

CERAMAH TEKNIK TECHNICAL TALK

Overview on Hydropower Dam Safety Program with Focus on Geology and Geotechnical Investigation

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Abstract: Typically the construction of the new dams includes various phase of the project throughout the lifespan of the structures. This includes planning, design, construction and commissioning, operation and maintenance, surveillance and decommissioning. The Malaysian Inter-Departmental Committee on Dam Safety (1989) provides a guideline for the Operation, Maintenance and Surveillance of Dams in Malaysia. Meanwhile, the International Commission on Large Dams (ICOLD) first establish a committee on dam safety guidelines on 1982 and the first publication on “Dam Safety Guidelines” was made in 1987 and the US Bureau of Reclamation Safety of Dams Program which follows the Federal Guidelines for Dam Safety also provides a guidelines with regard to planning, design, construction, operation, maintenance, and examination of dams.

Upon the commissioning of a dam, there is a need to continuously inspect, maintain and check to ensure that any occurrence and development of safety deficiencies and problems are quickly detected, identified, analysed and the required remedial actions are determined and consequently carried out in due time.

An adequate assessment and investigation of the site specific geological and geotechnical conditions is one of the most important aspects of safety evaluation for a hydropower development project which includes the dams, surrounding areas of site, and appurtenant structures.

This presentation is aimed to discuss on the overall dam safety program with focus on geological and geotechnical investigation, safety review and monitoring aspects with regards to geology and special investigation and studies carried out for dams and appurtenant structures such as tunnel, intakes and outlets. Several case studies are discussed with regards to repair and rehabilitation works to ensure the safety, integrity and continued functionality of the structures as well as to provide new ideas and research suggestion for future investigation.