

ABSTRACT

Past studies have shown that there are many ways of operating and maintaining engineering structures in order to ensure optimal outcome. In this research, these different methods that engineers employ in the operation and maintenance of engineering structures are studied. Various works of literature (spanning from text books, research papers, codes of practice, to lecture notes) are consulted, and the relevant data and information is extracted from them and then represented (at times, slightly differently) in this research report. The various methods which have been captured in literature are noted down, and (with the aid of logical reasoning and common-sense thinking) a general method that covers all of the ones that are necessary and sufficient is formulated and presented in the findings. Upon completion of the study, it was found that any and every effective and efficient strategy that is deployed and employed in the operation and maintenance of engineering structures essentially consists of the following tactics: (i) modeling of the structural system, (ii) monitoring of the structure over its lifetime in order to update the model, (iii) enforcing and executing of the standing orders providing for the usage of the structure, and (iv) carrying out of remedial or else terminal intervention on the structure if, when, and where necessary.