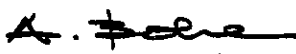


PROPOSAL FOR CREATION OF A NEW TASK FORCE

TF C6.04.02	Name of Convenor : Kay STRUNZ (USA)
<b>Title of the Group : Computational Tools and Techniques for Analysis, Design and Validation of Distributed Generation Systems</b>	
<p><b>Scope, deliverables and proposed time schedule of the Group :</b></p> <p><b>Background:</b> By the year 2030, distributed generation (DG) is expected to capture 30 % of the energy market. The success for the integration of DG will heavily rely on computational tools and effective techniques for analysis and validation of DG.</p> <p><b>Scope:</b> The scope of the proposed TF is the evaluation of existing computational tools and techniques for analysis, design and validation of DG systems, the recommendations for future tools and the development of a DG benchmark system model. The DG system dynamics considered by the TF are primarily electromechanical and electromagnetic phenomena spanning a range between 1 Hz to several thousand Hz so that the action of protective systems in response to contingencies can be studied. The working program will include :</p> <ol style="list-style-type: none"><li>1. Study of computational tools and techniques for the dynamic simulation of DG systems. These tools are mainly aimed at the testing of physical equipment within DG systems. The significance of these tools for DG system design will be investigated. The tools and techniques available as of today will be reviewed and recommendations for future specifications will be made.</li><li>2. Development of a DG benchmark system model. Such a benchmark will likely comprise models of a wind farm, a fuel cell, power electronics equipment and a connection to the transmission/distribution system with an appropriate system equivalent. This will allow the investigation of new computational challenges due to mixed and highly diverse waveforms in DG systems.</li><li>3. Studies of the DG benchmark with common simulation programs, including comparison and evaluation. Based on the outcome, recommendations for improvements will be made and ideas for future research and development work on computational techniques will be examined.</li></ol> <p>The analysis of existing techniques and tools and the proposal of further development will also take into account the need to support and facilitate the application of DG integration rules identified by the parallel TF C6.04.02.</p> <p>CIGRE TF 38.01.10 has already defined [1] characteristics of models of various new forms of generation and storage important to studies of power system dynamics in the transient stability range and slower. The proposed TF, dealing with tools and techniques to simulate such models and considering higher frequencies, is a natural extension of the work performed by TF 38.01.10.</p> <p><b>Deliverables :</b> Technical brochure with summary in Electra</p> <p><b>Time Schedule :</b> Start February 2003 <span style="float: right;"><b>Final report :</b> End 2005</span></p>	
<b>Comments from Chairmen of SCs concerned:</b>	
Approval by Technical Committee Chairman: 	Date: 19/12/02

[1] CIGRE TF 38.01.10, Convenor N. Hatziaargyriou: Modeling New Forms of Generation and Storage, November 2000.