Paperbase Alerting Service Sample

Energy production, comsumption and conservation

00001
PI: 20202500 JA: 0202
TI: How to decrease energy costs using the opportunity of replacing the old power boilers: Champion Mogi Guacu energy project: case study
AU: Bianchi W
CI: 33rd pulp and paper annual congress, Sao Paulo, Brazil, 23-26 Oct. 2000, 11pp <Sao Paulo, Brazil: Associacao Brasileira Tecnica de Celulose e Papel, 2000> (K, P)
CT: BOILER/ COMPANY INFORMATION/ CONFERENCE/ NEW INSTALLATION/
CN: Associacao Brasileira Tecnica de Celulose e Papel; Champion Papel e Celulose
AB: The two new high pressure oil fuelled boilers have recently been inaugurated by Champion, Mogi Guacu, Brazil, to replace a series of old boilers. The new power plant was internally designed and carefully planned, and its final cost was USD30.4m, USD3m less than initially predicted. The power is geared to Champion's integrated pulp and paper plants demanding 53MW of energy. Previously, Champion had to buy energy since the old boilers produced only 16.5MW. The new power plant project, named Project Energy, started in 1997 and was completed in 1999, 2 months ahead of schedule. The careful planning plus the good integration between Champion and the various suppliers ensured that the staff of the former would be fully trained in the operation and maintenance of the power plant. (4 fig, 2 tab)
SO: B

00002
PI: 20203076 JA: 0202
TI: Electricity is good for a shock
AU: Anon
JN: Int. Papwirtsch. $IS=0070-4296
CI: no. 8, 2001, pp 19-21 (C, K, P, S)

CT: COMPARISON/ ELECTRICITY/ ENERGY/ PRICE/ WORLD/
AB: Electricity costs vary widely around the globe and are increasingly affected by deregulation, mergers and competition. Italian electricity is the most expensive in the world costing Euro0.09/kWh, followed by the USA with an average Euro0.0818/kWh. Market liberalisation in the Netherlands has resulted in 3.6% lower prices with some users saving up to 20% by switching suppliers. Competition has also led to a 1.8% drop in the French electricity price. All other countries saw prices rise by 7.3%-25.0% between 2000-2001. Deregulation has not stopped electricity prices rising 8.6% to Euro0.0572/kWh in Germany and 9.3% to Euro0.0566 in the UK. South Africa produces the world's cheapest electricity at Euro0.0276/kWh, up 8.8% on 2000 with further increases expected.
SO: B

00003
PI: 20203524 JA: 0202
TI: Filling the energy gap: with wood
AU: Weaver F
JN: Views. Finn. Technol. $IS=1238-2116
CI: 2001, pp 36-37 (K)
CT: CHIPPING/ ENERGY PRODUCTION/ PELLET/ SAWDUST/ WOOD/
AB: Finland is struggling to fulfil commitments drawn up at the Kyoto climate convention in 1997 and proposals to build a fifth nuclear power station have been vehemently opposed. Increasing the use of renewable biofuels can go some way towards filling the energy gap. In greenhouse terms, the carbon dioxide released during the combustion of wood is quickly bound up again in a new generation of trees, in fact Finland's forests act as a net carbon sink, as they are presently growing faster than they are being cut down. Over 100 new heating and power plants capable of using wood chips are planned to be built in Finland in the next decade, so there will be no shortage of demand. However, improving cost efficiency and logistics to makes these new fuels competitive is problematical. With the right technology, the collection, chipping and transportation of logging residue can be cost efficient. Developing the technology to promote the use of wood as a renewable energy source is also part of the Climtech Technology and Climate Change programme, which aims to limit greenhouse gas emissions in Finland and promote the export of Finnish technology to limit emissions elsewhere.
SO: B

00004
PI: 20204558 JA: 0203
TI: The world's largest power plant for biofuel produces competitive energy (8 articles)
AU: Kinnunen L
JN: Energia $IS=0781-9463
CI: vol. 17, no. 9, pp 24-32 (K)
CT: BIOFUEL/ BOILER/ CFB/ CIRCULATING FLUIDISED BED/ COGENERATION/ COMPETITIVENESS/ ENERGY PRODUCTION/ NEW INSTALLATION/ PAPER MILL/ POWER GENERATION/ POWER PLANT/ PULP MILL/ STEAM TURBINE/
CN: Alholmens Kraft; UPM-Kymmene
AB: A biofuel plant, owned by Alholmens Kraft, Finland, based on an innovative concept has been the focus of attention worldwide. The project is managed by Pohjolan Voima

which owns 49.9% of Alholmen; other owners are Swedish energy companies Graningeverkens AB and Skelleftea Kraft AB. A second unit based on the same concept is being built in the USA. The construction of the Alholmen plant was started in spring 1999 and the installation was complete in May 2001. After trial runs in August, the plant was put into full production in October/November 2001. The energy output of the plant's boiler is 550MW. The capacity is about double the usual capacity of fluidised bed boilers where biofuel is used. The giant biofuel boiler is the largest circulating fluidised bed (CFB) in the world, 8.5m x 24m in size, with a height of 40m. The turbine was designed jointly by Finnish Energico Oy and Russian LMZ.
SO: B

00005
PI: 20204566 JA: 0203
TI: Increased need of closed-circuit operation?
AU: Franksson A
JN: Nord. Papp. Massa
CI: no. 5, 2001, p. 45 (K, S)
CT: ELECTRIC ENERGY/ ENERGY/ ENERGY PRODUCTION/ ENERGY SUPPLY/ PRICE/
AB: The consumption of electric power in Sweden in 1996-2000 increased by about 1%/y when the production of power stations has been reduced by 3,000MW. While no new power stations are planned in the immediate future, consumption is nevertheless expected to increase. This will consequently increase the insecurity of electric power users. A pulp mill has the possibility of forming its own electrical network which involves the use of one or some vapour turbines to establish a synchronised linked network and supply power to a restricted area. Opportunities to test such networks are lacking nevertheless, and techniques should be developed to carry out simulations of systems. A commercial simulation equipment has been developed by Solvina together with Svenska Kraftnat; it is called SolvSim Power StationHWIL (SSPS) and used for verfication and optimisation of frequency regulation. The frequency regulator is attached to a computer which then simulates a network with loads and possibly other production sources.
SO: B

00006
PI: 20204587 JA: 0203
TI: Tissue sector claims for a little more electricity
AU: Mercante Savastano R
JN: Papel $IS=
CI: vol. 62, no. 7, July 2001, pp 52-53 (C, K, S)
CT: ELECTRICITY/ ENERGY CONSUMPTION/ ENERGY SUPPLY/ PAPER INDUSTRY/ SHORTAGE/ TISSUE PAPER/
AB: Brazil's power shortage has been just as unkind to the country's industry as to individual consumers. The cuts in supply have placed the tissue paper industry in dire straits. Bracelpa is trying to negotiate a reduction of the cut from 25% to 15% and many other industries are leasing or buying generators, while some are already considering having to lay off staff. One of the few Brazilian paper industries that is getting by unscathed is Klabin Kimberly, Santa Catarina, the only tissue manufacturer that has an

integrated production system and whose plants are mostly in Southern Brazil, the only region unaffected by the power cuts.
SO: B

00007
PI: 20204628 JA: 0203
TI: Results of a survey about fuels and electricity consumption by the Spanish pulp and paper industry in 1996
AU: Asenjo J L; Baena A
JN: Invest. Tec. Pap. $IS=0368-0789
CI: vol. 35, no. 137, July 1998, pp 477-487 (C, K, P, S)
CT: ELECTRIC POWER/ ELECTRICITY/ ENERGY CONSUMPTION/ FUEL/ PAPER INDUSTRY/ PULP INDUSTRY/ SURVEY/
AB: Statistics are presented on power cogeneration and power consumption in Spain for 1996, including an appraisal of the evolution of these since 1990, when the information began to be recorded by Spain's Permanent Committee on Energy. During 1996 the Spanish pulp and paper industry consumed and produced more energy than the previous year, having managed to reduce its need to purchase more energy and even having some surplus to sell out. This was partly due to the fact that the Spanish production of pulp and paper decreased slightly in 1996 in relation to 1995. In Spain, the most important source of power for the pulp and paper industry comes from thermal electricity, which in turn is mostly based on natural gas and oil as fuel. (2 fig, 8 tab)
SO: B

00008
PI: 20205052 JA: 0203
TI: Installation of an integrated turbine-generator control system for a pulp mill
AU: Weaver M; Hilder S; Brown D R
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 1-9 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: COMPANY INFORMATION/ CONFERENCE/ CONTROL SYSTEM/ NEW INSTALLATION/ PULP MILL/ TURBOGENERATOR/
CN: Canadian Forest Products Ltd; IEEE Industry Applications Society
AB: Canadian Forest Products Co's Northwood pulp mill, BC, Canada, has two high efficiency rotary turbine-generator units rated at 32.2MVA each, as well as a heat sink capable of generating 47MW; approximately 87% of the mill's power needs. The turbine generator controls had many times been unable to survive the loss of utility tie line connections and a project for their replacement was initiated. The project scope was divided into three parts, governor; excitation; generator protection, and a specification was written for each segment of the project. Decisions were made concerning what equipment would be retained and which would be replaced, with equipment associated with safe shutdown of the turbine/generator was retained and serviced. A triple modular redundant control system was installed for each unit. These systems integrate turbine governor controls and generator excitation control systems in a single digital control and are connected, jointly co-ordinating despatch of real and reactive power demands. The new system enables automatic start-up, loading and synchronising of both generators. Both integrated control systems dynamically share the steam pressure control and

voltage functions, allowing the mill to fully realise the benefit of the process heatsink. (8 fig)
SO: B

00009
PI: 20205055 JA: 0203
TI: Proper use of active harmonic filters to benefit pulp and paper mills
AU: Johnson J R
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 21-30 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CONFERENCE/ ELECTRIC POWER DISTRIBUTION/ FILTER/
CN: IEEE Industry Applications Society
AB: Active harmonic filters (AHFs) are sophisticated electronic devices which offer significant advantages over traditional harmonic mitigation and displacement power factor correction methods. AHFs can be designed with two types of control schemes. One performs fast Fourier transforms (FFT) to calculate the amplitude and phase angle of each harmonic order; the other method is called full spectrum cancellation, in which the control algorithms are analog. A simple spreadsheet may be used to determine the amount of AHF system required for any combination of linear or nonlinear loads for a desired TDD level. AHF performance is independent of the interactions between the nonlinear loads and the alternating current (AC) source. Power factor capacitors should be upstream of the AHF current transducers to prevent resonance or system overload. The AHF can also be used as a power factor correction device without the side effects of power factor capacitors. (8 fig, 8 tab)
SO: B

00010
PI: 20205059 JA: 0203
TI: Preventive maintenance testing of shielded power cable systems
AU: Mashikian M S
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 59-66 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CABLE/ CASE STUDY/ CONFERENCE/ DISCHARGE/ FAULT DIAGNOSTICS/
CN: IEEE Industry Applications Society
AB: Partial discharge (PD) of shielded power cable systems can be classified according to the following categories: internal, surface, corona and treeing discharges. PD is initiated when the voltage in the insulation reaches a threshold known as the PD inception voltage (PDIV). PD sites may be located by reflectometry and arrival time, the latter being used where the cable ends are not disconnected or the cable is branched. A preventive maintenance test for PD involves determination of the cable length and location of joints using low voltage time domain reflectrometry (TDR), applying an increasing voltage to the cable until either a PD is detected or a predetermined maximum voltage is reached and determining the locality and severity of the PD. The use of the method is described in four case studies. The method has been used for preventive maintenance on underground cable systems resulting in improved reliability. It is limited by the occurrence of cable system defects which cause failure without causing PD

signals. PD testing is also inappropriate where corrosion in copper tape used for shielding or in the neutral wires prevents travel of the PD signal. Highly attenuating cable systems are also unsuitable. Difficulties can also occur in cables with mixed insulation. (18 fig, 2 tab, 7 ref)
SO: B

00011
PI: 20205065 JA: 0203
TI: Proper grounding for the automation industry
AU: Rebeck A W
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 110-113 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CONFERENCE/ ELECTRIC EQUIPMENT/ GROUNDING/
CN: IEEE Industry Applications Society
AB: A single point grounding system, where all references to the earth come to a single point in the facility before referencing the earth, is essential to any automated industrial site. In direct current (DC) power applications this is accomplished by using a master ground bar, while in most alternating current (AC) power applications, it is accomplished by referencing back to the original Neutral Ground bond in the building or the secondary Neutral Ground bond of an associated stepdown or isolation transformer. All neutral, safety, and isolated ground conductors must come to a single point at the main distribution panel and then connect to the earth ground reference for the structure. Both the US National Electrical Code and the NFPA Standard for the Installation of Lightning Protection Systems require a separate, earth ground electrode that must then be bonded to the main entrance grounding electrode system, in order to direct the majority of current from a lightning discharge to a structure into the earth away from the building entrance grounding system. Halo grounds should not be used as a safety ground system. (5 fig, 2 ref)
SO: B

00012
PI: 20205066 JA: 0203
TI: Increasing the electrical output of a co-generation plant
AU: Paine D M
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 114-124 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: COGENERATION/ COMPANY INFORMATION/ CONFERENCE/ MODERNISATION/ POLYETHYLENE/
CN: Calpine Corp; Equistar; IEEE Industry Applications Society
AB: The cogeneration plant at Equistar Corp's Morris polyethylene manufacturing facility, Illinois, USA, was primarily owned and operated by Calpine Corp. The plant included three gas turbine generators, each with a heat recovery steam generator. A decision was made to add a steam turbine generator to the plant in order to increase the electrical output of the plant, allowing for the sale of the excess electric power. Accomplishing this expansion without disturbing operation of the polyethylene plant or the utility transmission system meant dealing with various technical challenges. These included: fitting

the new generator onto a system with limited capacity; installing current limiting reactors' revising transformer tap settings for two different operating modes; dealing with increased generator instability problems; resolving inherited islanding difficulties; and dealing with control system memory problems. A number of factors led to the success of the project, including resolution of the major electrical technical issues on a timely basis to the satisfaction of the host plant operator, the cogeneration plant operator and the contractor. (3 ref)
SO: B

00013
PI: 20205068 JA: 0203
TI: Electrical safety programs
AU: Eastwood K; Liggett D; Hesla E
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 130-135 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CONFERENCE/ ELECTRIC POWER/ MANAGEMENT/ SAFETY/ TRAINING/
CN: IEEE Industry Applications Society
AB: Electrical safety programmes ensure that neither workplace conditions nor the actions of people expose personnel unnecessarily to electrical hazards. Recommended elements for establishing an electrical safety programme, are outlined in the IEEE Yellow Book: Guide for Maintenance, Operation and Safety of Industrial and Commercial Power Systems. The scope of the programme should address the needs of all employees, contractors and visitors at the facility and the written programme should include policy, requirements, responsibilities and general guidelines. A complete electrical safety programme should include: management commitment, organisational support, electrical safety policy, training and qualification of all personnel use of protective equipment, testers, tools and protective methods, use of electrical equipment, documentation, oversight and auditing, technical support, emergency preparedness. (4 fig, 6 ref)
SO: B

00014
PI: 20205074 JA: 0203
TI: The importance of power quality management in the pulp and paper industry
AU: Nacke B M; Schlake R L
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 169-173 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CONFERENCE/
CN: IEEE Industry Applications Society
AB: Power quality management has become a major cost consideration in pulp and paper mills. Power quality problems can have consequences that range from minor inconveniences to major downtime events. Modern control electronics are becoming increasingly sensitive to even minor power disruptions and can themselves create harmonics that degrade power quality. There is a general trend toward modernising pulp and paper mills by centralising control functions and this will require clean, power and reliable environmental control systems. Integrating new technology will be compli-

cated. Implementing a comprehensive power protection programme with a fully integrated suite of power quality capabilities can significantly enhance a mill's productivity, by reducing downtime and operational losses due to power quality problems. Uninterruptible power supplies (UPS) can be designed for specific applications and can be off line, online or line interactive, the choice between the systems depending on the requirements of cost, the need for a "bumpless transfer" and the need for power conditioning. (1 tab, 7 ref)
SO: B

00015
PI: 20205078 JA: 0203
TI: Coordination of surge arresters with medium voltage current limiting fuses
AU: Das J C
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 192-200 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CONFERENCE/ ELECTRIC EQUIPMENT/ POWER SUPPLY/ PROTECTION/
CN: IEEE Industry Applications Society
AB: Current limiting fuses are commonly used for unit substation primary protection and are designed to reduce equipment damage by interrupting the rising fault current before it reaches its peak value. At the same time, surge arresters are also provided on the primary side of the transformer. The energy diverted to the surge arresters may be calculated with a graphical approach based upon division of energy curves. A valve type surge arrester is not affected by the switching surge if the gap does not flash over. It is possible to calculate the minimum rated voltage of the surge arrester in terms of the switching surge sparkover. The operation of metal oxide gapless arresters on switching surge is not of concern if the power frequency voltage withstand capability and maximum switching surge discharge voltage are both above minima which can be calculated for a given switching surge overvoltage. The coordination of surge arresters with current limiting fuses has been shown to be dependent on fuse let through characteristics; the rated voltage and class of the arrester; the system voltage and short-circuit level. Guidelines have been developed for selection and application of the surge arresters at 13.8kV, 4.16kV and 2.4kV voltage levels. (8 fig, 7 tab, 4 ref)
SO: B

00016
PI: 20205080 JA: 0203
TI: Considerations in application and selection of unit substation transformers
AU: Nochumson C J
CI: 2001 IEEE annual pulp and paper industry technical conference, Portland, OR, USA, 18-22 June 2001, pp 213-222 <Piscataway, NJ, USA: IEEE Industry Applications Society, 2001, 246pp, USD150.00 (ISBN 0780367456)> (K, P, S)
CT: CONFERENCE/ INSTALLATION/ LEGISLATION/ TRANSFORMER/
CN: IEEE Industry Applications Society
AB: Secondary Unit Substations Transformers (USTs) are discussed, ranging from 300kVA up through 2,500kVA with 34.5kV maximum primary voltages and with secondary voltages of 600V and below. Typical ratings, construction features and variations available are covered. The first section deals with US National lectric Code (NEC)

requirements as they affect location considerations and discusses USTs belonging to two general categories - Liquid-Type and Dry-type. The discussion of liquid types includes presently available insulating fluids, while the discussion on dry types includes VPI polyester, VPE silicone, partial cast and full cast insulation systems. The second section of the paper reviews other consideration factors for the correct selection of the best type of UST for a given application, including initial transformer cost, installation costs, operating costs, maintenance costs and special design features and options. (6 tab)
SO: B

00017
PI: 20205331 JA: 0203
TI: Fueling self sufficiency: pathways to change
AU: Tucker P
JN: Solutions!
CI: Jan. 2002, pp 67-70 (C, K, P, S)
CT: BIOMASS/ BLACK LIQUOR/ ENERGY SUPPLY/ GASIFICATION/ NEW TECHNOLOGY/ RESEARCH/
AB: Black liquor and biomass gasification offer the potential to more than double electricity generation from captive self generated fuels in the pulp and paper industry. The objective of the industry's first Technology Summit in 2001 was to determine the research path for the industry to pursue under the Agenda 2020 program to deliver commercially viable systems by 2008. The group identified the most critical technology/ knowledge gaps and developed a set of recommendations to close those gaps. Two basic lines of black liquor gasification (BLG) development were identified: low temperature and high temperature. This temperature distinction defines whether the technology operates below or above the melting point of the smelt produced. Both lines of development are poised for commercial demonstration, as is biomass gasification/combined-cycle. Specific comments are made only for the MTCI, Chemrec and Battelle/FERCO processes. (1 fig)
SO: B

00018
PI: 20205429 JA: 0203
TI: Factoring in your trim removal system along with your winder upgrade
AU: Otani M N
CI: 2001 Engineering finishing and converting conference, San Antonio, TX, USA, 16-20 Sept. 2001 (held 2-6 Dec. 2001), 5pp <Atlanta, GA, USA: TAPPI Press, 2001, USD90.00 (ISBN 1930657838)> (C, K, P, S)
CT: CONFERENCE/ MODERNISATION/ SLITTER/ TRIM WASTE/ WINDER/
CN: TAPPI Press
AB: Trim removal system modifications need to be considered in the design of the new or rebuilt winder. Designing a reliable trim removal system takes knowledge and experience and this design is based on the basic trim specifications for each application. Factors that need to be considered for an upgrade of the trim removal system include increased speed, increased trim width, grade change, slit path change, slit width change, changing the material discharge, slitter knife change and changing the type of trim removal. There are several solutions in upgrading the trim removal system and

generally two or more of these solutions are required for a reliable trim system upgrade. These include changing the drive assembly, changing the trim intake hoods, and changing the duct diameters. The expectations of mill personnel must be given priority in the trim removal system design for the new winder or winder upgrade.
SO: B