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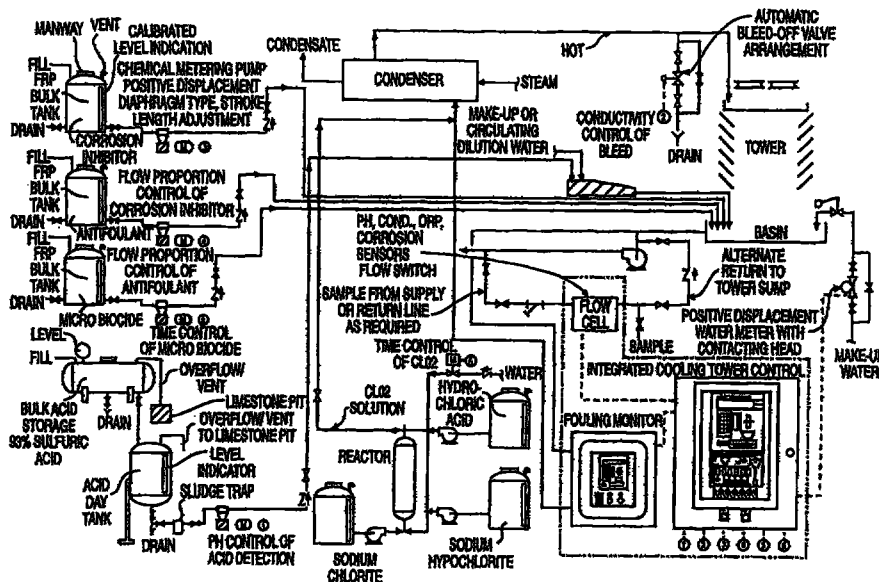
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(54) Title: PERFORMANCE-BASED CONTROL SYSTEM



(57) Abstract

A method and apparatus for detecting and controlling cooling system characteristics is disclosed. A flow rate of make-up cooling medium is measured. A conductivity of the make-up cooling medium is measured. A conductivity of a recirculating cooling medium is measured. A treatment material feed rate is determined based upon the formula: $X = (\text{make-up cooling medium flow rate})(\text{make-up cooling medium conductivity}) / (\Omega / (K(\text{recirculating cooling medium conductivity})))$, where X is a treatment feed rate of a treatment compound, Ω is a desired concentration of the treatment compound, and K is a constant. A corrosion rate of the recirculating cooling medium is measured. A desired corrosion rate of the recirculating cooling medium is determined. A feed rate of a corrosion inhibitor is calculated according to the following formula: $Y = (X) [1 + \alpha (\text{CORR}_{\text{MEASURED}} / \text{CORR}_{\text{SET POINT}})]$, where α is a value between about 0.1 and about 8.0.