

MODEL DEVELOPMENT FOR BOILER EFFICIENCY ALONG WITH THE DISCUSSION ON SAFETY AND WASTE RECYCLING AT CORI

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Abstract

The working of a rubber compounding and process industry was understood by the visit to CORI Engineers Private Limited, Chengalpattu. The company has been established in 198255 and has been producing products such as Rubber Expansion Joints and bellows of various dimensions, hose pipes, gaskets, anti-vibrational mounts and rubber sheets for equipment lining for anti-corrosive industrial purposes. Boilers are deployed in the plant to provide the steam which is used for the vulcanization of rubber compounds. To catch up with the demand, the company has plans to automate the boiler division. Taking the first step in this direction, we developed an Excel workbook to determine the current boiler's efficiency using direct and indirect methods. Further, this was extended to estimate the financial loss in the process due to the various losses. Sensitivity analysis and error analysis was carried out to display the influence of necessary parameters on the boiler efficiency and to justify the assumptions made for the calculation. A literature survey was carried out to identify the hazards associated with the rubber industry and a preliminary HAZOP analysis was developed for the boiler at CORI. Various possible means to recycle the waste at CORI was proposed. The standard Operating Procedure (SOP) for the softener plant was also developed in accordance with the industry's requirements

Keywords: Rubber industry, boiler efficiency, safety, rubber reclaiming, cost analysis