WiN Taiwan

Chapter president	Yi-Hsiang CHENG (2016-18)
Chapter board members	Yi-Hsiang CHENG, President -- 2014 Ruei-Ying LIAO, Vice President -- 2015 Mei-Ling TU -- 1996 Ling-Wen CHEN -- 2004 Szu-Li CHANG -- 1996 LI-Fang KAO -- 1993 Ju-Chuan HUANG – 2016 Tsuey-Lin TSAI – 2012 Ting-Yi WANG – 2015
Number of members	Local/Global: 150/54
Chapter Country Contact	Yi-Hsiang CHENG
Chapter accepted by WiN Global	February 1994
Nuclear power infrastructure	In January 2016, Ms. Tsai Ing-wen was elected as the first female president in our history and her party, the Democratic Progressive Party (DPP), won a legislative majority. Soon after taking office on May 20, the DPP government announced a new energy policy and decided to strive toward its goal of nuclear power phase-out by 2025. The new energy policy means the existing three operating nuclear power plants will cease operation when their 40-year operating licenses expire, and foresees our major tasks in the road ahead be focused on ensure safe operation of existing plants while phasing out nuclear power as well as on nuclear plant decommissioning and radioactive waste management. There are three NPPs at Chinshan, Kuosheng and Maanshan, operated by state-owned utility Taipower, with two units at each site. They contributed to 14.1% of total electricity generated in 2015, down from 16.3% of the previous year. Construction of two ABWRs at the fourth plant, Lungmen, was nearly completed. However, effective July 1, 2015, Unit 1 has been mothballed, and construction of Unit 2 suspended; both expected to be scrapped. There is only one research reactor in operation, Tsing-Hua University Open-pool Reactor (THOR) for research and medical isotope production; the rest have been decommissioned. About half of the low-level waste is being stored at storage facilities at the NPP sites. The other half has been stored at an

	interim storage facility on an offshore island Lanyu. A spent fuel dry storage facility has been constructed onsite at the Chinshan NPP for four years, still pending approval of Taipower's Water and Soil Conservation Plan by the local government.
Nuclear medical applications	The Proton and Radiation Therapy Center at LinKuo Chang Gung Memorial Hospital was completed in 2014 and started its full operation since 2015; two other PRTCs are under construction. In addition, there are 11 cyclotrons at a research center and 9 hospitals for pharmaceuticals manufacturing, as well as large numbers of various medical equipment and facilities, such as Gamma Knife and Cyber. Comprehensive quality assurance programs have been implemented for mammography equipment, CTs and various radiotherapy facilities. The Institute of Nuclear Energy Research (INER) has engaged in the new radiopharmaceutical research for more than 20 years. Tc-99m Trodat-1 was the first Tc-99m-labeling radiopharmaceutical for dopamine-transporter imaging in the world which could be used for the diagnosis of Parkinson's and related diseases. The drug license-out for Tc-99m Trodat-1 to local industry was established in 2015. Re-188 Liposome is the brand-newly therapeutic radiopharmaceutical developed by INER. In 2014, the first-in-human phase 1 clinical trial of Re-188 Liposome for the metastatic cancer treatment was performed to evaluate the safety in Taiwan. Radiopharmaceutical Manufacturing Centre (RMC) in the INER has obtained 17 radiopharmaceutical drug licenses from Department of Health at Taiwan. The centre received the approval of PIC/s-GMP certification which is the newest manufacturing standard in Taiwan. RMC regularly supplies the radiopharmaceuticals for the domestic hospital need, but also supports the clinical application for international cooperation.
Waste management philosophy	The strategies for Low-level waste (LLW) management are "volume reduction, storage safely and final disposal." Since a volume reduction strategy program was launched in 1990, Taipower has successfully reduced its annual output of solidified LLRW to about 163 (55-gal) drums in 2015, which is only 1.3 % of over 12 thousand drums in 1983. Currently, the accumulated amount of LLW is about 221 thousand drums; roughly half stored at NPPs, half at Lanyu and about 7% at INER. In order to lay down a legal process for site selection of LLW final disposal facility, the "Act on Sites for Establishment of Low Level Radioactive Waste Final Disposal Facility" was promulgated in 2006. The Ministry of Economic Affairs (MOEA) selected two locations as Recommended Candidate Sites in July, 2012. Local referendum is required by law, however, local governments has not been cooperating with the central government in conducting such referendum due to significant pressure from antinuclear groups. Communications among all

	stake holders are much needed in order to move forward. The strategies for spent fuel management in Taiwan are "storage in spent fuel pools for the near term, onsite dry storage for the medium term, and final disposal for the long term". Currently, all spent nuclear fuels are stored in NPP storage pools. As for onsite dry storage, Taipower completed the construction and cold test for the dry storage facility at Chinshan NPP in 2012; and has since been awaiting approval of its Water and Soil Conservation Plan by New Taipei City Government to carry out hot test, then if passed, begin operation. Delays of the project have also been largely caused by mass anti-nuclear activities. A similar project on dry storage of spent fuel at Kuosheng NPP is also in progress. As to the final disposal, geological assessments (host rock characterization and evaluation) (2005-2017) are being conducted to determine suitable siting regions for spent nuclear fuel.
Research	Established in 1968, INER is a government agency with a history of credibly safeguarding dedicated to R&D on nuclear safety, nuclear facility decommissioning, radioactive waste treatment and disposal technology. INER also bears the mission of developing radiopharmaceuticals for the public well-being. In conformity with the national energy policy toward nuclear phase-out, INER has expanded its researches in recent years to include the development of green energy such as new and renewable energy, energy conservation and carbon emission reduction, in addition to participating in the energy-related economic policy research. In compliance with the government's ongoing reorganization plan, INER will become an affiliate to the "Ministry of Economic and Energy Affairs" under the new name—the "Institute of Energy Research." Major research activities conducted by INER include, among others: structural integrity of nuclear components and fuel cladding, development and applications of plasma technologies for nuclear power system lifecycle, clearing legacy nuclear facilities, construction of nuclear industry platform, development of solar photovoltaic technology, and development and applications of plasma technologies in the green energy-saving environment.
Chapter Updates	**WiN Global Annual Conference** – *Aug 2015*. A delegation of eight members attended the 23rd WIN Global Annual Meeting held in Vienna, Austria, as well as pre-/post-conference tours to nuclear facilities. The delegation was represented by members from the utility, government authority, universities, and nuclear society. Jessie Chiu of AEC and Evelyn Chen of TPC also attended the Executive and the Board meetings prior to the conference. **12-week Radiation Course** – *Sep-Dec 2015*. Members of WiN Taiwan organized and taught a 12-week course on "Knowing Radiation in Your Everyday Life" at Taipei City NeiHu Community

	College. This was the first time such a course was offered to community colleges. While only 12 registered for the course, overall reactions were exceptionally well. **Fall Seminar** – *Nov 2015*. Popular public speaker Tung Shen, professor and director of the Center for the Arts at the National Taiwan University, was invited to give a 2-hour speech on "Remembering Songwriter Chou Lanping"- one of her recent research topics. Her impromptu performance of sections of many Chou's songs gained her lots of applauds and helped bring back fond memories of the youth among middle-age audience. **Spring Outing** – *April2, 2016*. A visit to Taiwan's world-renown Cloud Gate Dance Theater at Danshui, suburb of Metropolitan Taipei attracted over 40 WiNners including family members. Besides touring their facilities, a 90-minute long presentation with demonstrations was given by a narrator who herself is a professional dancer. **Spring Seminar** – *May 4, 2016*. Mr. Chi-Yuan Ying, violinist and Paris-trained orchestra conductor, was invited to share an alternative way of appreciating music. A classical music lover, Mr. Ying has devoted himself to music appreciation education to students, performing artists and general public. **WiN Taiwan Annual Meeting** – *Aug 11, 2016*. The annual meeting was held jointly with Taiwan Section of the American Nuclear Society at INER's conference facilities in Lungtan. A total of over 120 participated at the Meeting. Organization expert Ms. Nien-Hsian Guan was invited to give a speech on getting office/home tidied up. After lunch, two INER experts presented their research work on D&D and radiation application in medicine. There was also a short visit, including a guided tour, of the nearby SanKang Ecological Park after the meeting. **Coming up:** **Fall Seminar** – *Nov 9, 2016*. Prof. Daisy Lan Hung, Director of the Institute of Cognitive Psychology Research at the National Central University and author of dozens of books, was invited to speak on how to control emotions and work happily. **Special Seminar** – *Dec 9, 2016*. Prof. Keizou Ishii of Japan's Tohoku University has been invited to share the status on and techniques used for environmental cleanup at the Fukushima Daiichi site after the nuclear accident.