

ABSTRAK

Kemajuan dalam bidang teknologi industri manufaktur merupakan aspek sebuah ilmu pengetahuan dan teknologi yang mengharuskan kalangan akademisi untuk meningkatkan kemampuan dalam penguasaan teknologi modern. Hal tersebut dapat dilihat dari perkembangan peralatan teknologi reverse engineering, seperti peralatan 3 Dimensi Scanning, Spectrometer Analysis dan peralatan teknologi sejenis lainnya, sedangkan pada sisi perangkat lunak (software) seperti Pengembangan CAD (Computer Aided Design) dan CAM (Computer Aided Manufacturing). Dengan metode reverse engineering, peralatan ketenagalistrikan dapat diproduksi secara mandiri dan meningkatkan Tingkat Kandungan Dalam Negeri (TKDN).

PT PLN (Persero) Pusat Pemeliharaan Ketenagalistrikan atau sering disebut PLN Pusharlis telah melakukan beberapa proses reverse engineering komponen ketenagalistrikan salah satunya yaitu pembuatan Blade of Force Draft Fan PLTU Kapasitas 315 MW. Tahapan proses reverse engineering mulai dari survey, drawing, prototyping sampai dengan quality control tidak selalu berjalan lancar, terdapat beberapa kegagalan proses yang pernah dialami. Untuk mengurangi atau menghindari kegagalan tersebut perlu adanya tindakan untuk pengendalian kualitas. Upaya meningkatkan kualitas proses reverse engineering tersebut dapat menggunakan tool pengendalian kualitas yaitu Failure Modes And Effect Analysis (FMEA).

Berdasarkan permasalahan tersebut, maka dilakukan analisa pada penelitian ini untuk meningkatkan keberhasilan proses reverse engineering. Judul yang diambil yaitu “-ANALISIS PROSES REVERSE ENGINEERING BLADE FORCE DRAFT FAN (FDF) PLTU KAPASITAS 315 MW DENGAN METODE FMEA (Studi Kasus di PT PLN Pusharlis)“. Hasil dari penelitian ini pada 3 unit pelaksana produksi dan workshop (UP2W) terdapat 2 kegiatan yang mempunyai nilai RPN tinggi yaitu proses Survey Blade Eksisting RNP 256 dan proses 3D Modelling RPN 150. Penyebab kegagalan pada kegiatan survey yaitu kurangnya data yang salah satunya dikarenakan formulir survey kurang detail. Sedangkan penyebab kegagalan proses 3D modelling yaitu kurangnya kompetensi dan pengalaman drafter.

Kata kunci : reverse engineering, blade FDF, FMEA, RPN

ABSTRACT

Advances in manufacturing industrial technology are an aspect of science and technology that requires academics to increase their ability to master modern technology. This can be seen from the reverse engineering technology development equipment, such as 3-dimensional scanning equipment, Spectrometer Analysis and other similar technology forecasting, while on the software side such as CAD (Computer Aided Design) and CAM (Computer Aided Manufacturing) development. With the reverse engineering method, electricity equipment can be produced independently and increases the Domestic Content Level (TKDN).

PT PLN (Persero) Pusat Pemeliharaan Ketenagalistrikan or often called PLN Pusharlis has carried out several reverse engineering processes of electricity components, one of which is the manufacture of Blade from Force Draft Fan Steam Power Plant Capacity of 315 MW. The reverse engineering process stages, from surveying, drawing, prototyping to quality control, do not always run smoothly, there have been several process failures. To reduce or avoid these failures, quality control measures are needed. Efforts to improve the quality of the reverse engineering process can use a quality control tool, namely Failure Modes And Effect Analysis (FMEA).

Based on these problems, an analysis was carried out in this study to improve to increase the confidence of the reverse engineering process. The title taken is "ANALYSIS OF THE PROCESS REVERSE ENGINEERING BLADE FORCE DRAFT FAN (FDF) STEAM POWER PLANT CAPACITY 315 MW USING FMEA METHOD (Case Study at PT PLN Pusharlis)". The results of this study at 3 production units and workshops (UP2W), there are 2 activities that have a high RPN value, namely the Existing Blade Survey process RPN 256 and the 3D Modeling RPN 150 process. The cause of failure in survey activities was the lack of data, one of which was the lack of detail in the survey forms. Meanwhile, the cause of the failure of the 3D modeling process is the lack of competence and experience of the drafter.

Kata kunci : reverse engineering, blade FDF, FMEA, RPN