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SOMPORN RATTANABURI : COMPUTER-ASSISTED ANALYSIS OF SCOUR AND DEPOSITION AT DOWNSTREAM OF HUAI NGAET DAM, NAM KHEK PROJECT. THESIS ADVISOR : ASSO.PROF. SURAVUTH PRATISHTHANNDA, Ph.D. 255 pp. ISBN 974-583-057-7

This study is the analysis of scour and deposition on Nam Khek River from downstream of Huai Ngaet Dam to Ban Khek Yai Regulating Dam which is the part of Nam Khek Hydropower Project of Electricity Generating Authority of Thailand (EGAT.). HEC-6 version 4.0 programme was used as computer assisted analysis in the study. The study comprised of data collection both from existing and fields surveying; data analysis; model calibration and analysis on present status and after the construction of dam for 50 years period. The result of this study was compared with the studied of EGAT.

The result indicated that after 50 years dam operation, scouring would be from downstream of Huai Ngaet Dam to cross section No.14 (PH-A) which is the location of power house "A". Deposition would start after the power house till the approach to Ban Khek Yai Regulating Dam. The maximum deposition occur at cross section No.13 sediment deposition would be more than 2.5 Km., from Regulating Dam , 78% of sediment would be silt. The comparison of this study with the studied of EGAT. indicated that the tendency of scour and deposition are simialr and both show that scouring and deposition would not effect operation and efficiency of Regulating Dam for the expected 50 years of project life.

The studying show that program HEC-6 which is the one dimensional steady flow model is not appropriate to use in analysis of scouring and deposition on mountainous stream where geometric change of stream is more dominated by geologic morphology than the effect of scouring and deposition.