



Sequential Technique Based AC-DC Power Flow Analysis for Medium and Long Transmission Systems

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Abstract:

The modern electric utility industry is currently more and more attention to HVDC transmission as a practical alternative to HVAC transmission. It is useful supplement to rapid and smooth power flow control, more economical choice and small power loss for long transmission systems. An electric power system with DC links requires a special analysis for power flow study that takes their characteristics into account. This paper presents an AC-DC load flow algorithm to solve a power flow problem with DC links. This algorithm is tested using medium and long transmission standard test systems. Digital results using the proposed sequential method are compared with a previous work. The effect of load change in HVDC control parameters is studied. A comparison between HVAC and HVDC transmission systems based on power losses are also performed.

Keywords:

HVDC, sequential method, load flow AC-DC, power losses, load change, MATLAB SIMULINK.

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