

Design and application of the metal oxide surge arresters (MOA) to ensure their high reliability.

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The first application of the metal oxide arresters to the Japanese power systems have started in 1975. It was the first experience in the world. At that time, almost all customer were worried about the long term stability of MOA. Up to now failure rate of MOA is much lower than gapped type arrester. It can be said that MOA is confirmed superior reliability. The reliability of MOA, however, largely depend on its design and application. The majority of our products have been designed and applied in accordance with Japanese standard „JEC. The protective levels specified in JEC have been higher than European and/or American practice. Also there are some differences in application of MOA between Japan and other countries. These peculiar practice in Japan may lead the result of high reliability of MOA. In this sense, there is no guarantee that all MOA in the world. have high reliability. In this paper , firstly our failure records during 27 years were presented, and we picked out important characteristics affecting the reliability of MOA from the records. And then we investigated these characteristics referring to GB(IEC) standard and JEC standard. In conclusion, reliability of MOA will greatly affected by it's protective level. To ensure high reliability, it is necessary to use MOA with appropriate protective level. However an arrester performance is important to decide basic insulation level of substation equipment, but customer should be care that the lower protection level leads to the lower reliability.