PHD DEFENCE

by Sima Rastayesh

PHD defence

RISK ASSESSMENT – WITH APPLICATION FOR BRIDGES AND WIND TURBINES

16 March 2021

14:00 –18:00

This defence will be carried out online.

DEPARTMENT OF
THE BUILT ENVIRONMENT

AALBORG
UNIVERSITY

THESIS SUMMARY

Bridges and wind turbines are two types of infrastructures where their failures can lead to severe damages, and thereby a high risk. The objective of this Ph.D. project is to develop methods for risk assessment for wind turbines and bridges. This Ph.D. study includes a case study on a composite bridge and several case studies considering different risk assessment scenarios on wind turbines (wind turbines near a highway throwing off ice and blades and power stage utilized in wind-fuel cell hybrid energy systems). Methods that are already available and used in bridges and wind turbines, such as risk-based decision-making, are modified and adapted to make it possible to use them as decision support tools for Operation and Maintenance (O&M) activities for the case study of the bridge. In addition to risk-based O&M methodologies, available methodologies to model the consequences of adverse events are modified based on existing risk assessment methodologies for wind turbines, such as Failure Mode and Effect Analysis (FMEA), Fault Tree Analysis (FTA), Decision Tree, and finally Bayesian Network (BN).

ASSESSMENT COMMITTEE

- Assoc. Prof. Peter Frigaard, Dept. of the Built Environment, Aalborg University (chairman)
- Prof. Poul Henning Kirkegård, Aarhus University
- Prof. Dimitri Val, Heriot-Watt University

PHD SUPERVISORS

- Prof. John Dalsgaard Sørensen, Dept. of the Built Environment, AAU

MODERATOR

- Assoc. Prof. Peter Frigaard, Dept. of the Built Environment, Aalborg University

GRADUATE PROGRAMME: Civil Engineering

PROGRAMME

14:00: Welcome by Moderator

14:05: Lecture and presentation by Ph.D. student (45 min)

14:50: Break
During the break, participants can email questions to the moderator, Peter Frigaard, pf@build.aau.dk.
If such are received, the questioner puts them forward after the assessment committee has finalized their questions and Q&A session.

15:00: The assessment committee Q&A session

17:00: End of defence
The assessment committee enters another "room", evaluates and writes the final assessment

Approx.
17:45: The assessment committee re-joins the "Defence room" and announces its decision

18:00 End of Event

HOW TO PARTICIPATE

The PhD defence will be carried out online via Microsoft Teams.

Sign-up deadline: 14 March 2021

Please send an email to Linda V. Andersen, lva@build.aau.dk before sign-up deadline and you will get an invite for the event and, if requested, a copy of the thesis.

This PhD defence is organized by
the Department of the Built Environment.