Pre-Convention Case study Evaluation system during CCQC and NCQC:

Step-1: Identification of Hazard and Risk associated with them. – (Maximum Marks – 25)

Step-1(a): Recording of unsafe act and conditions with risk associated with them along with action taken for elimination as per format given in **Annexure-1**. Each complete filled row will deserve 0.4 marks subject to **(maximum 20 marks)**

It is expected from every team to observe at least 100 observation every month and do spot corrections for every unsafe act. However, it will be highly appreciated if corrective actions are taken for all unsafe conditions as soon as possible and preventive action by finding root causes of the unsafe conditions getting generated even after corrective action taken, and eliminating the same permanently by developing solutions for the unsafe condition.

Step-1(b): Types of observation recorded – Maximum 5 Marks:
Observations = UA/(UA+UC) ≥ 75% = 5 Marks
Observations = 50% ≤ UA/(UA+UC) < 75% = 3 Marks
Observations = 25% ≤ UA/(UA+UC) < 50% = 2 Marks
Observations = 5% ≤ UA/(UA+UC) < 25% = 1 Marks
Observations = UA/(UA+UC) < 5% = 0 Marks

If large numbers observations are recorded with spot corrections and root cause analysis for serious and fatality potential unsafe act, it can be it can be shown graphically with stratification, a sample is as given below:

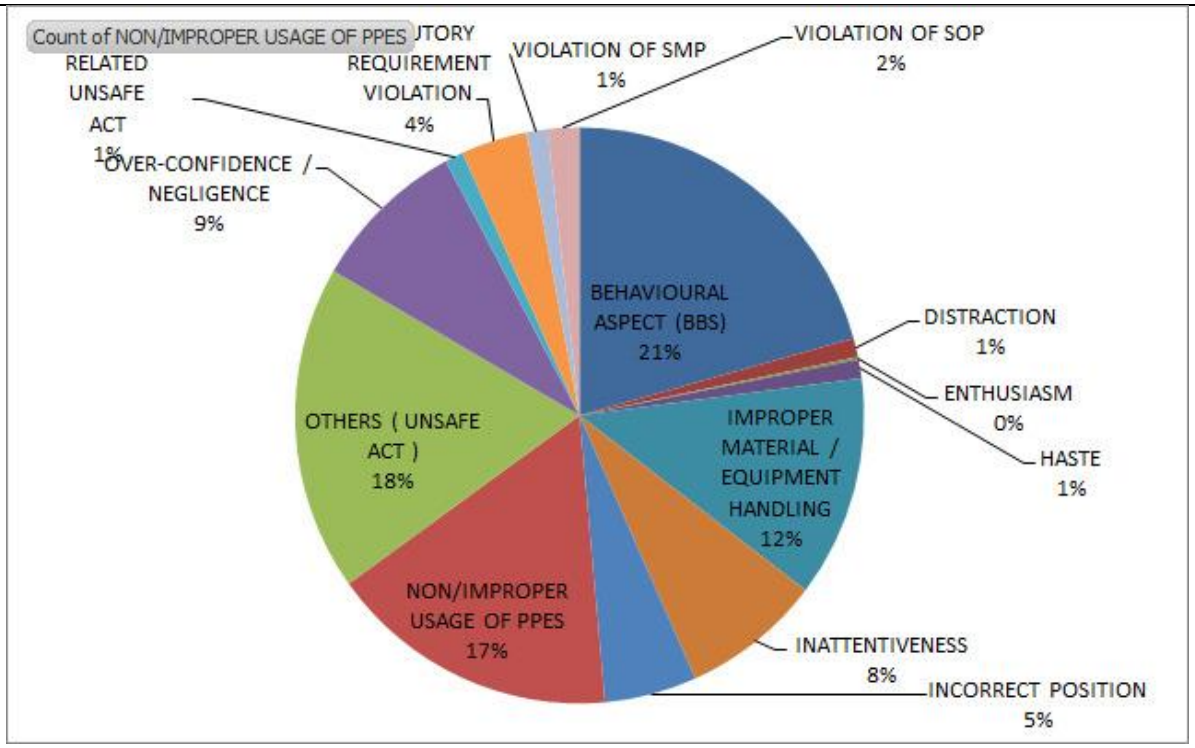


Figure 1.1: Stratifications of Unsafe Acts

Signature Validation by Facilitator	Signature Approved by HOD

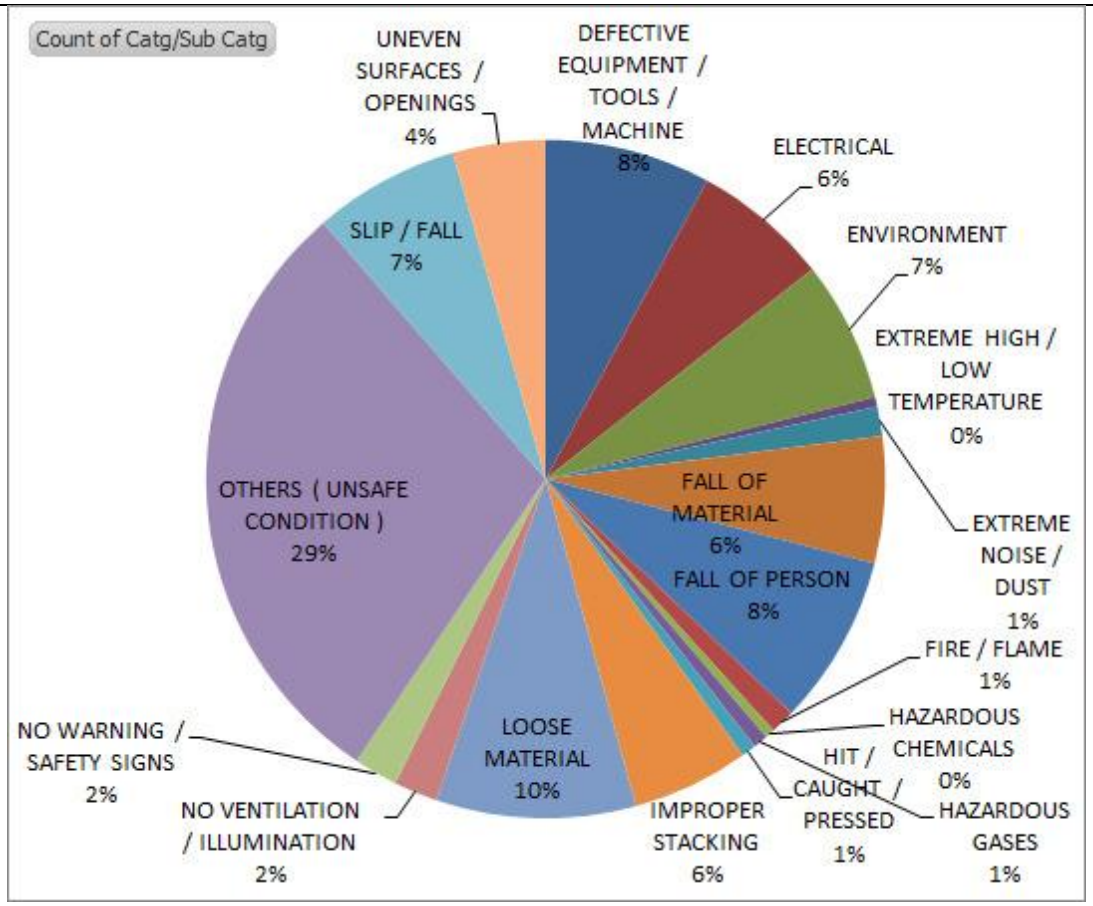


Figure 1.2: Stratifications of Unsafe Conditions

Signature Validation by Facilitator	Signature Approved by HOD

Step-1 (c.): Followings are not applicable this year, but will get included from next year. Hence it requested from the teams that if they start doing the same from this year only it will be highly appreciated by the judges:

a) For how many unsafe act and conditions corrective and preventive action was taken

Observation (Unsafe Acts)			Observation (Unsafe Conditions)				
Total	SCD	% SCD	Total	CAT	% CAT	RCAD	%PAT

b) How many unsafe act and conditions performed by team members itself

Observation (Unsafe Acts)			Observation (Unsafe Conditions)				
Total	SCD	% SCD	Total	CAT	% CAT	RCAD	%PAT

c) For how many Serious and fatality potential unsafe act spot correction was done

Observation (Serious & Fatality potential Unsafe Acts)						
Total	Serious	SCD	% SCD	Fatality	SCD	% SCD

d) Serious and fatality potential unsafe act for which are not spot corrected:

Sl. No	Description of Unsafe Act	Serious/ Fatality	Reason for Non-Compliance	Informed to (email Id/ Mob. No.
1				
2				

e) Serious and fatality potential unsafe condition for which was not able to addressed:

Sl. No	Description of Unsafe Conditions	Serious/ Fatality	Reason for Non-Compliance	Informed to (email Id/ Mob. No.
1				
2				

f) How many five minutes presentation done in front of HOD (authentic data should be filled up as QCFI will also take these data from organisation HOD directly

Step-2: Defining the Problem – Maximum 8 Marks

a) Planning with the help of Gannt or Mile Stone **Chart – 2 Marks**
b) Define the problem with the help of Flow diagram and description supported with photos etc. **– 6 Marks**

Step-3: Measure the problem by ascertaining the facts (Human, Physical and Systemic) –

1) **Maximum 21 marks** in case of investigation done for accident or near miss case **(Lag)**
2) **Maximum 18 marks** if solution developed for hidden hazard **(Lead)**
   a) **Physical Facts with details (Lag/Lead 4 marks maximum):** Describe all possible undesirable physical condition prevailing at site which can lead to human injury, property damage, process interruption or environment damage or incident already happened due to prevailing undesirable physical conditions. Supporting photos/ sketches can be included as per requirement
   b) **Human Facts with details (Lag/Lead 4 marks maximum):** Describe all possible elements of unsatisfactory behaviour prior to an accident/ event which is significant in initiating the event. Most popular methodology to get human fact by interview with victim and colleagues of victim in case of incident. Listing of all possible unsafe act which can be performed in case of hidden hazard where incident has not yet taken place but has got potential for the same. For supporting, name, designation and other details can also to be mentioned with whom interaction has been done.
   c) **Systemic Fact s with Details (Lag/Lead 4 marks maximum):** Describe all possible system applicable for working at location, equipment, Environment etc. Scan copy of valid clause from the documents (SOP, SMP, Logbook, work instruction etc.) can be included in the case study

d) **Approach for ascertaining the fact (Lag/Lead 2 marks maximum):** What was approach used to collect all three types of facts (Physical, Human and Systemic). It will be highly appreciated if your experience while collecting the fact is also elaborated

e) **4W+1H, a framework for gathering information or structuring (Lag/Lead 5 marks maximum):**

- **What:** This focuses on the core subject or event, defining what is happening/Problem
- **Where:** This specifies the location or geographical context of the event or situation.
- **When:** This clarifies the time frame or period when the event or situation occurred.
- **Who:** This identifies the individuals or groups involved or affected by the event or situation
- **How:** This identifies how the event is Impacted/going to impact w.r.t human injury, property damage, process interruption, environment damage etc.

A sample 4W+1H is also given in **Annexure-2** for your information please

f) Develop The Chronology (for Incident (valid only in case of Lag case 2 marks maximum): Developing a chronology involves arranging events in their correct order w.r.t time. It is like creating a timeline that depicts what happened first and what occurred next. This process is crucial for understanding the sequence of events and how they relate to each other. If finding difficulty in arranging the facts collected properly, it is possible that you have missed something while collecting the fact. In that case it is suggested to revisit site, human and documents and collect missed out fact.

Step-4: Analysis – Maximum 26 Marks

a) Physical Causes: From the fact collected in step-3 find out all the logical possible physical causes responsible for incident that already took place or having potential for initiating the incident. **(Maximum-5 Marks)**

b) Human Causes: From the fact collected in step-3 find out all the logical possible human related causes responsible for incident that already took place or having potential for initiating the incident. **(Maximum-5 Marks)**

c) Systemic Causes: From the fact collected in step-3 find out all the logical possible Systemic causes responsible for incident that already took place or having potential for initiating the incident. **(Maximum-5 Marks)**

d) Approach and logic to find out root cause: (Systemic) and represent them with suitable diagram followed in the respective organisation (For Example Tree Diagram or Cause & Effect Diagram). Sample of each is given in **Annexure-3. (Maximum-5 Marks)**

e) **Validation of root cause:** All the root causes to be validated by some responsible person before developing solutions and making action plan. Following points to be considered while validating the root causes: **(Maximum-6 Marks)**

- ✓ All possible root causes
- ✓ Validation Method
- ✓ Name of the person/s going to validate the root causes

- ✓ By when it will be validated (In case for serious/ Fatality potential case it should not take more than 48 Hours)
- ✓ Outcomes, whether it was accepted or not accepted (It will be appreciated if reason for not accepted is mention by the team)

Step-5: Improve (solution development and Implementation)

1) **Maximum 11 marks** in case of investigation done for accident or near miss case **(Lag)**
2) **Maximum 13 marks** if solution developed of hidden hazard **(Lead)**

a) Recommendation and developing solution and implementation action plans for every recommendation by use of suitable tools & Techniques. One recommendation can have more than one action plan but at least one action plan is necessarily per recommendation. Once Root causes are approved solution/recommendation and then subsequently action plans to be made and again permission for implementation of action plan can be obtained from a responsible person. It can be either shown in tabular form or point wise as team feel convenient. A Sample in tabular form is shown in **Annexure-4. (Maximum-3 Marks for Lag case and 5 Marks in case of Lead case)**

b) Record and communication (after approval granted): (Maximum-2 Marks)
- ✓ Description (properly worded) of each action
- ✓ Person responsible for implementation and by what time it will be implemented

c) Implementation of solutions using PDCA: Please give details what has been done in each part of P-D-C-A. Developing standard (safe) operating procedure. **(Maximum-2 Marks)**

d) Comparative Gannt or Mile stone chart: (Maximum-2 Marks)

e) **Assess Gains (Tangible/Intangible): (Maximum-2 Marks)**

Step-6: Control (*Review by using appropriate tools):* **Maximum 9 Marks**

a) **Follow up and Review:** Till system is stabilizes and fool proofing is done how follow up and review is done **(Maximum-2 Marks)**

b) **Training:** Training on new system is to be provided to all the team members and nonmembers who are directly or indirectly linked with implemented solution. **(Maximum-2 Marks)**

c) Check List: Check list to be made for periodical checking and for periodical audit with time. **(Maximum-2 Marks)**

d) Standardization and documentation: SOP/SMP to be develop for the implemented solution and same must be horizontally communicated to other similar area as a preventive and proactive approach. **(Maximum-2 Marks)**

e) **Before and after Comparison:** With the help of graph or photos or data whichever is possible and convenient to teams. **(Maximum-1 Marks)**

Abbreviation:

SCD: Spot Correction Done	CAT: Corrective Action Taken
RCAD: Root Cause Analysis Done	PAT: Preventive Action Taken

Annexure-1

Table-1.0: Format for Listing and recording of identified hazard

Sl. No.	Hazard Identified and associated Risk	Type hazard H/P/E	Risk Score (RS=P*S)	Risk L/M/H/ VH	Date/ Time	Safety Violation done by		Location	Validation		Compliance Date	Remarks/ Root Cause Code
						Name	Person's Id No.		Photo Before	Photo After		
1.		H= P1= P2= E=										
2.												
3.												
4.												
5.												

NB: Photograph is compulsory for unsafe conditions and accidents H=Human, P1= Property, P2=Process and E=Environment

Signature
Validated by Facilitator

Seal & Signature
Approved by HOD

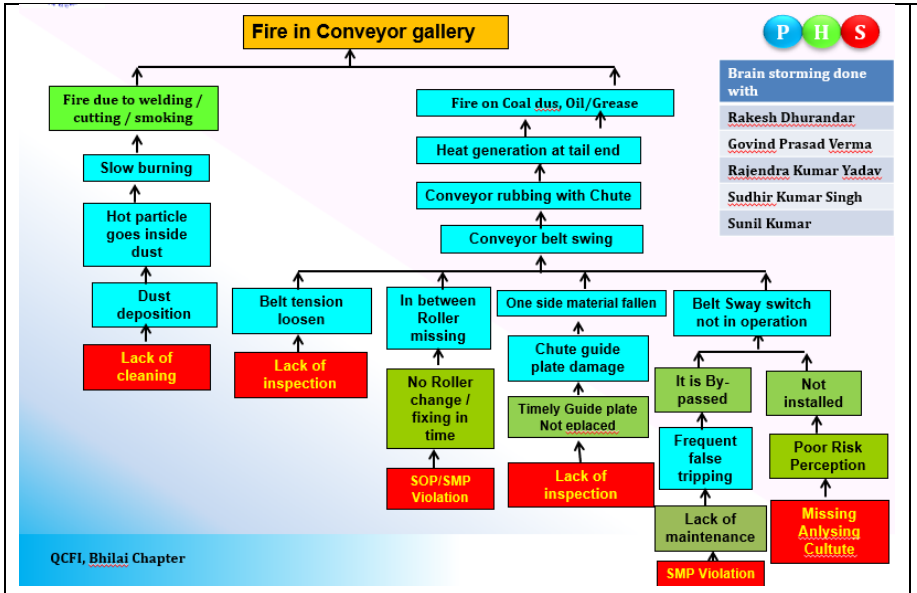
Root cause description (for this year it is optional)

Root Cause Code	Root causes	Solution/Action taken	Constrains if any faced	What help provided by management if required	Remark or reason for non-compliance

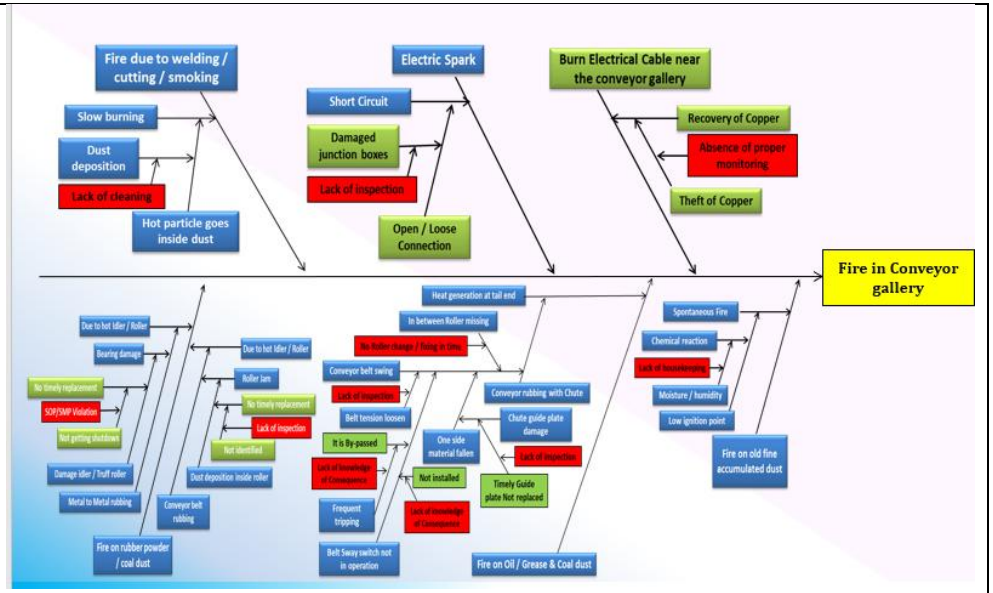
Annexure-2

4W+1H	Question	Lead Indicator (Proactive)	Lag Indicator (Reactive)
What	is the problem	Possibility of occurrence of fire in Coal conveyor Gallery.	Occurrence of fire in Coal conveyor Gallery
When	does the problem occur?	Season, day or night, condition, situation etc.	Date and Time of incident, season, day or night etc.
Where	Is the Business Location (Optional)		
	Is the Geographical Location	Macro detail	Macro detail
	Is the Physical Location	Pin point Location	Pin point Location
	Is the Process Location	Probable to be affected portion of Process	Affected portion of Process
	is the Gap?	Between standard and Actual	Between standard and Actual
Who	will be/got affected	if incident happens?	due to incident happened?
How	How much could be/is the the magnitude of the problem?	E.g., how much time would be required to set things right, how much manpower may be needed to recover, loss of production, Loss of coke production, Loss of conveyor belt, Human injury risk etc.	E.g., how much time would be required to set things right, how much manpower may be needed to recover, loss of production, Loss of coke production, Loss of conveyor belt, Human injury risk etc.

Annexure-3



Sample: Tree Diagram



Sample: Cause & Effect Diagram

Annexure-4

Sl. No.	Activity just before Root Cause	Root Cause	Group Recommendation	Various action plan

Name and Signature
(Responsible Person