International J.of Multidispl.Research & Advcs. in Engg.(IJMRAE),
ISSN 0975-7074, Vol. 3, No. II (April 2011), pp. 77-98

RISK CENTERED MAINTENANCE OF PREPARATORY SECTION OF SOYBEAN OIL EXTRACTION PLANT

**KISHOR N. KAWALE, A. S. CHATPALLIWAR,
V. S. DESHPANDE AND NILESHSINGH V. THAKUR**

Abstract

In general, unexpected failures; loss of production; higher maintenance costs and downtime associated with the failure of equipment are major concern in any plant. This paper presents the case study of the maintenance of the Soybean oil extraction plant. We have used the Risk Centered Maintenance (Risk-CM) approach which helps in planning maintenance strategy to minimize the loss resulting from the breakdowns or failures, in turn, for the maintenance cost minimization. In this case study Risk-CM approach is adopted for Preparatory section of Soybean oil extraction plant. Preparatory section is having nineteen subsystems, of which only six subsystems namely Cracker-1, Cracker-2, Flaker-1, Flaker-2, Feeding conveyer and Expander are responsible for production loss due to high risk of failure. It is estimated that 80 % of total risk is occurred due to 34 causes and 20 % of total risk is occurred due to 66 causes out of 100 causes of failure. After performing the different simulation experimentation with preventive maintenance for 80 % of total risk and varying maintenance schedules for 20 % of total risk, it is found that the maintenance cost is minimized to 38.88 percent.

Keywords: Risk-CM, Risk maintenance and planning, Soybean oil plant, Preparatory operation.