Fauske & Associates, LLC

Professional Profiles

Name:
Dr. Robert E. Henry

Title:
Senior Vice President

Education:
University of Notre Dame, Ph.D. Mechanical Engineering, 1967

Fauske & Associates, LLC (FAI), a scientific engineering firm, specializing in the application of fundamental principles to the resolution of technical problems in the power and chemical processing industries. The principals and staff of FAI are recognized worldwide for their phenomenological modeling related to prevention and accommodation of chemical and nuclear plant accidents.

The combination of engineering expertise, extensive experience in nuclear and chemical process safety, and the availability of laboratory facilities makes FAI uniquely qualified to solve complex industrial problems.

Dr. Robert E. Henry

Senior Vice President

Dr. Robert E. Henry is a Senior Vice President and co-founder of FAI in 1980. During this time he has been responsible for the development of the Modular Accident Analysis Program (MAAP). This code describes the response of pressurized and boiling light water reactors during severe accidents. Because of its versatility, extensive benchmarks and short running times, MAAP has gained widespread acceptance in the domestic and foreign nuclear industry. This computer code treats such phenomena as when core damage would or would not occur, core overheating, hydrogen formation, distribution and combustion within the containment, debris distribution, debris bed coolability, challenges to reactor vessel integrity, core-concrete attack, and fission product behavior. During the industry-wide IDCOR Program, he was one of the Industry Representatives in the U.S. delegation to IAEA /Vienna to evaluate the Russian interpretation of the Chernobyl Unit 4 accident. Following this, Dr. Henry served on review panels for both the N-Reactor and the Savannah reactors with respect to potential severe accident conditions and has also served on NRC review panels to evaluate ongoing research. As a result of his experience, Dr. Henry was chosen to author the EPRI Technical Basis Report for supporting the development of Severe Accident Management Guidelines for all four U.S. reactor types.

One of Dr. Henry's areas of expertise is two-phase flow and boiling heat transfer. In particular, he, along with Dr. Fauske, authored the Henry-Fauske two-phase critical flow model which is widely used to analyze the blowdown behaviors for nuclear plants for postulated Loss-Of-Coolant Accidents (LOCAs). He has performed numerous experiments and authored papers on boiling heat transfer, two-phase compressible flow, steam explosions, Direct Containment Heating (DCH) and other related areas.

Waterhammer is another area of expertise, including those events resulting from steam condensation induced events as well as those resulting from column separation, pump startup and shutdown, etc. Here also, Dr. Henry has performed some of the fundamental experiments related to this issue in nuclear power plants and has authored papers on this subject. Furthermore, he was responsible for developing some of the early information to address NRC Generic Letter 96-06 related to waterhammer events in nuclear power plants.

Prior to founding FAI Dr. Henry held a number of responsible R&D positions at Argonne National Laboratory (ANL) from 1969 to 1980. In March 1979, he was appointed Associate Director of the Reactor Analysis and Safety Division, and was involved in the evaluation of the Three Mile Island-2 accident as part of the group formed by the Electric Power Research Institute's Nuclear Safety Analysis Center (NSAC).

Dr. Henry has published more than 150 articles in the areas of nuclear safety and engineering. In 1985, Dr. Henry received the Tommy Thompson Award: the highest honor the American Nuclear Society gives in the field of reactor safety. Dr. Henry also received an Award for Outstanding Engineering Accomplishment from the College of Engineering, University of Notre Dame, in 1990. He is a member of the American Nuclear Society and has been a Non-Resident Research Associate at the Massachusetts Institute of Technology. He served as Chairman of the Mechanical Engineering Department at Midwest College of Engineering from 1973 to 1978 and served as Dean of the Graduate School from 1978 to 1979.