

Session 3 Asme Section Iii

February issue includes Appendix entitled Directory of United States Government periodicals and subscription publications; September issue includes List of depository libraries; June and December issues include semiannual index

Coal- and gas-based power plants currently supply the largest proportion of the world's power generation capacity, and are required to operate to increasingly stringent environmental standards. Higher temperature combustion is therefore being adopted to improve plant efficiency and to maintain net power output given the energy penalty that integration of advanced emissions control systems cause. However, such operating regimes also serve to intensify degradation mechanisms within power plant systems, potentially affecting their reliability and lifespan. Power plant life management and performance improvement critically reviews the fundamental degradation mechanisms that affect conventional power plant systems and components, as well as examining the operation and maintenance approaches and advanced plant rejuvenation and retrofit options that the industry are applying to ensure overall plant performance improvement and life management. Part one initially reviews plant operation issues, including fuel flexibility, condition monitoring and performance assessment. Parts two, three and four focus on coal boiler plant, gas turbine plant, and steam boiler and turbine plant respectively, reviewing environmental degradation mechanisms affecting plant components and their mitigation via advances in materials selection and life management approaches, such as repair, refurbishment and upgrade. Finally, part five reviews issues relevant to the performance management and improvement of advanced heat exchangers and power plant welds. With its distinguished editor and international team of contributors, Power plant life management and performance improvement is an essential reference for power plant operators, industrial engineers and metallurgists, and researchers interested in this important field. Provides an overview of the improvements to plant efficiency in coal- and gas-based power plants Critically reviews the fundamental degradation mechanisms that affect conventional power plant systems and components, noting mitigation routes alongside monitoring and assessment methods Addresses plant operation issues including fuel flexibility, condition monitoring and performance assessment

"Circumstances surrounding the Nuclear Regulatory Commission's order that five nuclear powerplants be shut down pending analysis and possible modification of safety related piping systems"--Page 1.

Advances in Research on the Strength and Fracture of Materials: Volume 4—Fracture and Society contains the proceedings of the Fourth International Conference on Fracture, held at the University of Waterloo, Canada, in June 1977. The papers review the social implications of fracture in a wide range of materials, with emphasis on education and politics. This volume is comprised of 22 chapters and opens by discussing fracture and fracture mechanics before introducing the reader to fracture problems in nuclear reactors; plastic flow around a crack under friction and combined stress; crack closure in fatigue crack growth; and the effect of the atomic structure's discreteness on cleavage crack extension in brittle materials. The following chapters explore the physical nature of fracture in composite materials; political and social decision making in relation to fracture, failure, risk analysis, and safe design; and the teaching of fracture in universities. This monograph will be a useful resource for metallurgists, materials

scientists, and structural and mechanical engineers.

This volume contains the proceedings of the IUTAM Symposium on Elastohydrodynamics and Microelastohydrodynamics held in Cardiff from 1-3 September 2004. It contains 31 articles by leading researchers in the field. The symposium focused on theoretical, experimental and computational issues in elastohydrodynamic lubrication (EHL) both in relation to smooth surfaces and in situations where the film is of the same order or thinner than the surface roughness (micro-EHL). The last IUTAM Symposium in this general area of contact of deformable bodies was in 1974. The emphasis in the Symposium was upon fundamental issues such as: solution methods; lubricant rheological models, thermal effects; both low and high elastic modulus situations; human and replacement joints; fluid traction; dynamic effects, asperity lubrication and the failure of lubrication; surface fatigue and thermal distress under EHL conditions. The book will be useful to those active in basic elastohydrodynamics research who wish to gain an up-to-date understanding of the subject from leading experts in the field.

Energy Research Abstracts
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