

35th Annual Conference of IMIA - the International Association of Engineering Insurers

The 35th Annual Conference of IMIA was held at Swiss Re – Centre for Global Dialogue, Rüschlikon, Switzerland on 16th to 18th September 2002.

IMIA is an international forum for the exchange of information, knowledge, experience and opinions between Engineering Insurers. Such co-operation is needed, as Engineering Insurers are permanently confronted with risks emanating from new technical developments in Industry on a global basis.

IMIA is a non-profit organisation and operates through an Executive Committee, which in 2001/2002 comprised the Chairman A LINDBERG (If P&C Insurance, Stockholm), B. DAVISON (Royal & SunAlliance, London), H. HELLER (Allianz, Munich), D. HEIDENHAIN (Munich Re, Munich), M. PETRUZZELLO (HSB, Hartford), L WASSMER and the Secretary A.WATT (Great Britain).

Membership of IMIA comprises 20 countries representing the major part of the world-wide premium income of engineering insurance. Member countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, India, Israel, Italy, Japan, The Netherlands, Russia, South Africa, Spain, Sweden, Switzerland and USA.

43 delegates were welcomed by the President, Louis Wassmer.

The total premium income for engineering insurance for 2001 reported by the delegates amounted to 4,750 Mio US\$.

The guest speakers at the conference were:

Dr Bruno Porro, Chief Risk Officer, Swiss Re on “Review of the Engineering Insurance Market.”

Dr Beat Guggisberg, Allianz Suisse Insurance Ltd., Zurich on “Gotthard – Swiss Alpine Railway Tunnels, Insurance Solution – Risk Assessment.”

Jonathan Lloyd, Product Manager, Alstom Power, Switzerland on “Update on GT24/ GT26 Gas Turbines.”

The following topics were considered by working parties who presented reports at the Conference on:

PML Assessment of Civil Engineering Projects

Experience with Integrated Gasification Combined Cycle Power Projects (IGCC)

The Pulp and Paper Industry – Technical Developments and Loss Experience

Telecommunications and e-Commerce - Global Exposures

Use of Non-Destructive Testing (NDT) in Engineering Insurance

Insurance of Wind Turbines (Update)

Machinery Breakdown risks of Nuclear Power Plants

Extension of the Period for Delay in Start Up Cover (DSU)

Development of the IMIA web site has continued on the Internet, www.imia.com in order to improve the information about IMIA and to provide a tool for distribution of information and best practices in Engineering Insurance. Papers presented at this year's conference will be published on the IMIA web site.

The next Conference will be held in Stockholm from 15 to 17 September 2003.

Anders Lindberg, Stockholm

Press Releases on individual papers:

Integrated gasification Combined Cycle Power Plants

One of the important topics discussed at this year's 35th Conference of the International Association of Engineering Insurers (IMIA) from 14th to 18th September in Zurich was the experience with the new technology of integrated gasification combined cycle power projects. This is an effective but very complicated power technology which is becoming increasingly important in the context of environmentally sound power generation. The principle is that "dirty" fuels like coal, crude oil, and refinery residue like tar undergo a complex process of conversion into clean synthetic gas, which produces electrical energy via integrated gas turbines. In addition, the waste heat may be used to generate steam for further energy use.

Coal gasification has been used in industry on a trial basis for more than 50 years. The extremely complex technology that has developed over the years and the difficulties involved in integrating it with combined cycle power stations now make it necessary to present this technology in more detail with a view to facilitating a better assessment and evaluation of the insurance risks involved with these plants and their operations. In a comprehensive study with the title "Experience with Integrated Gasification Combined Cycle Power Projects (IGCC)" experts from reinsurance companies look into the technology of these plants, the technical problems and losses, and the experience of the insurers. The loss experience has been extremely varied. As it says in the study: "An important fact is that IGCC plants are complex and integrated industrial plants with a high risk exposure". But the following remark is also worth noting: "Underwriters have to consider that IGCC plants may be installed on a narrow space within existing refineries and interferences with the surrounding property have to be considered both for material damage and for possible maximum loss evaluations. Third party liability exposure also is an essential issue for underwriting these risks." According to the experts there are good reasons for expecting

the further advancement of this type of power plant – of which there are currently twelve in operation throughout the world.

For one thing, there is a marked trend towards a cleaner and more efficient use of fossil fuels, and demand is growing for gas as a cleaner way of generating electricity. What is more, environmental regulations make a new way of thinking necessary.

Coal gasification in connection with combined cycle power stations meets these demands and creates a basis for observing the extremely low limits for the emission of pollutants while at the same time generating large amounts of electrical energy.

THE PULP AND PAPER INDUSTRY-TECHNICAL DEVELOPMENTS AND LOSS EXPERIENCE

The International Association of Engineering Insurers (IMIA) provides a forum for the exchange of information, knowledge, experience and opinions between engineering insurers from throughout the world. The 35th annual conference held at Swiss Re's Centre for Global Dialogue in Zurich, provided a platform for such exchanges and allowed delegates to discuss and confront the risks emanating from new technical developments in the industry.

Presented by Chris Blückert from Försäkringsbolaget Zürich in Sweden, the document looks at the important industry of the future; Pulp and Paper. New technologies are described, loss experience analysed and the prevention measures available, together with the insurance aspects.

Developments in the industry include a new process whereby today's technique to burn black liquor is replaced by a new gasification process which significantly increases energy production as well as eliminating the explosion hazard. The paper also summarises progress with the areas of cooking, environment, kidneys and paper machines.

Pulp and Paper mill construction and operation is characterised by large values as well as high risk exposures to accidents, some of which are presented in more details under the loss experience section. Insurance falls into 2 main categories that are construction coverage by way of CAR/EAR and Machinery Breakdown/Machinery Loss of profits. The underwriting considerations outlined to assess the appropriate premium and policy conditions require time and discipline of skilled engineering and insurance professionals.

POSSIBLE MAXIMUM LOSS ASSESSMENT OF CIVIL ENGINEERING PROJECTS

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The question of a uniform definition and the main parameters for establishing a PML has been part of numerous studies and discussion. In addition catastrophic losses within the construction industry over recent years has demanded a reappraisal of this topic.

This interesting and important paper was presented by Helmut Heller from Allianz, Germany at the 35th annual IMIA conference. The document looks at the range of definitions, the assessment process, and underwriting considerations. It is the first paper to consider the sensitivity of each type of technical risk for the assumed most unfavourable hazards from which the maximum damage can be determined.

The objective of the paper is to provide some assistance in the PML evaluation for civil engineering projects. The typical main components of construction risks, such as Tunnelling, Bridges, Pipelines, Roads, Railways, Dams and Harbour works are detailed and their main characteristics and differences in sensitivity for the hazards discussed. Within the tunnelling sections, the PML considerations are looked at according to the method of excavation and type of lining support, including tables showing the sensitivity factors. For each type of risk there are possible PML scenarios given.

Underwriting considerations such as minimum PML, policy cover and common extensions are included. The paper concludes that there are a variety of definitions, methods and philosophies in the estimation of a PML, which can often be open to different interpretations which in turn can be costly. It is therefore essential to determine the PML according to sound underwriting data and wherever possible, by involving expert engineers.

MACHINERY BREAKDOWN RISKS OF NUCLEAR POWER PLANTS

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Nuclear power has become an important energy source since its introduction over four decades ago, with there now being over 400 operating nuclear power reactors world-wide providing 16% of the world's electricity generation. As a specialised branch of the insurance industry, nuclear pools provide cover of which a part is Machinery Breakdown insurance. The paper presented at the 35th IMIA conference, by Philippe Bourguignon from AGF (France) looks at the technology used in nuclear reactors, the machinery breakdown aspects including prevention, as well as the lifetime and decommissioning of nuclear power plants.

Whilst machinery breakdown failures normally do not compromise the safety of the plant, they can cause significant damage, leading to considerable loss of generating revenue and therefore sizeable insurance losses. An analysis of losses occurring between 1996 and 2000 revealed that machinery breakdown losses account for 47% of the total number of nuclear insurance losses as well as representing the most costly losses. Further investigation showed that the largest risk involved turbines and electrical generator failures, failures of steam, piping and transformers. The paper also provides details of each component and outlines the possible sensitivities, defects and failures. In addition, it is known that many recorded fire losses are often the result of mechanical breakdown of large equipment. Examples are given of fires in turbine buildings resulting from machinery breakdown failures, such as Chernobyl in 1991 and Fermi plant in USA in 1993.

Machinery breakdown losses can be minimised through the development of quality operating, maintenance and training programmes. This should include ALARA (As Low As Reasonable Achievable) co-ordination. The paper emphasises the importance of examining the quality of the "human factor", as the work done by personnel has a large impact on the correct functioning of the installation.

Studies show that nuclear energy will enjoy a significant share of the total energy production through to 2100. Therefore the insurance industry needs to be involved in this evolution and to develop risk assessments, prevention aspects as well as providing industry-wide statistics.