

## Reliability Analysis: A Case Study in Designing Power Distribution System of Tehran Oil Refinery

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**Abstract :** Electrical power distribution system is one of the vital infrastructures of an oil refinery, which requires wide area of study and planning before construction. In this paper, power distribution reliability of Tehran Refinery's KHDS/GHDS unit has been taken into consideration to investigate the importance of these kinds of studies and evaluate the designed system. In this regard, the authors chose and evaluated different configurations of electrical power distribution along with the existing configuration with the aim of finding the most suited configuration which satisfies the conditions of minimum cost of electrical system construction, minimum cost imposed by loss of load, and maximum power system reliability.

**Keywords :** power distribution system, oil refinery, reliability, investment cost, interruption cost

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