , Mob : 09937238337 , 06722 - 224001  
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Web : www.iffco.in

**Statement of witness at accident held in Bagging MCC Room on 02<sup>nd</sup> May' 2014**

On 02.05.2014, I was in General Shift and A.R Khan was in A-Shift, in Bagging Area from Electrical department. As there was new installation of MCC inside Bagging MCC room 2-3 days ago during annual shutdown, some temporary connections were provided from PDBs present inside the MCC room. Around 8.45AM we both went inside the MCC room for routine checking of the equipments. We found that a temporary single phase power supply from PDB no.-2 was given to the pedestal fan kept in front of New MCC panel. As per the routine practice to remove all temporary connections that had been made during shutdown, we were suppose to remove the temporary connections of the single phase pedestal fan also. Hence we switched off the particular MCB. Subsequently Mr A. R Khan started removing the single phase wire from that MCB & in the meanwhile an operation person complained for some problem in slat area, so I went outside the room and suddenly heard a flash sound from the MCC room. When I reached inside, I found that a flashover had occur in the cubical in which Mr A. R Khan was working & he was lying nearby but was conscious. After that he stood-up on his own and I observed that he had suffered from burn injuries on his palms. I immediately isolated the PDB no.-2 Main supply which was coming from New Bagging MCC and without any delay, took Mr A.R Khan to the plant dispensary for first aid. After that I informed my seniors about the accident.

  
03/05/14  
(Ajay Kr. Verma)

Assistant Manager (Electircal)

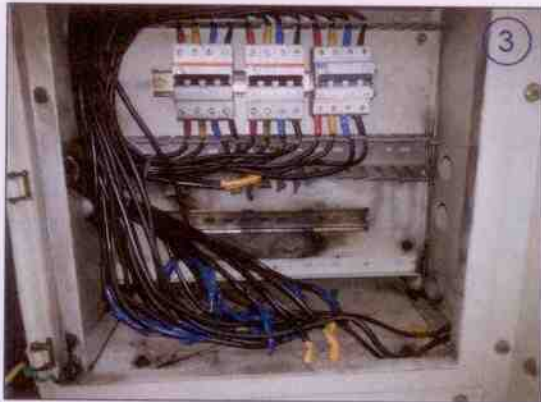
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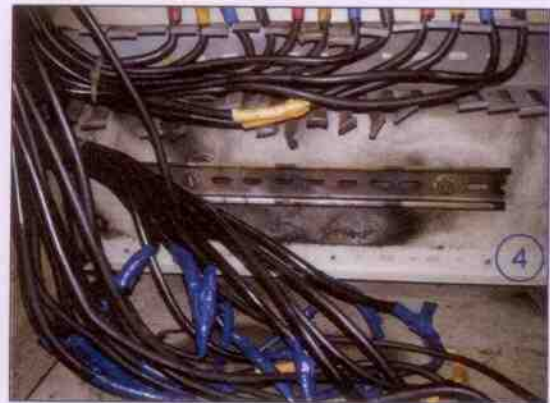
POWER DISTRIBUTION BOARD - 2



INCOMER, FEEDER No.- 1F2 &1F3



INSIDE VIEW OF FEEDER No.- 1F3



FLASH OVER LOCATION WITH MCB REMOVE CONDITION.



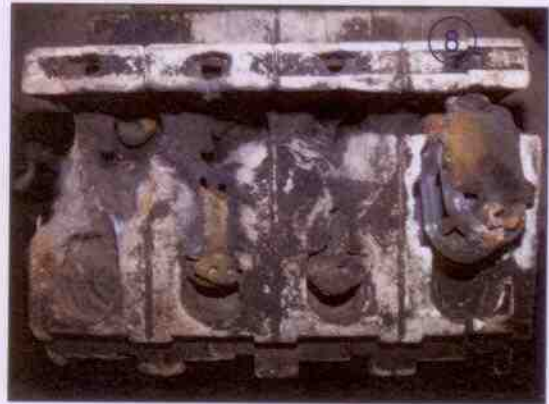
OUTGOING CABLE ALLEY



DAMAGED MCB FRONT VIEW



DAMAGED MCB INCOMING SIDE VIEW



DAMAGED MCB -1



DAMAGED MCB -2



CABLE DRESSING REQUIRED



CABLE DRESSING REQUIRED



UNWANTED MATERIAL TO BE REMOVED