N.R.C.34
Electricity

DEPARTMENT OF TRADE AND COMMERCE

ELECTRICITY AND GAS INSPECTION SERVICES

OTTAWA, June 7th, 1933.

District Inspectors of Electricity & Gas:-

Dear Sirs,- I beg to advise you that the type MVA demand meter, manufactured by the Sangamo Company, Limited, Toronto, Canada, has been approved by the National Research Council and may be submitted to verification in Canada.

The meter consists of three Lincoln elements similar to those used in type 4L-2 meters. The top element is arranged so that the phase shifting transformers are connected for a phase position of 18.2° or for .95 power factor and connected so that the meter will read KVA over a power factor range of .99 to .86 leading. The middle element is identical with the top element but connected with reverse phase rotation so that this element will read KVA through a power factor range of .99 to .86 lagging. The bottom element has the phase shifting transformers tapped for an exact phase position of 36.8° or .8 power factor, or covering a power factor range of .90 to .65 lagging. Each of the above ranges allow a maximum of 2% error in the KVA readings.

The full scale watts for each element is 1500 and the nominal rating, 5 ampere 115 volt 60 cycle 3 phase 3 wire. The meter can be used on 3 phase 4 wire circuits with three current transformers and special potential transformer connections. The time period of each element is 15 minutes for 90% of ultimate and the testing time, 32 minutes.

The internal connections are arranged so that each element carries a small connection panel mounted on the side of the frame so that by simply changing the position of links on each panel the elements can be connected to read watts, to facilitate testing of each element.

When the meter is connected in circuit the element which reads the highest is taken as the true indication of KVA as the reading of the highest element determines the particular range of power factor at which the maximum KVA occurred.