GFELLER LINE CONCENTRATORS
49-9-2, 49-11 + 1-2, 49-12-2
GENERAL DESCRIPTION
DC OPERATION

1. INTRODUCTION

1.01 This appendix is issued to include the necessary information on units converted to DC battery operation.

1.02 The following additional information and alteration of the main section is necessary for DC operation. The main section text is valid, as is, for AC operation.

1.03 The following paragraphs of the main section are replaced:

3.04	5.01
3.05	5.02
3.06	5.03

3. GENERAL

3.04 49-9-2: This model has a total of 9 vertical bars (trunks). It requires 12-1/2 cable pairs to connect the central office unit to the remote unit. Nine of these cable pairs are used for talking paths and 3-1/2 are used for circuit functions.

3.05 49-12-2: This model has a total of 12 vertical bars (trunks). It requires 15-1/2 cable pairs, twelve of the pairs are used for talking paths and 3-1/2 pairs are used for circuit functions.

3.06 49-11+1-2: This model has a total of 12 vertical bars in the central office unit and 11 vertical bars in the remote unit. It requires 14-1/2 cable pairs, eleven are used for talking paths and 3-1/2 are used for circuit functions. The extra vertical bar, designated BES in the central office unit, is used to return overflow tone to a terminating call in the event that all eleven trunks are busy. The vertical BES is shown in the model number by +1.

5. PRINCIPLES OF OPERATION

5.01 The dc power required for equipment functioning at the subscriber unit is remotely supplied from the central office unit over one cable conductor using ground return. This dc current charges a large capacitor at the subscriber unit providing the reserve power needed for the higher current demand when initially operating magnets and relays. The central office unit also feeds positive dc current over four and negative dc current over two of the six remaining control cable conductors to the remote unit. There are two relays in series with each of these dc feeders, one in the central office unit and one in the remote unit. These six pairs of relays and other components comprise a mutual code type signaling arrangement which permits selective synchronizing of the switching mechanism at both units. This so-called marking is basically the same for a call originated by a customer or terminated to a customer.

5.02 There are two types of power supplies, associated with the central office unit, that may be used with the Gfeller line concentrator. The PEC-8001-A has three sections which supply the ac voltage requirements, the dc voltage requirements and, on an emergency basis, both ac and dc voltage requirements using a vibrator power supply which automatically starts to function during a commercial power failure. The ac voltage supplied by the PEC 8001-A is rectified by a separate rectifier unit to obtain a positive voltage supply.

5.03 The second type of power supply, PEC -8002, is a transistorized supply. This type does not require the emergency source as it functions entirely on the -48 volt dc central office battery supply. The unit supplies the same ac voltage requirements and dc voltage requirements that PEC-8001-A furnishes. The ac voltage supplied by the PEC -8002 is rectified by a separate rectifier unit to obtain a positive voltage supply.