

*P. Jermann*

PS Int. EE 59-25  
RM/ld - 16.12.59

PS ELECTRICAL ENGINEERING GROUP

Technical Note No. 40

TELECOMMUNICATIONS IN THE SOUTH GENERATOR BUILDING

Draft Document for Discussion

In planning the extensions of the P.S. telecommunication system in the South Generator Building (S.G.B.) some difficulties are encountered by the fact that there is no control centre like in the P.S. Power House; controls are spread over a large part of the building. An additional inconvenience is the high noise level in the machine hall which does not permit the use of loudspeakers and, furthermore, may result in a bad reception at other places, even if microphones with a special characteristic cancelling out background noise are used.

It is, therefore, proposed to install a sound insulated cabin near the patch panel and the control boards, in which most of the telecommunication facilities would be concentrated. The telephones should be combined with calling lights of the flashing type, which would be distributed at convenient places.

The S.G.B. will be equipped with the following facilities

### 1. NORMAL TELEPHONES

One set in the sound insulated cabin and one set in the personnel room. Both sets will have the same number (connected in parallel). The calling signal will actuate the flashing light.

### 2. PORTABLE TELEPHONE SETS

This system will be used mainly during the testing period and afterwards for adjusting generators which are for some reason only locally controlled from a spot near the magnets.

Three ten-line boxes will be mounted on the Siemens control board and one box on the Oerlikon board. In the generator building headsets with throat microphones will have to be used.

These ten lines will be connected in parallel to the existing system Main Control Room - Experimental Area - Counting Room.

17 multipin sockets (Schaltbau - Munich) are spread over the whole Experimental Area for plugging in portable ten-line boxes.

### 3. PUBLIC ADDRESS SYSTEM

This system will mainly be used for general announcements to the experimentists and for demands to certain persons to ring up the generator building operator by means of the call-in-telephone system (described under 4).

In the cabin a handset equipped with a dynamic microphone will be installed, which is connected to the loudspeakers already existing in the Experimental Area.

To make sure that the announcement reaches the interested person, a small tone control instrument will be added to the usual key and control lamp.

#### 4. CALL-IN-TELEPHONES

This system is the main communication between Experimental Area and Generator Building. Any demands for changing circuits, or a set up of a new beam channel will be made by means of this system.

On each group of d.c. terminal boxes in the experimental hall a handset will hang on a hook. If the handset is lifted at any of these points, the flashing light in the Generator Building appears, and it disappears when the operator lifts the handset of his telephone.

#### 5. CONTROL CENTRE INTERCOMMUNICATION

The existing system has to be extended, however, with handsets in the Generator Building instead of microphones and loudspeakers. The handset will be equipped with a dynamic microphone. For calling other control centres the procedure is identical with the one already in use. For receiving announcements, however, the operator perhaps at one time does not hear the message and has to be called back. To facilitate this, a kind of storage device shall be added. First of all, a flashing light should tell the operator that an announcement is being made and a selfholding relay should maintain the illumination of the lamp of the calling control centre (ideally even longer than the duration of the message) until the operator lifts the handset.

The key board installed will have

7 indication lamps (all control centres)

4 keys (Main Control Room - Power House - Counting Room - East Area.)

Enclosure Drawing 156-86-3

R. Mosig

Distribution (open)

Parameter Committee Members

H. Bakker  
H. von Ballmoos  
G. Brianti  
M. Georgijevic

E. Hugli  
B. de Raad  
H. Reitz  
L. Resegotti