Title	A Solution Technique for the Equal Area Criterion of Transient Stability Analysis in Case of Simultaneous AC-DC Power Flow
Author(s) Name	M. T. Alam
Contact Email(s)	tawhidul.alam@aiub.edu
Published Journal Name	Journal of Electrical Engineering
Type of Publication	Journal
Volume	EE 42	Issue	I&II
Publisher	IEB
Publication Date	July 2016
ISSN	0379-4318
DOI	
URL	
Other Related Info.	Page 1-7

Abstract

Simultaneous AC-DC power transmission system can improve the stability of a power system with long transmission line. A mathematical model, for stability analysis, of a simultaneous AC-DC transmission system, transmitting power through an existing AC transmission line, is proposed in this paper. Basically, the stability model is developed considering the severe most fault at the sending end bus. The salient feature of this work is to develop a solution technique for the integral component of the AC power flow during post-fault condition. This solution technique is used to develop an appropriate stability model of simultaneous AC-DC system. The validation of the model is performed through MATLAB Simulink based circuit simulation. The model is also applied to a realistic system to verify its capability in evaluating the benefits of a simultaneous AC-DC transmission system.