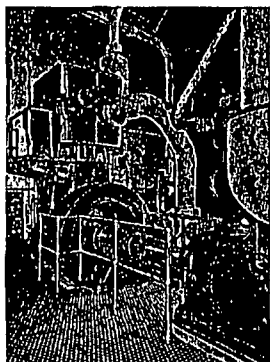
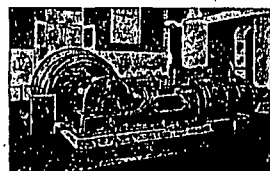




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Two-cylinder "Universal Unaflow" driving ammonia compressor, in Brewery Power Plant.



300-Kilowatt National "Universal Unaflow" in Meat Packing Plant.

RUN down the list of American industries which are depending on Skinner Engines for unfailing, dependable power . . . to generate electricity . . . to drive compressors and pumps . . . for refrigeration and air conditioning. They have low-pressure steam as a by-product, for space heating and for use in varied manufacturing processes.

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wide range. With these disadvantages, magnetic amplifiers can be applied in dc conversion stations to provide complete isolation and insulation for high dc voltage instrumentation, protection and circuits. In addition, the isolation obtained with magnetic amplifiers simplifies some problems and provides a solution to others of instrumentation protection, or control. The fact that voltage is required for operation of a magnetic amplifier is not a disadvantage in a dc conversion station, since voltage is always available.

Some of the simple applications of magnetic amplifiers which have been made in dc conversion stations are along with some other possibilities. With the great interest which is shown in the design and application of magnetic amplifiers, it appears that there will be many more while and normal uses in the development. AIEE Paper No. 53-261.

Electronic Frequency Change Between Ac Power Systems. By Winograd, Allan-Chalmers Mfg. Co.

Early in 1943, a 6,667-kw electronic frequency changer, using mercury rectifier, was installed in the Gary & Tin Mill of the United States Steel at Gary, Ind., to provide a synchronous tie between the 25-cycle, 60-cycle power systems for the controlled interchange of power in that direction. All the 25-cycle power is generated in the steel company's plant in the Chicago district. The 60-cycle system is supplied by the steel company's generating equipment and by the Northern Indiana Public Service Company.

The interchange had to be made through a non-synchronous tie between the frequency variations on the 25-cycle system. The electronic frequency changer was selected by the engineers of the United States Steel after investigating several alternative methods, including the Scherbius system, two ac, two dc motor-generator and two rotary converters. The frequency changer was given the mercury-arc frequency changer, in spite of its higher first cost and the pioneering involved, for the following reasons:

1. It consists of stationary equipment and requires no special foundation.
2. There are no slip rings, commutators and brushes, and the maintenance cost was expected to be lower.
3. It is easy to start without any load on the system and it requires no synchronizing. It does not feed into



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