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Project Title: Designing a comprehensive information system to meet the information needs of equipment reliability models and designing an appropriate information workflow for reporting information and reliability indicators in the generation sector

Department:	Transmission network reliability development plan	Employer:	Niroo Research Institute
Project/Program Manager:	Javad Nezafat Namini	Executor:	Nikki Moslemi
Project Financial Code:	147105	Project Quality Code:	PPBPN04-2
Type of Project/Program:	Strategic	Assistant:	Power Transmission Research Institute

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Keywords: Generation equipment reliability models, data collection and storage Reliability related to generation network equipment, generation equipment data collection and storage, comprehensive information system, information workflow, system reliability indicators in the generation sector

Project Necessity: Given the importance of the issue of productivity and the growing need of the country to make optimal use of limited financial resources available, managers, decision makers and energy policymakers are forced to use new quantitative methods such as methods based on reliability. As a prerequisite for this issue, the existence of an efficient, integrated and effective database is the main basis for moving towards new approaches and should be on the agenda as soon as possible.

In Iran Electricity Industry Complex, various information systems have recorded information in different sectors of production, transmission and distribution. In this regard, it is necessary with a comprehensive scientific study as well as recognizing the needs of different departments, existing information systems are evaluated and in order to meet the information needs of maintenance planning and information needs of the legislator and other actors. Design a comprehensive information system.

Project Goals: The final achievements of the project can be summarized in the following areas:

1. Evaluate all common methods of storing information related to accidents, blackouts and maintenance in the manufacturing sector
2. Identifying all the future needs of the country in the field of reliability and formulating related information needs based on international standards and local needs

3. Assessing the capability of comprehensive information systems in Iran and determining their shortcomings in accordance with the anticipated needs

4. Determining the workflow of information related to the reliability of production equipment in order to calculate the reliability indicators of the power system

Abstract: This project intends to design a comprehensive information system to meet the information needs of equipment reliability models at the generation level and provide an appropriate information workflow method for reporting system reliability indicators in the generation sector.

Steps and Methodologies: In order to achieve a comprehensive information system for power system reliability studies, the following main phases can be enumerated for carrying out this project:

Phase 1: A Scientific Review of Existing Models of Generation Equipment Reliability and Results from Reliability-Based Studies Based on Developed Countries

Phase 2: Develop a comprehensive framework for collecting and storing reliability information related to generation equipment

Phase 3: Investigating the existing infrastructure for collecting and storing information on generation equipment in Iran and identifying its strengths and weaknesses

Phase 4: Designing a comprehensive information system in the generation sector to eliminate the weaknesses of existing information systems

Phase 5: Designing an appropriate information workflow to report system reliability indicators in the generation sector

Main Results (technical outputs, patents, papers, books, reports, etc.):

Due to the completion of the project by performing the first stage alone, the sole purpose of evaluating all common methods of storing information related to accidents, blackouts and maintenance in the generation sector has been done.