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A Process FMEA in Aero Fuel Pump Manufacturing and Conduct the Corrective Actions

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Abstract : Many products are safety critical, so proactive analysis techniques are vital for them because these techniques try to identify potential failures before the products are produced. Failure Mode and Effective Analysis (FMEA) is an effective tool in identifying probable problems of product or process and prioritizing them and planning for its elimination. The paper shows the implementation of FMEA process to identify and remove potential troubles of aero fuel pumps manufacturing process and improve the reliability of subsystems. So the different possible causes of failure and its effects along with the recommended actions are discussed. FMEA uses Risk Priority Number (RPN) to determine the risk level. RPN value is depending on Severity(S), Occurrence (O) and Detection (D) parameters, so these parameters need to be determined. After calculating the RPN for identified potential failure modes, the corrective actions are defined to reduce risk level according to assessment strategy and determined acceptable risk level. Then FMEA process is performed again and RPN revised is calculated. The represented results are applied in the format of a case study. These results show the improvement in manufacturing process and considerable reduction in aero fuel pump production risk level.

Keywords : FMEA, risk priority number, aero pump, corrective action
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