Preparation of Abstract for

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Reliability Centered Maintenance in Power System

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Abstract

Reliability Centered Maintenance, often known as RCM, is a process to ensure that system continues to do what their users require in their operating requirement context. It is generally used to achieve improvements in fields such as the establishment of safe minimum levels of maintenance, changes to operating procedures and strategies and the establishment of capital maintenance regimes and plans related to reliability of system. Successful implementation of RCM will lead to increase in cost effectiveness, system uptime, and a greater understanding of the level of risk that the organization is presently managing.

RCM procedure in electrical systems is initiated since many years ago, but this procedure is more prevalent in power plants and distribution systems. Transmission and subtransmission systems are very expand and complicated. These systems always have ring configuration and reliability analysis of them is complicated and there are too many elements in these systems, so using RCM procedure in transmission systems is reasonable. This project will develop RCM procedure for transmission and subtransmission systems.

This projected in divided into following areas of research:

- Identify the operating reliability of the system and its elements.
- Write a Failure Mode Effects and Criticality Analysis (FMECA)
- Determine the situation and significant of power transmission substations and lines to specify the premiership of maintained location.
- Do sensitivity analysis of system reliability according to element reliability parameters like permanent failure rate and repair time to determine priority of system elements.
- Apply the "RCM logic", which helps determine the appropriate maintenance tasks for the identified failure modes in the FMECA.
- Once the logic is complete for all elements in the FMECA, the resulting list of maintenance is "packaged", so that the periodicities of the tasks are rationalized to be called up in work packages.

Objectives:

- Cost savings from time based maintenance to reliability centered maintenance
- Power Marketing will have high benefit/cost ratios
- Create a cost-effective maintenance strategy to address dominant causes of system reliability.
- It is a systematic approach to defining a failure analysis of power system by deterministic reliability calculation and finds the priority of substation and transmission line in power system program composed of cost-effective tasks that preserve important functions.
- RCM emphasizes the use of Predictive maintenance (PdM) techniques in addition

Findings:

- A maintenance program that focuses on elements and locations that cause more influence on benefit and cost
- Calculate the reliability of large scale of power transmission system and find the priority of elements of system in maintenance strategy