

STEAM CONDENSING APPARATUS

ABSTRACT

An air-cooled steam condenser (30) that also uses heat pipe technology so as to provide steam tubes that are freeze proof under any ambient conditions. Steam flows through the main condenser (32) with concurrent steam and condensate flow downward. The heat transfer surface area and fan air flow are designed such that all of the steam does not completely condense and steam vapor continuously exits each tube row (40). This continuous flow of steam vapor purges these rows of noncondensable gases. The excess steam flows into the lower header (34) to a secondary condenser section (36) that utilizes heat pipes (48). In the secondary condenser section (36), the excess steam condenses on the evaporator side external surface of the heat pipes (48). The noncondensable gases that remain in the lower header (34) are vented with an air removal system (52) similar to conventional condensers. Condensate in the lower header (34) is collected for reuse in the power generation cycle.

Fig. 4

