

## Kyung-Doo Kim

### Office Address

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### QUALIFICATION SUMMARY

More than thirty years of nuclear engineering and research experience for reactor accident analysis using state-of-the-art computer codes such as RELAP5, MARS-KS, SPACE, preparation of computer models of various reactor systems, new reactor design, development of best-estimate (BE) thermal-hydraulic codes (MARS-KS, SPACE), PC-based nuclear simulator, and NSSS thermal-hydraulic module for full-scope simulators, etc. Successfully accomplished many projects on time as a project manager and/or researcher. Full knowledge on code structures and the models of the BE codes (RELAP5, RETRAN, SPACE, etc.) and two fluid model as well as the code application capability for the transient analysis. Also developed and validated the nuclear reactor safety analysis code, SPACE based on 2-phase 3-field model and obtained license for PWR design from Nuclear Safety and Security Commission in Korea as a project manager. Recently, appointed as a chair of the Nuclear Thermal Hydraulics Division of Korea Nuclear Society.

### RELEVANT WORK EXPERIENCE

5/91--present **Senior and Principal Researcher (Project Manager)**, Thermal-hydraulics & severe accident research division, Korea Atomic Energy Research Institute, Korea

- Developed and validated a nuclear reactor safety analysis code, SPACE as a project manager. Obtained license for PWR design from Nuclear Safety and Security Commission in Korea.
- Developed PC-based PWR simulator based on the BE codes for domestic nuclear plants as a project manager. Donated PC-based PWR simulator to IAEA and used in IAEA training course.
- Conceptual design and safety analysis of gas cooled reactor as a member of gas cool reactor design team.
- Developed the best-estimate thermal-hydraulic code, MARS-KS (Multi-D Coupled Analysis of Reactor Safety) and performed V&V activities as a member of the development team.
- Developed the NSSS T/H engines of full-scope simulators as a project manager. Exported MARS based NSSS T/H engine for full-scope simulator to WSC in US.
- Prepared the technical background documentation for Ulchine 1&2 Emergency Operating Procedure using MARS.

7/05-7/06

Visiting Researcher,  
University of Illinois at Urbana-Champaign, USA

- RELAP5-FLUENT coupling for gas cooled reactor analysis.
- Developed a Web-based nuclear simulator.

3/97--2/98

**Lecturer**, Department of Nuclear Engineering, Hanyang University, Korea  
Two-phase flow and nuclear system engineering

3/94--2/95

**Lecturer**, Department of Nuclear Engineering, Chosun University, Korea  
Numerics and Nuclear Safety

5/87--5/91

**Research Assistant**, Department of Nuclear Engineering, NCSU, Raleigh, NC  
Worked on contract research projects under the direction of Dr. J. Michael Doster.  
Developed and optimized a transient 1-D thermal-hydraulics code for real time simulation of PWR Freon loop simulator for a variety of advanced architecture computers.

1/89--12/90

**Teaching Assistant**, Department of Computer Science, NCSU, Raleigh, NC  
CSC461: Computer Graphics

8/86--12/86

**Teaching Assistant**, Department of Nuclear Engineering, NCSU, Raleigh, NC  
NE401: Reactor Analysis and Design

5/86--8/87

**Department Computer System Manager**, Department of Nuclear Engineering, NCSU, Raleigh, NC

7/83--5/85

**Engineer**, Korea Heavy Industry and Construction Company, Korea

3/81--6/83

**First Lieutenant**, Army, Korea

### EDUCATION

8/85--5/91

**Doctor of Philosophy in Nuclear Engineering**, North Carolina State University, Raleigh, N.C.  
Minor: Computer Science and Math

Thesis Title: Applications of Advanced Computer Architectures to Real Time Simulation and Control of Nuclear Power Systems

3/77--2/81

**Bachelor of Science in Electrical Engineering**, Inha University, Incheon, Korea

### Special Skills **Computer Languages**

Extensive FORTRAN, LabVIEW, Delphi and C++ experience

### **Computer Operating Systems**

Extensive LINUX, Windows experience.

**Other** Familiar with models and numerical method of major thermal-hydraulic computer codes used for reactor system analysis (RETRAN, RELAP5, SPACE and CENTS, etc.).

**AFFILIATIONS and HONORS**

Tau Beta Pi Engineering Honor Fraternity, inducted 9/89.  
Scholastic All American for Outstanding Student, awarded 9/88.  
Outstanding Researcher (KAERI in-house award), awarded in 12/94  
Who's Who in Science and Engineering, nominated 11/2000.  
Special Award (KAERI in-house award), awarded in 12/2005  
Commendation from Ministry of Industry in 11/2009  
Chair of Nuclear Thermal Hydraulics Division of Korean Nuclear Society, appointed in 11/2017.

**PUBLICATIONS:** available upon request.

**REFERENCES:** Personal references available upon request.