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In this paper, a load flow calculation method for ill-conditioned power systems is developed. The proposed method is very simple, has no mathematical approximations, and requires almost no additional storage and computation time when incorporated into the normal Newton-Raphson program. Using the method, the load flow solution never diverges, and also the existence of ...

The static state of an electric power system is defined as the vector of the voltage magnitudes and angles at all network buses. The static-state estimator is a ... Published in: IEEE Transactions on Power Apparatus and Systems (Volume: PAS-89, Issue: 1, January 1970) Article #: Page(s): 120 - 125. Date of Publication ...

This paper describes the results of a survey conducted among various Electric Utilities around the world. This survey was sponsored by IEEE working group 78.1 which is presently in charge of revising and updating IEEE guide No. 80 [1]. The intend of the survey is to get acquainted with the actual international practices and methodology followed by the utilities ...

As such research focuses on the apparatus, it is more relevant to IEEE Transactions on Power Delivery. Research can also be conducted to investigate the communication aspects of advanced metering infrastructure without a direct application to power systems.

IEEE Transactions on Power Apparatus and Systems 1975 One of the major difficulties in using the Lyapunov method for on-line transient stability is the determination of the critical value of the V-function which describes the stability boundary.

The steps in the applied voltages of a three-phase, inverter-induction motor drive system cause undesirable pulsations in motor By using multiple inverters connected to a multiphase machine with appropriate winding displacements, significant improvement in system performance is possible. The winding displacements required, however, are not necessarily the symmetrical ...

Abbreviation of IEEE Transactions on Power Apparatus and Systems. The ISO4 abbreviation of IEEE Transactions on Power Apparatus and Systems is IEEE Trans. Power Appar. Syst. . It is the standardised abbreviation to be used for abstracting, indexing and referencing purposes and meets all criteria of the ISO 4 standard for abbreviating names of ...

Published in: IEEE Transactions on Power Apparatus and Systems (Volume: PAS-89, Issue: 1, January 1970) Article #: Page(s): 120 - 125. Date of Publication: 29 ... The static state of an electric power system is defined as the vector of the voltage magnitudes and angles at all network buses. The static-state estimator is a

Power system voltage stability is characterized as being capable of maintaining load voltage magnitudes within specified operating limits under steady state conditions. In this paper, the first order delay model of a load admittance change is introduced. Then, using this model, a set of linearized dynamic equations is derived and stability conditions are obtained. ...

Tests on the the modern HVDC system at Square Butte conducted in October 1977 indicated that the HVDC terminal was interacting in an adverse way with an 11.5-Hz torsional mode of an adjacent turbine- generator unit. Subsequent analytical work duplicated the field test observations and was used to develop an understanding of the HVDC-torsional interaction phenomena. As ...

IEEE Transactions on Power Apparatus and Systems Abstract: Presents the table of contents for this issue of the periodical. Published in: IEEE Transactions on Power Apparatus and Systems ...

A new model for the study of power system stability via Lyapunov functions is proposed. The key feature of the model is an assumption of frequency-dependent loa ... Published in: IEEE Transactions on Power Apparatus and Systems (Volume: PAS-100, Issue: 1, January 1981) Article #: Page(s): 25 - 35. Date of Publication: 26 February 2007 . ISSN ...

A vernier motor is an unexcited inductor synchronous motor in which a small displacement of the rotor produces a large displacement of the axes of permeance. It runs at a slow speed as if it were geared down from the speed of the rotating field set up by the stator. To design a vernier motor is equivalent to designing a polyphase reluctance motor with an odd ...

This paper describes the development and evaluation of an analytical method for the direct determination of transient stability. The method developed is based on the analysis of transient energy and accounts for the nature of the system disturbance as well as for the effects of transfer conductances on system behavior. It has been evaluated on a 10 generator 39 bus system ...

For modelling current return in homogeneous ground, the paper introduces the concept of an ideal (superconducting) current return plane placed below the ground surface at a complex distance p equal to the complex penetration depth for plane waves. This "complex" plane appears as a mirroring surface, so that conductor images can be used to derive very simple formulae for self ...

Published in: IEEE Transactions on Power Apparatus and Systems (Volume: PAS-85, Issue: 7, July 1966) Article #: Page(s): 727 - 741. Date of Publication: 29 ... A general approach is sought for transient analysis of interconnected electric power systems and design of frequency and tie-line power regulators by applying t

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IEEE Transactions on Power Apparatus and Systems - Table of contents Abstract: Presents the table of contents for this issue of the periodical. Published in: IEEE Transactions on Power Apparatus and Systems (Volume: PAS-86, Issue: 9, September 1967)

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IEEE Transactions on Power Apparatus and Systems TLDR A practical method is given for solving the power flow problem with control variables such as real and reactive power and transformer ratios automatically adjusted to minimize instantaneous costs or losses by Newton's method, a gradient adjustment algorithm for obtaining the minimum and ...

The mission of the IEEE Transactions on Power Systems is to serve the whole Power System community, including researchers, practitioners, educators and students, by publishing and disseminating insightful research results of lasting value.

This work presents an efficient algorithm for the static investment planning of large radial distribution systems. It takes into account the fixed costs, concave nonlinearities in the cost functions of all elements and the operational constraints. A concave fixed cost model is used to represent elements with large fixed costs (substations and possibly some feeders) and linear ...

State estimation is a digital processing scheme which provides a real-time data base for many of the central control and dispatch functions in a power system. Its purpose is to permit improvements in system security and data accuracy and to reduce measurement and telemetry cost. The on-line implementation of an efficient state-estimator algorithm is discussed, and its ...

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The Dommel-Tinney approach to the calculation of optimal power-system load flows has proved to be very

powerful and general. This paper extends the problem formulation and solution scheme by incorporating exact outage-contingency constraints into the method, to give an optimal steady-state-secure system operating point. The controllable system quantities ...

Nikola Tesla, the inventor of the poly-phase-current system, is best known for his contribution regarding induction and other types of alternating-current machines. His patents and his published and unpublished notes about wireless transmission of energy are less known and, if known to some extent, they are usually wrongly interpreted. For many years the author studied Tesla's ...

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The basic concepts of stationary Markov processes and particularly their application to transmission system reliability evaluation are discussed and illustrated. Transmission components are assumed to operate within a 2-state fluctuating environment described by normal and stormy weather conditions. Markov processes are used to determine the system failure rate and the ...

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