

Evaluasi Pengukuran Kinerja Maintenance dengan Metode Six Sigma Maintenance Scorecard (Studi Kasus PLTM XYZ) = Evaluation of Maintenance Performance Measurement using Six Sigma Maintenance Scorecard Method (Case Study in PLTM XYZ)

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Abstrak

Peningkatan konsumsi listrik nasional setiap tahunnya, menuntut pemerintah untuk meningkatkan rasio elektrifikasi nasional dengan mempercepat proyek pembangunan pembangkit tenaga listrik berbasis energi baru terbarukan (EBT). Maintenance merupakan faktor terpenting bagi setiap perusahaan yang mengembangkan bisnis pembangkit tenaga listrik untuk mencapai zero failure selama beroperasi sehingga menjamin ketersediaan energi listrik dan meminimalkan biaya maintenance. Namun, masih banyak perusahaan yang kurang memiliki kesadaran terhadap peran penting maintenance, salah satunya adalah PLTM XYZ. Untuk itu, penelitian ini bertujuan untuk melakukan pengukuran kinerja maintenance pada Departemen Operation & Maintenance PLTM XYZ menggunakan metode Six Sigma Maintenance Scorecard. Berdasarkan studi terdahulu, Six Sigma Maintenance Scorecard telah terbukti efektif untuk mengevaluasi tingkat ketercapaian kinerja maintenance melalui pendekatan secara komprehensif menggunakan Maintenance KPI sebagai seperangkat indikator kinerja yang disesuaikan dengan tujuan perusahaan meliputi, visi, misi dan strategi. Hasil rancangan Six Sigma Maintenance Scorecard diperoleh 17 Maintenance KPI yang terdiri atas 6 indikator pada perspektif economical, 9 indikator pada perspektif technical, dan 2 indikator pada perspektif organizational berdasarkan hasil rumusan dari 7 sasaran strategis yang telah dikategorikan ke dalam 3 kategori perspektif tersebut. Kemudian, dilakukan pembobotan terhadap rancangan Six Sigma Maintenance Scorecard menggunakan Analytical Hierarchy Process (AHP) untuk membobotkan Maintenance KPI sebagai input atribut Pn dalam menentukan sigma level. Hasil pengukuran kinerja maintenance menggunakan Six Sigma Maintenance Scorecard diperoleh sigma level sebesar 3,38 yang menunjukkan bahwa PLTM XYZ termasuk dalam kategori rata-rata industri pada umumnya. Adapun, indikator-indikator kinerja maintenance yang perlu segera diperbaiki dan ditingkatkan, yaitu Return on Investment, Net Profit Margin, Forced Outage Rate, Sudden Outage Frequency, Mean Time Between Failure, dan Percentage of Training Participated. Hal ini dapat dilakukan dengan menganalisis sumber penyebab masalah dari indikator-indikator tersebut menggunakan diagram sebab akibat (fishbone diagram) sebagai upaya dalam menentukan usulan perbaikan yang tepat untuk diimplementasikan secara efektif sehingga dapat mencapai 6.

.....The increment of national electricity consumption along the years has required the government to increase the national electrification ratio by accelerating the construction of power plant projects based on renewable energy. Maintenance has been the most essential factor for every company that develops a power generation business to achieve zero failure during the operation in order to ensure the availability of electrical energy and minimize maintenance costs. However, there are still several companies that lack awareness in terms of important role of maintenance, one of them is PLTM XYZ. For this reason, this study aims to measure the maintenance performance at the XYZ PLTM Operation & Maintenance Department

using the Six Sigma Maintenance Scorecard method. Based on the previous studies, the Six Sigma Maintenance Scorecard has been proven to be effective in evaluating the level of achievement maintenance performance through a comprehensive approach using Maintenance KPIs as a set of performance indicators that are relevant to the company's objectives including vision, mission and strategy. There are 17 Maintenance KPIs were obtained as the results of the formulation of 7 strategic goals that have been categorized into the 3 categories of perspective in Six Sigma Maintenance Scorecard which consist of 6 indicators from an economical perspective, 9 indicators from a technical perspective, and 2 indicators from an organizational perspective. Furthermore, weighting is carried out on the Six Sigma Maintenance Scorecard using the Analytical Hierarchy Process (AHP) to weight the Maintenance KPI as the input attribute of Pn in determining the sigma level. The results of measuring maintenance performance using the Six Sigma Maintenance Scorecard obtained a sigma level of 3.38 which indicating that PLTM XYZ is categorized as the industry average in general. Meanwhile, maintenance performance indicators in PLTM XYZ that need to be fixed and improved immediately are Return on Investment, Net Profit Margin, Forced Outage Rate, Sudden Outage Frequency, Mean Time Between Failure, and Percentage of Training Participated. This research could be solved by analyzing the main problem of the indicators using a fishbone diagram as an effort to determine the right improvement proposal to be implemented effectively with the result 6.