



Engineering Seminar:

Wilfred D. Iwan
Emeritus Professor of Applied Mechanics
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“The Tohoku Japan Earthquake and Tsunami of March 11, 2011”

Abstract

The Tohoku Japan Earthquake and Tsunami of March 11, 2011 will be remembered as one of the greatest natural disasters of recorded history. A magnitude 9.0 earthquake along the Japan Trench, the largest ever recorded in Japan, was followed by a devastating tsunami. Measured ground accelerations of approximately 3g were followed by a tsunami wave with a height of nearly 40 feet. Tens of thousands of people were killed and many more were left homeless. A damaged nuclear power plant at Fukushima lost backup power and the ability to circulate cooling water. Explosions occurred and radiation was released as heroic workers attempted to control reactor damage. Thousands of homes were destroyed and many businesses were unable to continue operation. Office workers as far away as Tokyo were left stranded after the event when trains and subways were shut down.

This event has been referred to as a Super Catastrophe (Super Cat) by the financial industry because of its enormous effect on the people and economy of the region. Current estimations of the total damage are in the hundreds of billions of dollars. Manufacturing capacity in Japan has been seriously affected, and it will be years before electrical power from lost nuclear plants can be restored.

What were the causes of this disaster? Should they have been anticipated? What, if anything, could have been done to mitigate the effects of such an earthquake and tsunami? How well did engineered structure behave? How will this event affect the future of seismicity and earthquake engineering? What will engineers do differently in the future to protect critical facilities from such hazards? These questions and others will be addressed in this lecture.

DATE: Friday, September 23, 2011

TIME: 2:15 P.M.

LOCATION: 140 KETTER HALL, NORTH CAMPUS, UNIVERSITY AT BUFFALO

ORGANIZED AND SPONSORED BY: *Student Chapter of EERI at UB, CSEE-GSA, MCEER and Dept. of CSEE*

WEBCAST URL: <http://civil.eng.buffalo.edu/webcast>

Snacks and Refreshments will be served !!!



Wilfred D. Iwan
Emeritus Professor of Applied Mechanics, California Institute of Technology

Wilfred D. Iwan is Emeritus Professor of Applied Mechanics, and Emeritus Director of the Earthquake Engineering Research Laboratory at the California Institute of Technology. His research deals with fundamental areas of mechanics, understanding and characterization of strong earthquake ground motion, analysis and monitoring of the response of structural systems subjected to extreme events, and disaster public policy.

Professor Iwan is a Distinguished Member of ASCE, a Fellow of the American Society of Mechanical Engineers, and a member of EERI. He was the Founding President and currently serves as Vice-President of the Board of the Consortium of Universities for Research in Earthquake Engineering (CUREE). He was also the Founding President of the Engineering Mechanics Institute (EMI) of ASCE. He is currently President and a member of the Board of the Consortium of Strong Motion Observation Systems (COSMOS). He is also a Past-President and member of the Board of the International Association for Structural Control and Monitoring (IASCM), and a member of the Advisory Committee of the California Strong Motion Instrumentation Advisory Committee. He is a Founding Director of the World Seismic Safety Initiative (WSSI) and presently serves on the Board of that international non-profit organization. He has served as Chair of the California Seismic Safety Commission, the National Research Council Committee on Hazard Mitigation Engineering, and the National Research Council Board on Natural Disasters.

Professor Iwan is a member of the National Academy of Engineering. He is a recipient of the George W. Housner Medal awarded by EERI, the William H. Wisely American Civil Engineer Award and the Nathan M. Newmark Medal awarded by ASCE, the Alfred Alquist Medal awarded by the Earthquake Safety Foundation, and a Lifetime Achievement Award presented by COSMOS. He is also the first recipient of the Bruce A. Bolt Medal awarded jointly by EERI, the Seismological Society of America, and COSMOS.

Professor Iwan has mentored over 35 PhD students and is the author or co-author of numerous published papers in the areas of dynamics and vibration, earthquake engineering, and seismic safety.