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RISK PROFILING THE DESIGN & MANAGEMENT OF CONCENTRATED SOLAR POWER TECHNOLOGIES

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ABSTRACT

The application of risk management principles in the engineering design and management of concentrated solar powered plant and associated equipment will provide innovative and structured development opportunities for the applied sciences and engineering community. Proactive risk management techniques, and risk profiling processes must be integrated with practical quantitative design and plant management methodologies. This must include the ability to identify key exposures, risks and threats associated with plant design and operation. This will ensure that appropriate controls for the design, construction and operation of solar powered plant are satisfactorily conceptualised, implemented and maintained.

This proposed approach will provide practicable methods and innovative philosophical approaches in quantitative and qualitative risk management techniques tailored to concentrated solar powered plant.

Systematic risk management principles will be proposed in the application of control and design parameters. This will involve the use of risk identification, assessment and control models. In addition “opportunity risk” philosophy will be explored whereby the practical application of these techniques will be modelled around engineering solutions for concentrated solar power technologies.

The challenges facing the earth in relation to energy demands will be considered and a review of international strategies adopted by various countries in relation to solar powered technologies, particularly in Australia, will be undertaken. This will conclude with practical risk management solutions and models addressing environment, processes, equipment and cultural issues.

The understanding and adoption of a risk based perspective and culture, will provide the applied sciences and engineering disciplines with a sustainable, methodical, practical and holistic approach to the conceptual design and management of solar powered plant. Attendees to the international conference will be provided with an innovative strategic risk management framework with practical strategies for implementation to address global energy demands.

REFERENCES

[1] Advanced Electricity storage Technologies Programme, December 2005, Energy Storage Technologies: a review paper, Department of the Environment & Heritage, Australian Greenhouse Office

[2] Concentrating Solar Power Now, Clean energy for sustainable development, Federal Ministry for the Environment, Nature Conservation and Nuclear Energy

[3] Engineering a Safer Australia – Securing Critical Infrastructure and the Built Environment, by Athol Yates, 2003, 1-158

[4] Australia/New Zealand Standard, AS/NZS 4360 Risk Management Standard, 2004, 1-26

[5] Standards Australia, HB 436.2004 Risk Management Guidelines, 1-115