



OPERATIONAL AND MANAGERIAL PRACTICES IN POWER PLANT

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ABSTRACT

The best Operational and Managerial practices at power plants have got more significance not only in terms of achieving high level of performance but also to achieve good health of the equipment in the power plant. This study shows that effective dimension of Operational and Managerial practices and its effects on power plant using exploratory analysis research methodology. Now-a-days effective Operational and Managerial practices makes the organization to withstand the competitiveness in the industry level as well as market level. This study elicit best operational and managerial practices in power plant

Keywords: Failures Preventions Activities, Planned Maintenance, Employee Rotation , Accounts and spare parts maintenance, Operation Maintenance

INTRODUCTION

Most of the high performing power plants have been adapting modern operational, managerial practices and quality systems. Effective and efficient operational management is the main key role of any organizational success. If any organization has to stay in operation in any competitive environment, continuous cost reduction and continuous quality improvements has become more essential. In order to fulfill latest business objectives and goals, many companies are promoting new strategies and technologies which will improve the effectiveness of the plant. Rehabilitation of power plant is also required to sustain in the competitive environment. Auxiliary power consumption, availability, power cost will mainly influence the power plant operations.

Carrasco-Gallego, Ponce-Cueto, and Dekker (2012) has given the case studies on Operational and Managerial practices in the area of CLSC and its importance in power plants.

Akçalı and Cetinkaya in the year 2011 published a paper on Quantitative models for inventory and production planning which emphasis on operations and managerial practices.

Chan et al. (2010) has published a paper on Just-in-time (JIT) and reverse logistics that show us the importance of operations in power plant and gives the ideal practices that can be followed in power plant for effective results.

RESEARCH AREA:

There are only few studies available on Operational and Managerial Practices from the above literature, which shows its need to focus on eliciting best Operational and Managerial Practices in Power Plant.

RESEARCH PROBLEM:

What are the best Operational and Managerial Practices of Power Plant?

OBJECTIVES:

To explore the Operational and Managerial practices in Power Plant.

RESEARCH METHODOLOGY:

The exploratory research methodology is adopted to study the stated objective.

DATA COLLECTION METHOD:

- ✓ Primary data has been collected from the operation & maintenance team.

- ✓ Secondary data has been collected from the management, Power plant Operation manuals and log sheets.

SAMPLE COLLECTION:

- ✓ Data has been collected from 3 different power plants having different capacities, 2.5MW, 12MW, 70MW. 50 employees from each power plant are taken as sample to collect the primary data.

SCOPE OF STUDY:

- ✓ Primary data is collected regarding employee details, operation & maintenance practices, organization culture & HRD practices which is common for all the plants.

INTERPRETATION:

EXPLORATORY FACTOR ANALYSIS OF THE OPERATION AND MAINTENANCE PRACTICE SYSTEMS EFFECTIVE DIMENSIONS

- ✓ Secondary data contains the boiler information & turbine information as per the power plants capacity
- ✓ Unstructured interviews & one to one interviews were conducted on TPM & TQM practices as well as factors influencing power plant operations & maintenance.

DATA ANALYSIS METHOD:

- ✓ After collection of the data, the data is analyzed using SPSS 20.0 and Excel. Descriptive statistics are used to find factor analysis.

FACTORS PRODUCED BY THE ANALYSIS	ITEMS LOADING IN EACH FACTOR	LOADING	GRAND MEAN
Failures Preventions Activities	Are documented failures regularly evaluated and are measures taken	.873	4.77
	Visual controls: Are the target values denoted on measuring equipment	.835	
	Are the employees from production included in the planning of new production facilities	.821	
	Are failures documented	.766	
	Is a maintenance and repair planning and control system in use in order to detect disorders and to plan maintenance and repairs	.765	
	Are there cleaning and maintenance plans	-.665	
Planned Maintenance	Is there a logbook for every production facility	.782	4.5
	Are condition analyses conducted for critical construction parts replaced ahead of schedule when necessary	-.692	
Employee Rotation	Handle the employees from production, maintenance, operations, according to the maintenance plans	.849	4.21
Accounts and spare parts maintenance	Is a spare part management system in use so that all necessary spare parts are available in a sufficient supply without overstocking	.562	4.5
	Audits are carried out periodically	.852	
Operation Maintenance	Are the employees from maintenance and repairs included in the planning of production facility	.866	4.4
	Are the maintenance and repair works that have to be carried out in cases of facility downtime conducted according to designated time intervals	.591	

Responsibility Maintenance	Does every tool for maintenance and repair works have its designated spot?	.834	4.5
	Is there a responsibility matrix, or the responsibilities for maintenance works clearly regulated	.493	
Operational Importance	When procuring new production facilities, is attention given to easy maintenance and repair possibilities?	.879	4.55
	Are the employees responsible for maintenance and repairs included in the installation of new facilities so that they become familiar with these facilities	.489	

Extraction Method : Principal Component Analysis
 Rotation Method : Oblimin with Kaiser Normalization
 Total Variance Explained : 70%

RESULTS

O&M practices in power plant influences the power plant performance. To examine the study exploratory factor analysis was employed in order to investigate possible dimensions underling original 17 variables. Extraction Method used is Principal Component Analysis and Rotation Method is Oblimin with Kaiser Normalization. Total Variance Explained is 70%. After the analysis 7 factors solution has been evolved which includes Failure Prevention Activities (4.77), Planned Maintenance(4.5), Employee Rotation(4.21), Accounts and Spare parts Maintenance(4.5), Operation Maintenance (4.4), Responsibility Maintenance(4.5) and Operational Importance(4.55) .Hence O&M Practices in the power plant influences the performance of the plant.

RECOMMENDATIONS

O&M policies to be framed for the industries such as Failure Prevention Activities, Planned Maintenance, Employee Rotation, Accounts and Spare parts Maintenance, Operation Maintenance, Responsibility Maintenance and Operational Importance in order to prevent maintenance failures in power plant..

CONCLUSION

It is concluded that OPERATIONAL AND MANAGERIAL PRACTICES are important for improving power plant performance. Systematic framework of policies regarding practices improves power plant power.

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