Announcing the Final Examination of Joseph Garmon for the degree of Doctor of Philosophy

Time & Location: November 4, 2019 at 10:00 AM in Engineering 2 312  
Title: A STUDY OF PERCEPTIONS ON INCIDENT RESPONSE EXERCISES, INFORMATION SHARING, SITUATIONAL AWARENESS, AND INCIDENT RESPONSE PLANNING IN POWER GRID UTILITIES

The power grid is facing increasing risks from a cybersecurity attack. Attacks that shut off electricity in Ukraine have already occurred, and successful compromises of the power grid that did not shut off electricity to customers have been privately disclosed in North America. The objective of this study is to identify how perceptions of various factors emphasized in the electric sector affect incident response planning. Methods used include a survey of 229 power grid personnel and the use of partial least squares structural equation modeling to identify causal relationships. This study demonstrates a causal model of how perceptions by personnel responsible for cybersecurity on incident response exercises, information sharing, and situational awareness, impact incident response planning. The results confirm that the efforts by the industry on these topics have advanced incident response planning for a potential attack and identify that emphasis on situational awareness will have the biggest impact of the considered variables on incident response planning perceptions.

Major: Industrial Engineering

Educational Career:
Bachelor's of Chemical Engineering, BS, 1996, Purdue University
Master's of Industrial Engineering and Management Systems, MS, 2015, University of Central Florida

Committee in Charge:
Waldemar Karwowski, Chair, Industrial Engineering and Management Systems  
Peter A. Hancock, University of Central Florida  
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Thomas Wan, University of Central Florida

Approved for distribution by Waldemar Karwowski, Committee Chair, on October 21, 2019.

The public is welcome to attend.