



APPLICATION OF FIRE SAFETY MANAGEMENT THROUGH FIRE SAFETY AUDIT

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Abstract

A Fire Safety Audit is a systematic, independent evaluation of a facility's compliance with fire safety standards, designed to ensure safety measures are effectively implemented. This paper highlights the role of fire safety audits in identifying potential risks, enhancing compliance with national fire codes, and offering structured paths for improvement. The audit assesses existing fire safety management systems against recognized standards like the National Building Code and British Safety Council benchmarks. By identifying systemic failures and providing action plans, the audit supports a proactive approach to fire prevention and emergency preparedness.

Keywords:

Fire Safety Audit, Fire Safety Management, Checklist, Fire Safety Plan, National Building Code

1. Introduction

Fire safety audits are essential for evaluating the effectiveness of fire prevention and emergency response systems in industrial and institutional environments. The audit process involves collecting verifiable evidence and evaluating it against criteria like the National Building Code (NBC) of India. This research implements the Plan–Do–Check–Act (PDCA) cycle for Fire Safety Management, focusing on structured assessments of existing safety policies, threat identification, implementation strategies, evaluation, and corrective actions.

2. Aim of the Study

To evaluate and summarize the level of compliance with international fire safety management systems and recommend improvements based on audit findings.

3. Objectives

1. Identify and assess major fire hazards in the process and facility layout.
2. Evaluate the adequacy of fire protection and suppression systems.
3. Ensure compliance with fire-safe design, construction, maintenance, and operational practices.
4. Recommend practical measures to reduce fire risk and improve preparedness.

4. Literature Review

Key literature was reviewed to understand systemic models, audit frameworks, and risk-based safety approaches. A summary of selected literature is provided in the full document.

5. Audit Observations

Critical deficiencies were noted, including high-risk NG skid placement, lack of containment for flammables, poor wiring, and inadequate training and signage.

6. Recommendations

1. Conduct regular fire drills and improve emergency response training.
2. Install necessary infrastructure: sprinklers, detectors, hydrants.
3. Ensure legal compliance, review permits, and document all safety checks.
4. Improve workplace signage, traffic control, and risk communication.



5. Reassess and upgrade water storage and pumping capacity.

7. Conclusion

The audit reveals significant risks that must be addressed immediately. Category A actions, like installation of fire systems and training, are critical. Continuous improvement and monitoring are required to achieve best practices.

8. Categorization of Recommendations

Category A – Immediate action required due to high risk.

Category B – Action required within a reasonable timeframe.

Category C – Low risk; long-term monitoring.

9. References

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