

shown in the general diagram of connections. The D. C. Generator No. 5 can take the place of either No. 1 or No. 2 exciter and the other D. C. Generator No. 6, that of No. 3 or No. 4 exciter. The diagram shows the two four pole D. T. switches to throw the D. C. Generator on to either exciter panel. These two switches are close together and designed such that it is impossible to throw the generator on both exciter panels simultaneously. The fields of the A. C. Generators are also provided with D. T. switches to throw the field on either side of bus bars.

Considerable difficulty was experienced in reaching a decision on the plans for a central switchboard, owing to the space being limited to that which was intended for the original small switch-board to control four generators as was shown in Fig. 1.

Switch-board, switches, etc., are distributed on four floors in the middle dynamo room and consist of the basement floor, main floor and two specially constructed switch-board galleries. The main floor is composed of 12" I beams and terra cotta tiles, on which is laid 1" Tennessee marble in pieces 12 x 12" square. The first gallery consists of 10 I beams, placed three feet ten inches apart with expanded metal and concrete floor having a smooth cement finish. The same construction is employed for the basement floor. The second gallery is supported by 8" I beams placed 18" apart, upon which is a 1½" Vermont slate floor, the slabs being 18" x 36".

To each floor, two circular stair cases are provided, one for ascending and one for descending. The hand rails are made and supported by heavy cast iron posts; 2" wrought iron pipe is used for hand rails, and ¾" square wrought iron twisted bars for the balusters.

THE CABLE SUBWAY.

As has been stated, the power house is 1,000 feet long and to provide means of conducting the cables through the power house to connect with the transmission line, a fire-proof subway is run through the entire length of the power house with manholes in each of the dynamo rooms, and one outside of the power house entrance, where the subway enters the tower, as shown in Fig. 6. This subway consists of vitrified conduits laid in concrete, and the whole resting on ¾" steel plates, supported on the bottom flanges of the 16" and 18" I beams, placed 2 feet 4 inches apart. These I beams span the stone piers which are 21' 6" centres, and on top of these beams a ¾" checkered steel plate floor is laid, which is fastened down with ½" flat head machine screws and these form a steel plate floor clear through the centre of the power house, the width of the passage way being 10' 6".

In order to preclude any possibility of moisture entering the