

Article Abstract

Title:	Application of artificial neural networks to improve power transfer capability through OLTC
Author(s):	A. Abu-Siada ^{1*} , S. Islam ¹ and E.A. Mohamed ²
Address(es):	^{1*} Department of Electrical and Computer Engineering, Curtin University of Technology, Perth, AUSTRALIA ² Department of Electrical Power Engineering, Ain Shams University, Cairo, EGYPT *Corresponding Author: e-mail: a.abusiada@curtin.edu.au, Tel +61-8-92667287, Fax.+61-8-92662584
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Abstract:	On load tap changing (OLTC) transformer has become a vital link in modern power systems. It acts to maintain the load bus voltage within its permissible limits despite any load changes. This paper discusses the effect of different static loads namely; constant power (CP), constant current (CI) and constant impedance (CZ) on the maximum power transfer limit from the generation to the load centre through the OLTC branch and in turn on the static stability margin of power systems. Then the paper introduces a novel approach for the on-line determination of the OLTC settings using artificial neural network (ANN) technique in order to improve the power transfer capability of transmission systems. The proposed approach is tested on a six-bus IEEE system. Numerical results show that the setting of OLTC transformer in terms of the load model has a major effect on the maximum power transfer in power systems and the proposed ANN technique is very accurate and reliable. The adaptive settings of OLTC improve the power transfer capability according to the system operating condition.
Keywords:	OLTC, Static Load, Voltage Stability, ANN.