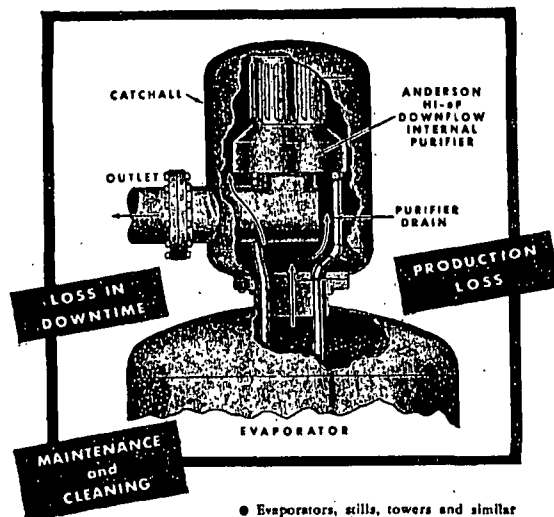


# **STOP** Entrainment Losses IN EVAPORATORS STILLS AND TOWERS WITH **Hi-eF Purifiers!**



Evaporators, stills, towers and similar vessels should have Anderson Hi-eF Purifiers. These money-saving units intercept and return to the evaporator all carryover thereby preventing possibility of loss of valuable products. In addition, by removing this carryover and entrainment, a Hi-eF Purifier eliminates frequent cleaning of vapor lines, condenser tubes and other equipment.

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## **More TECHNICAL BRIEFS**

Begin on page 132

been built. The first 160,000-kva, 3600-rpm machine, at the time it was built, was the highest capacity that could be shipped under American railroad limitations of frame diameter, length and weight, with the armature factory-assembled in one piece.

Because of the better magnetic materials currently in use, particularly because of the employment of grain-oriented strip steel in the armature punchings, it is now possible to build and ship one-piece armature, 180,000-kva, 3600-rpm machines under the same shipping limitations which formerly restricted the size to 160,000 kva. The corresponding maximum-size, 1800-rpm machine for one-piece shipment is about 250,000 kva today, where prior to these improvements in the magnetic parts of machines that limit was about 200,000 kva. The authors then discuss other developments in the same vein. APC Paper, no number.

**Present Status of Supercharged Cooling.**  
By W. I. Ringland and L. T. Rosenberg, Allis Chalmers Mfg Co.

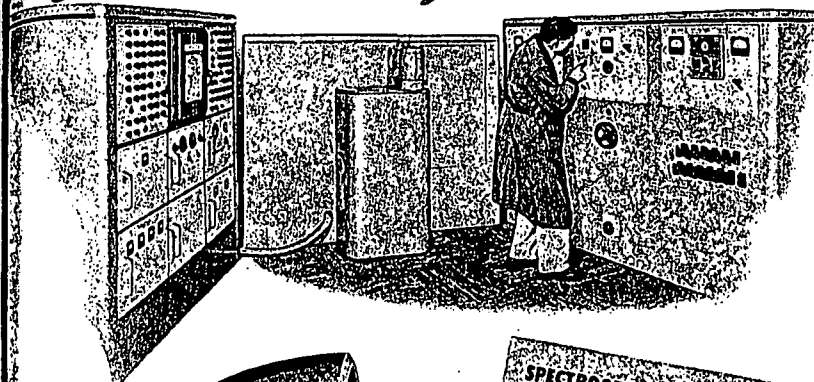
Ventilation of modern turbo-generators is the culmination of a long chain of developments extending over the past fifty years. The earliest small 4-pole steam-turbine-driven generators were quite short and were easily cooled from the ends. As ratings were increased and generators grew longer, means had to be devised to cool adequately the center. The multiple radial system introduced in 1924 was a major step forward. It brought the cool air into the stator core at many points around the outer diameter and provided for its escape at intermediate positions. Long rotors were ventilated through trenches or tunnels below the rotor coils in addition to the heat transfer at their grooved surfaces. A radial scoop arrangement was also devised to draw air from the gap down into the rotor at many points. However, rotor temperature rise remained the predominant limiting factor in machine output.

Rotor ventilation was substantially improved in 1935 by the introduction of axial ventilating slots in the teeth and poles discharging into the air gap along the rotor length. This, in turn, stimulated further improvement in stator cooling, and in 1937 the first spirally ventilated stator was placed in operation. In this design every other vent duct along the length of the stator served as a gas inlet, while the intermediate ducts served as gas outlets.

Directions for ordering papers on p 154

POWER • JUNE 1953

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