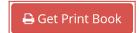


## Hydrosystems Engineering Reliability Assessment and Risk Analysis (McGraw-Hill Civil Engineering)

By Yeou-Koung Tung, Ben-Chie Yen, C. Melching





**Hydrosystems Engineering Reliability Assessment and Risk Analysis** (**McGraw-Hill Civil Engineering**) By Yeou-Koung Tung, Ben-Chie Yen, C. Melching

This is the first book to integrate reliability analysis and risk assessment with the planning, design, and management of hydrosystems (dams, levees, storm sewers, etc.). Requiring only a basic knowledge of probability and statistics, readers will be able to determine how hydrosystem structures will perform under various circumstances.





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#### **Editorial Review**

From the Back Cover

# INTEGRATE RELIABILITY ASSESSMENT AND RISK ANALYSIS INTO PLANNING, DESIGN, AND MANAGEMENT

This comprehensive text is the first to integrate reliability analysis and risk assessment into the planning, design, and management of hydrosystems. Written by internationally respected authorities, *Hydrosystems Engineering Reliability Assessment and Risk Analysis* provides the tools for designing safer, more reliable dams, storm sewer networks, water treatment plants, and pollution control systems.

Offering example problems that demonstrate the prediction of safety and reliability under different design scenarios, the authors illustrate the application of mathematical tools that quantify reliability and risk. With this book readers can improve the performance, durability (through maintenance scheduling/time to failure analysis), and predictability of hydrosystem designs.

Hydrosystems Engineering Reliability Assessment and Risk Analysis:

- Brings together in a single resource mathematical risk and reliability analysis methods needed to improve planning, design, and performance of hydrosystems
- Demonstrates statistical and probability tools for solving a broad range of hydrosystem engineering problems
- Provides the tools needed to predict hydrosystem project behavior and lifespan under various risk scenarios
- Shows engineers and students how to conduct risk and reliability assessments
- Offers examples of each application, in both U.S. and international units
- Provides sets of Q & A's for self-testing after every chapter

#### About the Author

**Yeou-Koung Tung, Ph.D.**, is a Professor of Civil Engineering at Hong Kong University of Science and Technology. The author of numerous technical papers on hydrology and risk analysis, he has won several awards for his research on these topics including the Walter L. Huber Research Prize, ASCE; the Arthur T. Ippen Award, IAHR; and the Collingwood Prize, ASCE. Dr. Tung received his B.S. in Hydraulic Engineering from Tamkang University, Taiwan and his M.S. and Ph.D. in civil engineering from the University of Texas at Austin.

**Ben-Chie Yen, Ph.D.,** (deceased) was a Professor of Civil and Environmental Engineering at the University of Illinois at Champaign-Urbana. He worked with surface water and urban hydrology problems, risk and reliability analysis, and open channel and river hydraulics for more than 30 years, and was author of over 200 published technical papers and co-author of eight books. He won a number of lifetime achievement awards from various professional societies focusing on hydraulics and civil engineering including the Hunter Rouse Hydraulic Engineering Lecture, ASCE; the Ven Te Chow Memorial Lecture Award, IWRA; and Honorary Membership in IAHR. He held a B.S. in civil engineering from National Taiwan University and M.S. and Ph.D. degrees in civil engineering from the University of Iowa.

Charles Steve Melching, Ph.D., P.E., is an Associate Professor of Civil and Environmental Engineering at Marquette University, Milwaukee, Wisconsin. He worked for the U.S. Geological Survey, Water Resources

Division, for seven years prior to joining the Marquette faculty in 1999. Much of his research has been centered on the application of reliability and uncertainty analysis to water resources modeling and design. He has been honored for his research with the Walter L. Huber Research Prize, ASCE. He received his B.S. in civil engineering from Arizona State University and his M.S. and Ph.D. in civil engineering from the University of Illinois at Urbana-Champaign.

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