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Application and Development of Artificial Intelligence in Power Equipment State Evaluation and Maintenance

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Abstract

With the development of smart grid and the rapid expansion of power grid in China, it is very difficult to grasp and analyze the operating state of power equipment timely and accurately only by manual monitoring. In recent years, the information level of electric power has risen considerably. Data from condition monitoring system, power production management system, operation dispatching system, and environmental meteorology system are gradually integrated and shared, which have the typical characteristics of big data, i.e., volume, variety and velocity. Artificial intelligence (AI) provide new methodologies and tools for power equipment condition assessment, fault diagnosis and maintenance.

This paper investigates the development and application of artificial intelligence technology in equipment state evaluation and maintenance, including data mining, computer vision (CV), natural language processing (NLP), electric intelligent robots and so on. We will briefly summarize the basic principles of these technologies and their typical applications. The challenges of the application of artificial intelligence in the future and the relevant technologies that need to be researched are also discussed.

note: This document will be opened to the participants on IERE website before the Forum and opened to the public afterward.