WESTINGHOUSE RADIATORS

INSTRUCTIONS

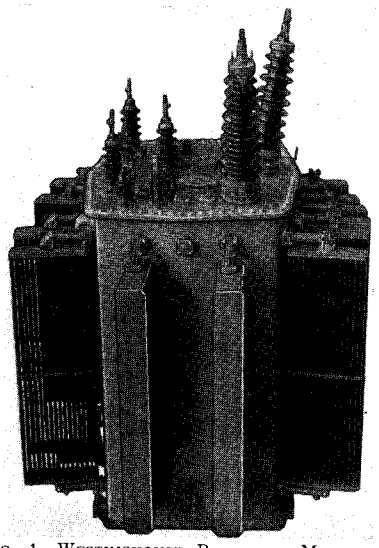

FIG. 1—WESTINGHOUSE RADIATORS MOUNTED IN RADIAL POSITION ON A 5625 KV-A. TRANSFORMER

DESCRIPTION

The Westinghouse all welded sheet metal radiator used on the larger oil immersed self-cooled transformers has a very high radiating efficiency because of the chimney effect of parallel surfaces, and the proper ratio between the radiating surface and the volume of oil.

The radiator is composed of an assembly of hollow sections, through which the oil circulates and is cooled. A pressed metal cap welded on to each end of the assembly of sections completes the structure and provides connections for the fittings which attach the radiator to the tank.

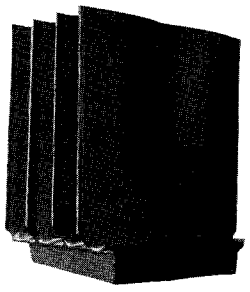

FIG. 3—SECTION OF RADIATOR SHOWING JOINTS FORMED WITH OUTSIDE WELDS

The individual sections are made from two flat sheets of steel of the same length, each of which is 12 inches wide. To secure different lengths of radiators, these assemblies are made in lengths from four feet to fourteen feet, varied in steps of approximately one foot. The side edges of these sheets are welded together by an automatic resistance seam welding machine and the ends closed by gas fusion welds. A welded seam is made along the centerline the entire length of the section except for about six inches at each end. Air pressure is applied at a small opening at one end so that the sheets are forced apart and given a permanent set, where not restrained by the welds, to limits imposed by a restraining mould, thus forming the ducts for oil circulation.

The welds at the ends are then sheared off and ends formed as shown in Fig. 3 and 4. This forming of the ends provides a means for proper spacing of sections, external welding surfaces and a "hip roof" shape which eliminates horizontal surfaces between sections and insures complete drainage. A pressed metal cap is welded to the formed ends of the section assembly, thus completing the structure and providing means of attaching the radiator to the transformer tank.

All joints are formed with outside edge welds which are reliable, easy to make, and permits a damaged joint to be repaired easily. The open construction permits the thorough cleaning of all surfaces preparatory for a good paint coverage, thus insuring long life from each repainting. This results in a minimum cost for maintenance.

The "hip roof" surfaces between sections and the sloping surfaces on the caps contain no flat surfaces where water can collect and cause rusting. The weld between sections and the lower cap is scalloped between sections, so that any bead formed by the welding operation will be depressed and not serve as a stop, insuring no collection of water.

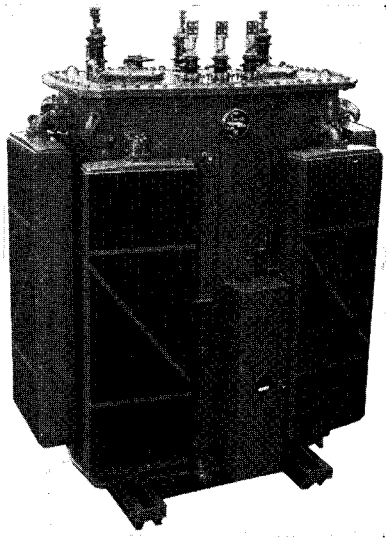

FIG. 2—WESTINGHOUSE RADIATORS MOUNTED IN TANGENTIAL POSITION ON A 5000 KV-A. TRANSFORMER

ACCESSORY EQUIPMENT

The Westinghouse Company has developed a special crane for mounting and removing radiators. This crane is easily installed by bolting its base plate to the transformer by means of the transformer cover bolts.

A special cleaning tool has also been developed for removing rust spots or preparing the radiator surface for painting.

Information on both the crane and the cleaning tool are given in Transformer Renewal Parts Catalog E1-11. The crane is covered by Renewal Parts Letter No. 3. These letters may be obtained by request.

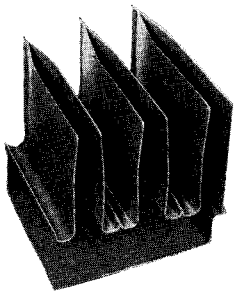

FIG. 4—SECTION OF RADIATOR SHOWING FANNED OUT TUBES

Westinghouse Electric Corporation

Sharon, Pa.

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