

Curriculum Vitae

Kjell Sand



Office address:
NTNU
O.S Bragstads plass 2, Elektro F-353
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Project manager/Adjunct professor
Date of birth: 1952-10-24
Nationality: Norwegian
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EDUCATION

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|------|-----|---|
| 1987 | PhD | Thesis: "Static VAR Compensators in Power Systems with Emphasis on the Use of SVC's to Enhance System Damping."
NTNU – Norwegian University of Science and Technology, Trondheim, Norway |
| 1976 | MSc | Graduated Electrical Engineer
NTNU – Norwegian University of Science and Technology, Trondheim, Norway |

KEY QUALIFICATIONS

- Smart grids
- Power systems simulation, planning , technical and economical analysis
- Life cycle cost analysis
- Quality of supply - Power Quality – Power System Reliability
- Power Systems Risk management
- Regulatory issues (monopoly regulation of TSOs and DNOs, benchmarking)
- Power system tariffs and cost issues
- Power System Standardisation (IEC, CENELEC)
- Design and development of power system analysis software - Network Information System development

LANGUAGES

Norwegian (mother tongue), English, (German) , (French)

EMPLOYMENT RECORD

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|-------------|---|
| 2015- | NTNU Norwegian University of Technology and Science, Faculty of Information Technology, Mathematics and Electrical Engineering , Project Manager |
| 2011- | The Norwegian Smartgrid Centre
Role as Scientific Manager |
| 2007- | NTNU Norwegian University of Technology and Science, Electric Power Engineering
Adjunct professor |
| 1998 –2005 | Powel ASA
Product Manager Network Information System (50-90% part time) |
| 1978 –2015 | SINTEF Energy Research, Energy Systems
1994 – 2015 Senior Research Scientist
1987 – 1993 Group Manager, Power Distribution Systems Research Group
1984 – 1987 Scholarship from the Norwegian Water Resource and Energy Directorate (PhD study) |
| 1976 – 1978 | 1978 – 1984 Project Engineer and Project Manager, Transmission and Distribution
NTNU Norwegian University of Technology and Science, Electric Power Engineering
Scientific assistant |

TEACHING EXPERIENCE

Responsible for experts in teamwork (EIT) on Smart grids at NTNU 2011-2012. Experts in Teamwork is a mandatory master student course in which students apply their academic competence in interdisciplinary project work to learn teamwork skills to prepare them for working life.

Adjunct professor at Norwegian University of Science and Technology, giving courses in quality of supply: Reliability and power quality/voltage quality

Guest lecturer and external examiner at Norwegian University of Science and Technology in different courses at MSc and PhD level.

Supervisor for a large number of graduate students working with their master thesis at Norwegian University of Science and Technology, Department of Electrical Power Engineering. External examiner for various master's thesis.

Lecturer for a large number of lectures for personnel (MSc and BSc) at Norwegian electricity utilities in topics related to distribution system planning, reliability analyses, fault and interruption statistics and interruption costs.

Lecturer at international courses (NORAD courses) at the Norwegian University of Science and Technology in power system planning and analysis for international student from developing countries 1979-1994

MEMBERSHIP IN PROFESSIONAL SOCIETIES

The Norwegian Society of Chartered Technical and Scientific Professionals (Tekna)

Norwegian Electrotechnical Association (NEF)

International Conference on Large High Voltage Electric Systems (CIGRE)

European Safety and Reliability Association (ESRA)

MEMBERSHIP IN TECHNICAL COMMITTEES AND WORKING GROUPS

2013-	CENELEC – BT WORKING GROUP No. 143-2 “Mirror ENTSO-E Activities”
2013-	IEC TC8 WG 6 Generic Smart grid requirements
2012-	IEC TC8 WG5 (Smart Grid) Methodology and Tools
2012- 2013	Norwegian member of Project Steering Group Renewable <i>Energy Technology Deployment (RETD)</i> , IEA Implementing Agreement,(nominated by Enova).
2011-2013	Norwegian member of IEC TC8 AHG4 Smart Grid Requirements
2011-2013	TC8X representative in Smart Grid Coordination Group (SGCG) of CEN, CENELEC and ETSI - Working. Group Sustainable Processes
2010-2014	Norwegian member of CIGRE WG C1.25 Risk Management and Information Processes for Asset Management in Electricity Transmission Companies for current and future power systems.
2009-	CENELEC TC8X , WG4 : Endorsement of IEC 60038 as European Standard
2007-2009	Norwegian member of CIGRE WG C1.16 Transmission Asset Risk management
2004-	CENELEC TC8X , WG1 Physical characteristics of electrical energy supply
2004-	IEC TC8 System aspects of electricity supply
2004-	CENELEC TC8X System aspects of electricity supply
2003-	Convenor of NEK NK8 Electrical transmission and distribution systems
1991 – 2003	CENELEC CLC/BTTF 68-6 "Voltage characteristics of electrical energy supplied by public systems to tariff customers".
1989-1998	Norwegian member of CIGRE Study Committee 36 "Power System Electromagnetic Compatibility
1988-1998	Norwegian member of CIGRE WG36-05 "Harmonics, voltage unbalance, voltage dips and voltage fluctuations
1987 - 1992	Member of CIGRE WG38 01 TF4 "Analysis and optimization of SVC use in transmission systems
1981 – 1985	NEVF - AG7: Working group on the use of capacitor banks in power systems.

1978 – 1981 NEVF - EDB-2: Working group on computer system for distribution system planning and documentation.

HONORARY POSITIONS

2014-2015 Board member SINTEF Energy Research Board of Directors
 2013-2014 Deputy board member SINTEF Energy Research
 2013- Board member Global Smart Grid Federation Board of Directors
 2012 Invited speaker IEC General Meeting 2012 –Open session
 2003 - 2009 President Norwegian Electro Technical Association
 1995 - 2003 Chairman, Norwegian Electro Technical Association Trondheim Group
 1994 - 1995 Vice chairman, Norwegian Electro Technical Association Trondheim Group
 1990 - 1997 Member of EFIs Board of Directors

CONFERENCE ORGANIZATION

1990- Member of NEF Technical Meeting Organising Committee
 2003 – 2015 Member of CIRED Directing Committee
 2003 – 2015 Member of NORDAC Organising Committee
<http://www.energy.sintef.no/arr/nordac/>

PROJECTS (some key projects and role)

2012- 2014 **DeVID- Demonstration and Verification of Intelligent Distribution networks.**
 Role: Work package manager for two out of six WPs Client: An IPN project for The Research Council of Norway, Norwegian utilities and industries

2011- **Next Generation Control Centres for Smart**
 Role: Project manager, Client:Norwegian utilities, international manufacturers, NTNU

2007-2012 **A new concept for power quality and reliability measurement and management – the PQM project ,**
 Role: Project manager, Client: A KMB project for The Research Council of Norway, Norwegian and international utilities
<http://www.sintef.no/Projectweb/PQM/>

2006-2011 **Risk-based distribution system asset management ,**
 Role: Project manager, Client: A KMB project for The Research Council of Norway, Norwegian and international utilities
<http://www.energy.sintef.no/prosjekt/riskdsam/>

2006 **Task based/norm based income cap grid regulation,**
 Role: Project manager, Client: Norwegian utilities

2003-2007 **Sustainable Energy Distribution Systems - Planning Methods and Models (SEDS)**
 Role: Project participant, Client: A KMB project for The Research Council of Norway, national energy companies and The Norwegian Water Resources and Energy Directorate (NVE)
<http://www.energy.sintef.no/prosjekt/seds/>

2004 – 2005 **Grid regulation 2007 – Incentives for investments – including power quality and safety.**
Role:Project Manager
 Client: Norwegian Electricity Industry Association (EBL)

2003 – -2004 **Power Quality Regulation**
 Role: Project participant Client: Norwegian Water Resources and Energy Directorate (NVE).

1997 – 1999 **LCC analysis – development of software package**
Role: Project Manager
 Client: Powel ASA

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- 1991 – 2005 **International standardization of electricity as a product – development of EN50160.** Norwegian member of CENELEC Taskforce BTF 68-6 and TC8X/WG1
Various clients
- 2003 **Preparatory studies before the next regulative period 2007 – 2011**
Role: Project Manager
- Regulative provisions' impact on investments
 - Alternatives to network investments
 - Demand for investments in electric power networks
- Client: Norwegian Water Resources and Energy Directorate (NVE).
- 2003 **VARFIN – Introduction of benchmarking and a possible new regulatory regime in the Water and Wastewater sector**
Role: Project Manager
Study on possible new financing regime for Water and Wastewater sector in Norway, including recommendations on benchmarking systems.
Clients: Ministry of Local Government and Regional Development and NORVAR, the Norwegian Association of Water Suppliers and Wastewater Services
- 2002 – 2003 **Comparison of the Regulating Regimes in Scandinavia**
Role: Project Manager
Assessment of existing regimes in order to evaluate possible harmonising, with special emphasis on benchmarking models.
Clients: Nordic Electricity Industry Associations
- 1995 – 2002 **Various benchmarking projects for Nordic of network companies**
Assessment of efficiency performance by use of different DEA models
Clients: Various network companies in Scandinavia
- 1994 – 1997 **Strategic Institute Program: Power systems subjected to adverse weather conditions**
Risk analysis, vulnerability, security and reliability of supply, framework for management, mechanical design
Role: Project Manager
Client: The Research Council of Norway
- 1993 – 1994 **Principles for - and analysis of the connection of disturbing loads to the power system**
Role: Project Manager
Clients: BKK (main client), utilities
- 1992 – 1994 **Development of an application guide for subtransmission and distribution system planning (4 volumes)**
Role: Project Manager
Clients: Utilities
- 1991 – 1996 **The Norwegian Power Quality Program**
Power system quality- standards, quality of supply regulation, simulation and decision tools, power quality measurement
Role: Project Manager
Clients: Utilities, Norwegian Electricity Industry Association, Norwegian Water Resources and Energy Directorate (NVE)
- 1989 – 1991 **Survey and Analysis of power systems quality and costs**
Role: project manager at EFI (now SINTEF Energy Research)
Client: Norwegian Water Resources and Energy Directorate (NVE).
- 1988-1991 **DYNKO – reengineering of computer tool for cost optimization based on dynamic programming.**
Role: Project Manager Clients: Utilities, Norwegian Water Resources and Energy Directorate (NVE)
- 1987 – 1988 **Analysis of HVDC and SVC applications in the Norwegian power system**
Role: Project Manager
Client: Statkraft (now Statnett)
- 1984 **Planning of a SVC installations for an arc furnace plant for voltage fluctuation compensation including harmonic measurements and filter design**
Role: Project Manager Client: Norsk Jernverk (industry)
- 1981 **Analysis of renewable energy sources in the Norwegian power system (wind and wave power)**
Role: Project participant, Client: Ministry of Petroleum and Energy

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- 1981 – 1984 **Development of a network information system for network planning, asset management, operation and maintenance- The NETBAS project**
Role: Project Manager
Clients: Utilities, Norwegian Electricity Industry Association, Norwegian Water Resources and Energy Directorate(NVE)
- 1980 – 1982 **Optimization of shunt compensation Hedmark, Vestfold, Akershus Bærum and various industrial plants including analysis of power system harmonics**
Role: Project Manager Clients: Utilities
- 1978-1981 **KBRAD – Development of computer program for optimization of compensation in distribution systems,**
Role:Project Manager Clients: Utilities, Norwegian Electricity Industry Association, Norwegian Water Resources and Energy Directorate(NVE)
- 1978 – 1981 **Power system planning in the counties of Østfold, Hedmark and Valdres**
Project Manager Client: Norwegian Water Resources and Energy Directorate (NVE).

PUBLICATIONS (only publications in English are listed)

Books/ book contributions

- CIGRE Brochure no. 597
Transmission Asset Risk Management
Progress in Application
CIGRE 2014
- Karki, Rajesh, Billinton, Roy, Verma, Ajit Kumar (Editors)
Reliability Modeling and Analysis of Smart Power Systems
Springer 2014
ISBN 978-81-322-1797-8
- CIGRE Brochure no 541
Asset Management Decision Making using different Risk Assessment Methodologies for Electricity Transmission
Working Group C1.25
CIGRE 2013
- Catrinu Maria Daniela, Nordgård Dag Eirik, Sand Kjell
Decision support for risk-based electricity distribution system asset management.
Reliability, Risk and Safety - Back to the future. (s. 2272-2277). London: CRC Press 2010
- CIGRE Brochure no 422
Transmission Asset Risk Management
Working Group C1.16
CIGRE 2010
- Ervik, M. ; Sand, K .
Transmission and Distribution
Books series Hydropower development, NTNU 2003, ISBN 82-7598-031-03
- CIGRE Brochure no 77
Analysis And Optimization of SVC Use In Transmission Systems
Task Force No 4 of Working Group 38.05
CIGRE 1993

International Journals

E. Rijks (NL, convener), G. Sanchis (FR, secretary), E. Hill (US), G. Ford (CA), Y. Tsimberg (CA), S. Admiraal (NL), G. Balzer (DE), J. La Grange (ZA), J. Schuddebeurs (NL), P. Schuett (CH), A. Krontiris (DE), R. Meier (CH), D. Curtis (CA), D. Pankhurst (AU), K. Sand (NO), R. Zacheo (IT), S. Voronca (RO)
Transmission Asset Risk Management Progress in Application
ELECTRA No. xx, CIGRE (to be published)

E. Rijks (NL), G. Sanchis (FR), G. Ford (CA), E. Hill (US), Y. Tsimberg (CA), A. Krontiris (DE), P. Schuett (CH), G. Balzer (DE), K. Sand (NO), R. Zacheo (IT), R. Kuik (NL), J. Scuddebeurs (NL), D. Pankhurst (AU), H. de Beer (AU), M. Zunec (SI), S. Voronca (RO)
Asset management Decision Making using different Risk Assessment Methodologies.
ELECTRA No 268 June 2013, CIGRE

E. Rijks (NL), G. Sanchis (FR), G. Ford (CA), E. Hill (US), Y. Tsimberg (CA), T. Krontiris (DE), P. Schuett (CH), M. Zunec (SI), K. Sand (NO)
Overview of Cigré publications on Asset Management Topics
ELECTRA No 262 June 2012, CIGRE

Eric Rijks, Convenor (NL), Gérald Sanchis, Secretary (FR), Gary Ford (CA), Tim Jesson (GB), Gerd Balzer (DE), Toshihiro Takano (JP), Larry Haffner (CA), Simona Voronca (RO), Kjell Sand (NO), Stefan Federlein (DE), Han Slootweg (NL), Armin Gaul (DE), Bernhard Sander (CH)
Transmission Asset Risk Management
ELECTRA No 251 2010, CIGRE

Sand, K. ; Seljeseth, H.; Samdal K.:
Power Quality Regulation in Norway
Electrical Power Quality and Utilisation, Magazine Vol. I, No. 1, 2005

Kjølle, G.; Sand, K.:
RELRAD - an analytical approach for distribution system reliability assessment
Proceedings of IEEE Transmission and Distribution, Dallas, Texas 1991
IEEE Trans. on Power Delivery, Vol. 7, No. 2, 1992, pp. 809-814

Conference Papers/Proceedings

Richard Tokle Schytte, Kjell Sand, Rolf Erlend Grundt
Use cases for efficient network integration of Smart home PV
Accepted for CIRED 2015, Lyon

Kjell Sand, Hanne Sæle, Ove Grande
Smart Tariffs – In an Active Distribution Grid
Accepted for CIRED 2015, Lyon

Erling Tønne, Jan A Foosnæs, Kjell Sand
New Planning Method for Smart and Active Distribution Grids
Accepted for CIRED 2015, Lyon

Kjell Sand
Evaluation methodology for Smart Grid Use Cases
NORDAC 2014 Stockholm

Helge Seljeseth Kjell Sand Ketil Sagen
New electrical equipment and appliances causing voltage quality challenges in the distribution network
CIRED 2013 Stockholm

Kjell Sand Dag Eirik Nordgård Tarjei Benum Solvang, Jan Foosnæs Vidar Kristoffersen Dagfinn Wåge
Experiences from Norwegian smart grid pilot projects
CIRED 2013 Stockholm

Kjell Sand, Vidar Kristoffersen, Eilert Henriksen

Smart Energy Hvaler

NORDAC 2012 The 9th Nordic Electricity Distribution and Asset Management Conference 2012, Espo

Helge Seljeseth, Kjell Sand and Tarjei Solvang

Distribution system challenges due to new electrical appliances

NORDAC 2012 The 9th Nordic Electricity Distribution and Asset Management Conference 2012, Espo

Dag Eirik Nordgård, Kjell Sand, Ruth Helene Kyte, Eilert Bjerkan, Tarjei B. Solvang, Knut Samdal

Solutions from a national Smart grids demonstration site exploring a fiber-optic communication infrastructure

IEEE General meeting San Diego 2012

Erling Tønne; Kjell Sand; Jan A. Foosnæs; Rune Paulsen

Integration of distributed generation into mv distribution grid in Norway – the Namsskogan case.

CIREC Workshop - Lisbon 29-30 May 2012

Oyetoyan, T.D., Conradi, R. and Sand, K.,

Initial Survey for Smart Grid Activities in the Norwegian Energy Sector - Use Cases, Industrial Challenges and Implications for Research,

ICSE 2012 International Workshop on Software Engineering Challenges for Smart Grid

Gunderson Nina Wahl, Sand Kjell

Integration of electric vehicles to the distribution grid.

21st International Conference and Exhibition on Electricity Distribution : CIREC 2011 Prague

Sand Kjell.

The 2008 Norwegian quality of supply survey - State of art and reported needs.

International Conference on Renewable Energies and Power Quality (ICREPC'10)

Granada 2010

Gundersson Nina Wahl, Sand Kjell

Integration of electrical vehicles to the distribution grid

NORDAC 2010 : the 9th Nordic Electricity Distribution and Asset Management Conference 2010, Aalborg

Nybø Agnes, Kjølle Gerd, Sand Kjell

Vulnerability in power systems - the effect of maintenance and reinvestments.

NORDAC 2010 : the 9th Nordic Electricity Distribution and Asset Management Conference 2010, Aalborg,

Sand, K.; Nordgård, D.E.; Solum, G.; Storset

A risk based modeling approach supporting long term maintenance and reinvestment strategy decision making

CIREC Workshop on Sustainable Distribution System Asset Management and Financing ,
7-8 June 2010 Lyon

Sand, K.; Aupied., J.; Spruyt, F.:

Application of Bayesian Networks for Maintenance and Risk Modelling

PMAPS 2010 - 11th International Conference on Probabilistic Methods Applied to Power Systems

14-17 June 2010 , Singapore

[Risk assessment methods applied to electricity distribution system asset management](#)

Dag Eirik Nordgård, Kjell Sand, Ivar Wangensteen

ESREL 2009

7-10 September , Praha

Laboratory Tests of Electrical Appliances Immunity

Helge Seljeseth, Kjell Sand, Kjell Erik Fossen,

CIREC 2009 Prague

Sand Kjell, Berge Øystein Randal
Sustainable grid regulation guidelines.
NORDAC 2008
September 8-9, 2008 Bergen

Next Generation Power Quality Management

Kjell Sand, Helge Seljeseth,
NORDAC 2008
September 8-9, 2008Bergen,

Performance indicators for Distribution System Risk Management

Kjell Sand, Maria Catrinu
NORDAC 2008
8-9 September, Bergen

Application of Bayesian Belief Networks in Electricity distribution system maintenance management'

Dag Eirik Nordgård, Kjell Sand
ESREL 2008
22-25 September, Valencia

Application of Bayesian Networks' in distribution system risk management

Kjell Sand, Sylvie Bonnoit, Jean Aupied
PMAPS 2008 - 10th International Conference on Probabilistic Methods Applied to Power Systems
25-29 May, Puerto Rico

A risk based approach to electricity distribution system asset management

Dag Eirik Nordgård, Maren Istad, Kjell Sand
EuroMaintenance 2008
8-10 April, Brussels

Nordgård Dag Eirik, Sand Kjell, Gjerde Oddbjørn, Catrinu Maria Daniela, Lassila Jukka, Partanen Jarmo, Bonnoit Sylvie, Aupied Jean
A risk based approach to distribution system asset management and a survey of perceived risk exposure among distribution companies.

19th International Conference on Electricity Distribution : CIRED 2007. Vienna

Sand Kjell, Storset Kjetil, Samdal Knut, Nordgård Dag Eirik
Distribution network operator regulation - a task-oriented approach.
19th International Conference on Electricity Distribution : CIRED 2007. Vienna

Multi-criteria decision support in distribution system asset management

Maria D.Catrinu, Dag E. Nordgård, Kjell Sand, Jane-Kristin Norhagen
CIRED 2007
21-24 May, Vienna

Risk based Distribution System Asset Management – looking ahead

Kjell Sand
CIGRE Seminario Internacional 2006
Buenos Aires. (presentation)

Risk based Distribution System Asset Management – the Norwegian experience

Kjell Sand
CIGRE Seminario Internacional 2006
Buenos Aires. (presentation)

Nordgård, D.E.; Sand, K; Stene, B.:
Risk based distribution system asset management
NORDAC 7th Nordic Distribution and Asset Management Conference, Stockholm, 21-22 August 2006

Sand, K; Storset,K; Samdal,K; Nordgård, D.E.:

Task-oriented regulation of DSOs

NORDAC 7th Nordic Distribution and Asset Management Conference, Stockholm, 21-22 August 2006

Tahvanainen, Kaisa; Viljainen, Satu; Lassila, Jukka; Honkapuro, Samuli; Partanen, Jarmo; Järventausta, Pertti; Kivikko, Kimmo; Antila, Sauli; Sand, Kjell; Nordgård, Dag Eirik;

Regulatory environments in relation to the obligations and rights of electricity distribution companies - examples of Nordic experiences

CIREC 18th International Conference on Electricity Distribution, Turin, 6-9 June 2005

Seljeseth, H.; Sand, K.; Samdal K.:

Quality of supply regulation in Norway Going beyond EN 50160

CIREC 18th International Conference on Electricity Distribution, Turin, 6-9 June 2005

Sand, K.:

Decision support for effective asset and maintenance management

EuroDoble Colloquium, Krakow, 2004

Sjøvold, F.; Sand,K.:

Benchmarking the Water and Wastewater sector in Norway – approaching a new regulatory regime?

ACTUI 2004, Exeter, United Kingdom, 2004

Øye, Reidar; Hansen, Pål Ivar; Sand, Kjell;

Distribution system risk management : decision support including reliability aspects

NORDAC 6th Nordic Distribution and Asset Management Conference, Espoo, 23-24 August 2004

Sand, K.; Seljeseth, H.; Samdal K.:

Power Quality Regulation – status and trends

NORDAC 6th Nordic Distribution and Asset Management Conference, Espoo, 23-24 August 2004

Sand, K.; Nordgård, D.E.:

Comparison of Nordic benchmarking models

NORDAC 6th Nordic Distribution and Asset Management Conference, Espoo, 23-24 August 2004

Sand, K.:

The Use of Payment for Electricity not Delivered in Norway: Is It Enough to Give Incentives for Investments?

Market Design 2003, Stockholm, June 2003

Sand, K.; Øye, R.; Ysberg, U.:

Asset management and decision support in a costcutting regime

CIREC 17th International Conference on Electricity Distribution, Barcelona, 12-15 May 2003

Sand, K., Øye, R., Hansen, P.I., Løvseth, K. :

Distribution system asset management: Network information systems versus ERP systems

NORDAC - 5th Nordic Distribution and Asset Management Conference, Copenhagen, 7 - 8 November 2002

Jordanger, E.; Sand K.; Kristensen R.:

Method for calculations of costs of electric power system losses

CIREC - 16th International Conference on Electricity Distribution, Amsterdam, 18 - 21 June 2001

Sand, K.; Nilsson, T.; Stølen, I.:

Integration of Computer Systems for improved distribution system operation and customer service

CIREC 15th International Conference on Electricity Distribution, Nice, 1-4 June 1999

Sand, K; Eriksen, T; Johansen, K H

Power quality dependent transmission tariffs, evaluation different voltage interruption arrangements with the customer

EPRI, EdF, Elforsk, PQA-97, Stockholm, 16-18 juni 1997

Sand, K.:

Power quality and standardization - the situation in Norway

International Conference on Quality of power and standardization, Tallinn, Estonia, June 1996

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- Haugland, O.; Ryen, K.; Sand, K.; Henriksen, M.:
Power supply to an industrial plant with a 200 MW variable speed drive load - power quality considerations
PQA '95, New York, 1995
- Wangensteen, I; Livik, K; Sand, K
Network and demand side planning in a deregulated market situation with third party access
International Conference on Electricity Distribution (13 : 1995 : Brussel). CIRED 95
- Sand, K.; Kjølle, G.H.; Nordby, M.:
Quality of Supply in Public Electrical Supply Systems
CIRED 12th International Conference on Electricity Distribution, Birmingham, 17-21 May 1993
- Toftevaag, T; Hofstad, P; Sand, K
Voltage quality, electrical losses and reactive compensation within wind farms
EWEA. The Potential of Wind Farms, Herring, September 8-11, 1992
- Sand, K.; Kjølle, G.H.; Bilberg, J.:
Reliability Aspects Concerning Distribution System Expansion Planning
CIRED 10th International Conference on Electricity Distribution, Brighton, 1989
- Sand, K.; Solvang, E.; Wold, R.T.; Langdal, B.I.:
Experience of Using Relational Database Systems for Power System Planning, Operation and Documentation Purposes
UNIPED, Antwerpen, 1989
- Flatabø, N.; Johannesen, A.; Sand, K.; Solvang, E.; Wold, R.T.:
An Integrated Tool for Production Scheduling, Network Analysis and Maintenance Planning in a Hydro Thermal Power System
CIGRE Symposium, Bangkok, 1989
- Sand, K.; Solvang, E.; Svendsen, V.:
An Integrated System for Electrical Distribution System Planning, Operation and Documentation
CIRED, Liege, 1987
- Aase, A.; Hofstad, P.; Rolfseng, L.; Sand, K.:
Alternative Design of Distribution Cable Networks for New Housing Estates
CIRED, Brighton, 1985
- Sand, K.; Foosnæs, J.A.; Solvang, E.:
Allocation of Shunt Capacitors in Rural Distribution Networks
CIRED, Liege, 1983
- Johannesen, A.; Rolfseng, L.; Sand, K.; Voldhaug, L.:
Application of Microcomputers in the Design of Distribution Networks
UNIPED Seminar, Trondheim, June 1980
- Johannesen, A.; Rolfseng, L.; Sand, K.; Voldhaug, L.:
Demonstration of the application of microcomputers in the design of distribution networks
UNIPED Seminar, Trondheim, June 10-12, 1980
- Johannesen, A.; Rolfseng, L.; Sand, K.; Dahl, E.; :
Planning and Design of Public Electrical Supply Systems
CIRED, Brighton, 1981
-