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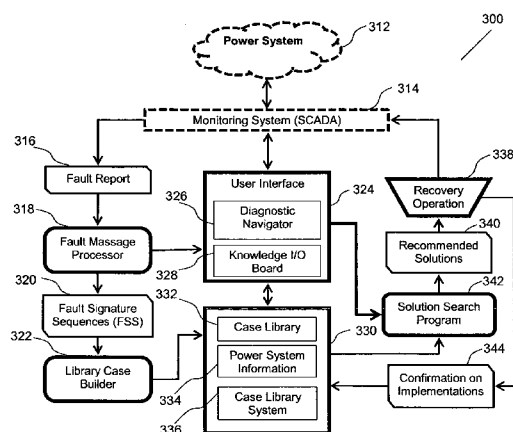


Figure 5

(57) Abstract: The present invention provides a system for fault diagnosis for a power grid system. The system performs the fault diagnosis in the following manner. The system receives a fault report from a monitoring system. When one or more fault nodes are reported by the monitoring system, a fault signature list (FSL) is generated. The FSL is then serialized to form a fault signature sequence (FSS) by a serialization process. The fault signature sequence (FSS) will then be partitioned into several sub-groups accordingly for fault diagnosing at the whole system, sub-station or circuit line level. A case record with an identification number is assigned to each partitioned fault signature sequence. These case records are stored in a database. Each case record comprises recommendations for trouble shooting and system restoration procedures. A solution search program will perform solution searching and retrieve a matched case record.