



R&D Activities in SNST

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History

- Engineering Physics Department, 1958
 - Nuclear Reactor Engineering
 - Ion beam and electron beam
 - Nuclear Material
- Dissolved: 1970s
 - Nuclear Reactor Engineering: merged into Energy and Power Engineering Department
- Renamed as NED, 1997
 - School of Energy and Power Engineering established
- School of Nuclear Science and Technology established, 2006



Current Status_Discipline

- First-class discipline: Nuclear Science and Technology, includes
 - Nuclear Science and Engineering
 - Nuclear Technology and its application
 - Nuclear Radiation Protection and Environment
 - Nuclear Fuel Cycle and Nuclear Material



Current Status_Staffs

- Staffs
 - Professors: 6
 - Associate Professors: 2
 - Lecturers: 5
 - Technicians: 3
 - About 20 Professors in other Schools involved research work for Nuclear Science and Technology.



Current Status_Students

- Undergraduate Students
 - 60 per year
- Graduate Students
 - Master Degree: 25 per year
 - Ph.D Degree: 5 per year



Current Status_Research Field

- Nuclear Science and Engineering
 - Nuclear Reactor Physics
 - Nuclear Reactor Thermal-hydraulics
 - I & C
 - Nuclear Safety
- Nuclear Technology and it's application



Current Status_ Laboratory

- Thermal hydraulic Lab:
 - High Pressure Water Loop :up to 16MPa
 - Sodium Boiling Loop: Only one in China
- Radiation Lab
- Nuclear Power Plant Simulator
 - Developed by DSS, USA
- Numeric methods development Lab in Nuclear Science
 - Parallel Computation System



Current Status_Funds

- Government
 - National Natural Science Foundation
 - High Technology Projects
 - Ministries
- Institutes
 - NPIC: Nuclear Power Institute of China
 - SNERI: Shanghai Nuclear Engineering Research Institute
 - CIAE: China Institute of Atomic Energy
 - BINE: Beijing Institute of Nuclear Engineering
- Nuclear Power Plants
 - CGNPC
 - Qinshan



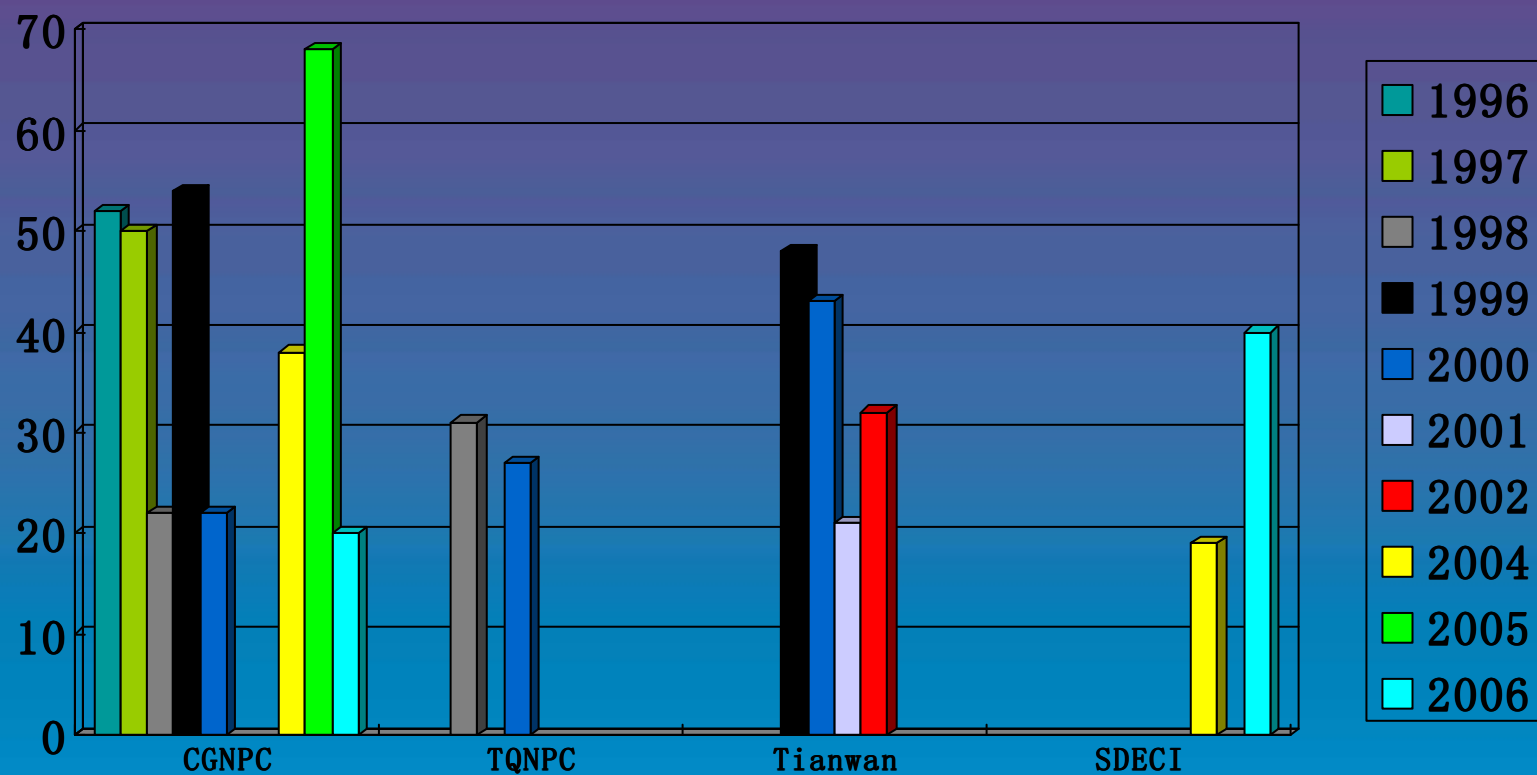
Current Status_ Education and Training

- Published Textbooks
 - Most textbooks for nuclear students in China were compiled by our professors, totally 23
 - Nuclear Reactor Physics Analysis
 - Nuclear Reactor Safety Analysis
 - Nuclear Reactor Control
 - PWR NPP Systems and Operation
 - Nuclear Reactor Dynamics
 - Boiling Heat Transfer and Two-phase flow
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Current Status_ Education and Training

- Training
 - Nuclear Power Training Center, established in 1997
 - Staffs of CGNPC, TQNPC, Tianwan NPP were trained here since 1986
 - More than 600 staffs





Current Status_

Education and Training

- Training Textbooks
 - Almost all textbooks for different NPP were compile by professors here



Current Status_ Education and Training

- CGNPC
 - Foundation of thermalhydraulics
 - Equipments in Electrical System
 - Nuclear Physics and Radiation Protection
 - Nuclear Reactor Physics
 - Nuclear Reactor Thermal Hydraulics
 - Nuclear Reactor Structure and Equipments
 - Instrumentation in NPP
 - NPP Control
 - PWR Chemistry
 - Pumps and Valves
 - Systems and Operation of Dayabay NPP
 - NPP Safety



Current Status_ Education and Training

- TQNPC
 - Equipments in Electrical System
 - Nuclear Physics and Radiation Protection
 - CANDU Reactor Physics
 - CANDU Reactor Thermal Hydraulics
 - Nuclear Reactor Structure and Equipments
 - Instrumentation in NPP
 - NPP Control
 - PWR Chemistry
 - Mechanical Equipments
 - CANDU Nuclear Island
 - CANDU Conventional Island
 - CANDU NPP Operation
 - NPP Safety



Current Status_ Education and Training

- AECL
 - CANDU-6 Nuclear Island System
 - CANDU-6 Thermal System
 - CANDU-6 Pumps, Fans & Valves
 - CANDU-6 Nuclear & Conventional Instrumentation
 - CANDU-6 Plant Computer
 - CANDU-6 Plant Control
 - CANDU-6 Electrical System
 - CANDU-6 Safety Philosophy, Characteristics, and Analysis
 - CANDU-6 Reactor Physics
 - CANDU-6 Thermal-hydraulics
 - CANDU-6 Radiation Protection
 - CANDU-6 Materials
 - CANDU-6 Chemistry
 - CANDU-6 Plant Operation and Safety Culture



Current Status_ Education and Training

- Tianwan (WWER type)
 - Nuclear Physics and Radiation Protection
 - Nuclear Reactor Physics
 - Nuclear Reactor Thermal Hydraulics
 - NPP Safety and Safety culture
 - WWER Nuclear Island System
 - Nuclear Reactor Structure and Equipments
 - WWER Conventional Island System
 - WWER Operation
 - Instrumentation in NPP
 - NPP Control
 - PWR Chemistry
 - Pumps , Valves and Fans
 - Electrical System
 - Digital Control System



Potential Cooperation(1)

- Education and Training
 - shared teaching material, including CANTEACH
 - short visits to deliver short courses both in Canada and in China, perhaps related to professional development as opposed to university accredited programs
 - short (1 week) intensive MNR based experiments



Potential Cooperation (2)

- Research
 - sabbatical leave exchanges, university-university and university-industry.
 - student exchanges / industrial internship placements
- Arrange some technical presentations about the work from both sides.