Applying Functional Modeling for Accident Management of Nuclear Power Plant

The paper investigates applications of functional modeling for accident management in complex industrial plant with special reference to nuclear power production. Main applications for information sharing among decision makers and decision support are identified. An overview of Multilevel Flow Modeling is given and a detailed presentation of the foundational means-end concepts is presented and the conditions for proper use in modeling accidents are identified. It is shown that Multilevel Flow Modeling can be used for modeling and reasoning about design basis accidents. Its possible role for information sharing and decision support in accidents beyond design basis is also indicated. A modeling example demonstrating the application of Multilevel Flow Modelling and reasoning for a PWR LOCA is presented.

General information
Publication status: Published
Organisations: Department of Electrical Engineering, Automation and Control, Center for Electric Power and Energy, Energy System Management
Contributors: Lind, M., Zhang, X.
Number of pages: 11
Pages: 186-196
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Nuclear Safety and Simulation
Volume: 5
Issue number: 3
ISSN (Print): 2185-0577
Original language: English
Keywords: Accident management, Functional Modeling, Model Based Reasoning
Source: PublicationPreSubmission
Source ID: 102963207
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review