

DISCUSSION BY F. NOVOA M. (I)

to the Paper N° 49, Engineering Aspects of the July 8th, 1971 Earthquake in Central Chile, by R.M. Lastrico and J. Monge.

Beyond the remark by the authors that "estimated losses include damage to electricity systems", it should be interesting to notice that the damage to electrical systems, further than the obvious unavoidable local failures in the distribution lines, included the distinct multiple failure of high voltage equipment, as described in (1), at the primary Substations of San Pedro and Cerro Navia.

This failure brought about the blackout of the provinces of Santiago and Valparaíso, and the adjacent zones, for 20 min., and left unused the generation of one 125 MVA thermal station for about $3\frac{1}{2}$ days, blocking further the transmission of some other 20 MVA through the system.

The failure of most of the above mentioned high voltage equipment would have been avoided, and made improbable for the future, by simply modifying, its light steel supporting trusses, to exclude the multiplying effect by coupling referred to in (1), as was well determined by an investigation after the earthquake. Some of the equipment damage was also found due to lack of consideration of the displacement response between different oscillating elements of equipment connected together.

Reference

- (1) F. Novoa M.: Earthquake Analysis and Specification of the HV Electrical Equipment, 5 WCBE, Paper N° 69.

I) Author of Paper N° 69.