

Third Party Verifier Case Study

Third party verifier / inspector case study should contain the following aspects

Part (1) Details of engineering construction or project on which failure analysis is to be performed

- Name of project/ system/ construction
- Owner
- Responsible people
- To be attached with Photos, Report, Drawing, Data, References
- What happened?
- Extent of damages
- Results and consequences
- Financial impact
- Fatality

Part (2) Investigation and Findings

Detailly explain how investigation is performed

- Visual investigation
- Interviews
- Inspecting the equipments, defected products, forensic analysis
- Inspecting the original design, drawing, report, case notes
- Failure symptoms records
- Technical log books
- Similar cases
- Maintenance history

- Technical logbooks

Judgement is to be done based on the following Quantitative aspects

- Design defects
- Design is correct but the way to construct or operate does not follow the design/ Wrong way of work method/ unsafe short cut method
- Environmental impact
- Corrosion
- Not sufficient strength
- Usage of inappropriate materials, tools , standards and methods
- Substandard quality issues
- Fatigue. Dynamic impact
- Related issues in other technical fields
- Public comment/ Public consultation
- Lack of preventive maintenance plan
- Lack of relevant tools and equipment to perform the regular inspection
- Lack of Non Destructive Testing Method/ procedures and equipment
- Irrelevant maintenance work procedure and issues
- Lack of corporate responsibility
- Financial factors
- Overhead factors
- Misconduct
- Improper usage
- Unqualified technical personnel and training issues
- Unqualified engineers and training issues
- Lack of experiences
- Inappropriate assignment of duty and responsibility

- Inappropriate reporting system
- Unreasonable delay in processing of the emergency reporting.
- Lack of risk analysis system
- Overlooking risk factor
- No matching of standards and real physical conditions
- Insufficient check list and steps
- Ignorance of early defect signs and symptoms
- Summary of findings and summary of cause

Judgement is to be done based on the following Qualitative aspects

- Relevant theoretical explanations
- Formula, parameters, values , technical data
- Deficiency and difference between reference and practical usage
- Literatures and technical references and standards
- Summary of findings and summary of cause

Part (3) Conclusion, Advice and Further Actions

- Summary of findings
- Advice on how to prevent it in future
- How to improve it
- Suggested standards and technical references
- Suggested work methods
- Suggested work plans
- Suggested related factor consideration
- Suggested Corporate Responsibility
- Suggested Check Lists

- Suggested check methods for early symptoms of defects
- Suggested Non Destructive Methods
- Suggested monitoring process
- How to improve the maintenance plan and schedules
- How to meet insurance liability
- Suggested training, methods, work procedures and work standards
- Suggested engineering standards and handbooks.
- Other suggestions.