

人工三相短路试验数据验证的负荷实测建模方法

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摘要

2002年国家电网公司设立了重大项目大区电网负荷测试技术及模型完善的研究,对东北电网234个负荷变电站进行了调查,并根据调查得到的负荷比例将234个负荷点分成10类。每1类中选出1个变电站安装测量装置,建立负荷模型,从而构成了东北电网负荷模型参数库。东北电网进行了2次共4个人工三相短路试验,事后对负荷模型和仿真进行了验证。结果表明实测建立的负荷模型有较好的外推特性,用实测负荷模型仿真的精度与用大扰动数据直接拟合的负荷模型相近,因此证明了实测建模方法的有效性。

关键词 [电力系统动态仿真](#); [负荷实测建模](#); [模型泛化](#); [模型有效性验证](#); [人工三相短路试验](#)

分类号

Measurement-based Load Modeling Proved by the Data Recorded During Artificial Three Phases Ground Tests in the Power System

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Abstract

In 2002, the State Power initiates the key project on testing and improving the load model in large power grid. Under the framework of this project, 234 load substations are investigated and classified as 10 classes based on five load compositions. In each class, one substation is chosen, where one load characteristic recorder is installed. The measurements of each substation in these ten substations during the disturbance are applied to build the load model. Then these ten models are extended for each class, thus build the whole load model database for the Northeast Power Grid. During 2004 and 2005, the Northeast Power Company carried out four three-phase short circuits tests and the PMUs recorded the dynamics in the key nodes of the power grid. The validation work on the load model has been finished after the tests and the results show the good generalization capability of the measurement-based load model. The dynamics simulated from the measurement-based load model and the disturbance-based load model are very similar, which verifies the efficiency of the measurement-based load model.

Key words [power system dynamic simulation](#); [measurement-based load modeling](#); [model generalization](#); [model validation](#); [artificial three phases ground tests](#)

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