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(57) Abstract :

The paper presents a novel approach for transient stability-based security state classification for modern power system networks using Kohonen's Neural Network (KNN) based pattern classifier. Pre-contingency operating conditions of a power system network was used as the input for the KNN. Critical clearing time (CCT) was used as the index for assessment of transient stability condition of the post fault system and classify the pre-contingency operating states into secure and insecure categories accordingly. The proposed approach has been implemented on the IEEE-39 bus system and the results demonstrate that the KNN classifier is capable of accurately classifying the power system operating states based on transient stability.

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