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The Investigation of NPP Control and Monitoring Functional Analysis Applied to Functional Displays' Implementation

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NPP Control and Monitoring System has been recognized as extreme and safe as well as large scale product, thus it was one of the most major design activities that fully, accurately and operationally functional analysis. The results of functional analysis would be employed as initial instruction through the whole lifecycle of NPP Control and Monitoring System. In this paper, it was discovered that several disadvantages of present functional analysis methods included FAST, The Subtract and Operate Procedure and Functional Procedure Method; owing to the identity methods enveloped here was the combination of Functional Tree and System Structure, as well as its decomposition steps; and RCS Inventory Control function which is defined as one of the most significant control functions in Advanced Light Water Reactor Utility Requirement Document has been employed to demonstrate the feasibility of this method; the analysis results of RCS Inventory function has been applied to direct the design and implementation of related displays, here the functional display of RCS Inventory Control function has been implemented on NuCON which is originated by SNPAS. Owing to the analyzing results, it would be ensured that the accuracy of information displayed to operators, thus the operator would be aware the condition of systems and then make the proper move to ensure the safety and productivity of NPP based on the received data.

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