Multiconsult

05_ENERGY

Akosombo and Kpong Dams

Dam Safety Assessment and Emergency Preparedness Plan

Akosombo Main Dam | Photo: NORPLAN

NORPLAN AS on behalf of Multiconsult AS entered a Joint Venture with Royal Haskonig (NL) to undertake a DS A and EPP for the existing dams and appurtenant structures.
Dams are rockfill dams (max. height at Akosombo 141m, Kpong 19 m, fill volume 7.9 Mm3 (Akosombo) and 1.4 Mm3 (Kpong). Included are power station (Kpong), intake and penstocks (Akosombo), and spillways (12 radial gates and Akosombo and 15 radial gates at Kpong).

Inundation maps were prepared based on LiDAR mapping. Inundated area covers about 1,500 km2. An extensive GIS based database of the potentially affected area was prepared showing location of villages, local institutions and safe havens. EPP 's include institutional and legal requirements as well as emergency action plans.

PROJECT	PROJECT TYPE	LOCATION	CLIENT	TIME PERIOD	KEY NUMBERS
Akosombo and Kpong dams	Assessment of Hydropower rockfill dams	Ghana	Volta River Authority	2009 - 2010	Rockfill Dams H = 141 m and 19 m

SCOPE OF WORK

Mobilization, inspections, data collection and assessment of structures mechanical and civil. New flood estimates (by JV partner) and preparation of routing procedures for the gated dams. Establishment of earthquake loads and stability analyses.
Suggestions for improvements to meet current international good practice standards for the DSA (Dam Safety Assessment).
Aerial mapping (LiDAR) of downstream areas affected by a potential dambreak and preparation of inundation maps. Identification of local government structures, villages, safe havens. Preparation of communication directory and emergency action plans for the EPP (Emergency Preparedness Plan). Training and workshops for both parts of the assignment.

OUR SERVICES

- Condition assessment (structural, civil, mechanical and monitoring)
- Design review – new loads
- Hydropower Generation Assessment
- Assessment of ASR

DISCIPLINES

- Geotechnical Engineering
- Civil Engineering
- Mechanical Engineering
- Structural Engineering
- Hydraulic (Dam Break) Modelling and Preparation of Inundation Maps

Akosombo Power Station | Photo: NORPLAN

Top: Kpong gates 02 | Photo: NORPLAN
Buttom: Kpong West Dyke 02 | Photo: NORPLAN

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