PNRI Newsletter

A newsletter of the Philippine Nuclear Research Institute (PNRI)

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IAEA DIRECTOR GENERAL YUKIYA AMANO VISITS THE PHILIPPINES

Top: International Atomic Energy Agency (IAEA) Director General Yukiya Amano (right) with DOST Secretary Mario Montejo (left) during the Director General's visit at the PNRI.

International Atomic Energy Agency (IAEA) Director-General Yukiya Amano, in a statement delivered at the Department of Science and Technology - Philippine Nuclear Research Institute (DOST-PNRI), commended the Philippines for the extensive applications and projects of nuclear technology in various fields, as well as its cooperation with other IAEA Member States.

"Your country is not only using these technologies for your purpose, but you are also helping other countries in sharing technology, in your region and beyond; this is very important, and I thank you for your cooperation," said Director-General Amano.

Director General Amano has just recently concluded a visit to the Philippines to witness firsthand the country's latest advances in nuclear science and technology.

The one and a half - day visit to the country on January 27 – 28, 2015 was part of a larger tour of the IAEA Member States of Southeast Asia, particularly in Indonesia, Malaysia, Singapore and Brunei.

The Philippines has been a Member State of the International Atomic Energy Agency (IAEA) since 1958.

The IAEA, which was established in 1957 as the "Atoms for Peace" organization within the United Nations family, is the world's foremost organization for scientific and technical cooperation in the peaceful use of nuclear technology

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The PNRI Newsletter is an online publication of the Philippine Nuclear Research Institute (PNRI), a research and development institute of the Department of Science and Technology (DOST).

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From the Director

Greetings to everyone!

Once again, the Philippine Nuclear Research Institute makes us all proud as it crowns the first quarter of 2015 with recognition and accomplishments.

First among these was the successful visit of Director General Yukiya Amano of the International Atomic Energy Agency (IAEA) last January 27-28, wherein he visited the various PNRI facilities and projects. His visit to the Philippines was part of a tour to Southeast Asian Member States of the IAEA, and the Director General was very pleased and impressed with our country's progress in nuclear science and technology.

It is also my pleasure to formally announce that the PNRI is now certified under ISO 9001:2008 for Quality Management Systems, expanding from the Institute's Nuclear Regulatory QMS since 2008 to its current scope encompassing all the divisions of the PNRI. As I have always been saying, this is the product of team effort and we could not have done it without the work of each and everyone of us here at the Institute.

PNRI continues to actively cooperate with the IAEA and other agencies in terms of workshops on nuclear safeguards & security,radioactive waste management and awareness on nuclear S&T. PNRI's partnership with the Japan Atomic Energy Agency (JAEA) once again bore fruit with another batch of Follow-up Training Courses on Nuclear Emergency Preparedness and Response, Environmental Radioactivity Monitoring and Reactor Engineering.

PNRI also does its part alongside our partners from various government agencies in a joint effort to protect the public. Preparations are already being made for the Asia-Pacific Economic Cooperation (APEC) Leader's Summit to be hosted by the Philippines in November this year.

Indeed, PNRI has started the year right, and in light of these accomplishments, I would like to once again congratulate everyone in the Institute for a job well done. Still, we hope that this is only the beginning of an even more fruitful year, and we commit to fulfill our mandate to the best of our abilities.

PNRI NEWS

PNRI Now Certified Under ISO 9000:2008

PNRI Director Dr. Alumanda Dela Rosa (5th from left) and CIP Managing Director Mr. Renato Navarrete (4th from right). From Left to Right: Chemistry Research Section Head Dr. Lucille Abad, Document Custodian, OIC, Technology Diffusion Division and Managemen Information System Section Head Ms. Ana Elena Conjares, Atomic Research Division Chief Dr. Soledad Castañeda, Finance and Administrative Division Chief Dr. Graceta Cuevas, PNRI Director Dr. Dela Rosa, CIP Managing Director Navarette, Quality Management Representative and Nuclear Regulatory Division Chief Mr. Teofilo Leonin, PNRI Quality Management System Committee Chariman Mr. Alan Borras, and OIC, Office of the Deputy Director and Nuclear Services Division Chief Dr. Christina Petrache.

DOST-PNRI is now certified under the International Organization for Standardization (ISO) 9001:2008 standard for quality management systems, getting the Institute one step closer to its vision as an institution of excellence in nuclear science and technology, propelled by a dynamic and committed workforce in the mainstream of national development.

Certification International Philippines (CIP) Managing Director, Renato Navarrete, graced the formal ceremonies held on February 9 to personally award the ISO certification to PNRI.

At the formal ceremonies, PNRI Director Dr. Alumanda Dela Rosa thanked and congratulated all the employees and staff of PNRI for their efforts in achieving the certification.

"This is just the beginning, and I suppose this is not the hardest part. The hardest part is to fulfill our commitment and to sustain our certification, and this again requires the hardwork and cooperation of everyone of us," exhorted the Director.

According to CIP, quality management systems are implemented to be able to more efficiently achieve the organization's various objectives and, moreover, to continuously improve service to customers, particularly through a process-based approach both in the performance and assessment of the work being done in the organization.

These procedures are regularly audited to ensure that the various sections and units are meeting their respective quality objectives.

The certification was issued and took effect on December 4, 2014. This is an expansion from the certification of PNRI's Nuclear Regulatory QMS awarded on November 2008.

IAEA Officers Visit PNRI For Project Review

IAEA Project Management Officer Mr. Ho-Seung Lee (3rd from left) and Technical Officer Mr. Jin Kwang Lee (2nd from left) with PNRI Director Dr. Alumanda Dela Rosa (center) and members of the senior staff at the debriefing meeting

Keeping the Philippines' partnership with the International Atomic Energy Agency strong and efficient, Mr. Ho-Seung Lee, Project Management Officer for the Philippines, met with PNRI Director Dr. Alumanda Dela Rosa and members of the senior staff to discuss the progress of several technical cooperation projects between PNRI and the IAEA, as well as the proposals for future projects for 2016-2017. Joining him in his visit to the country from March 9 to 13 is Mr. Jin Kwang Lee, Technical Officer for the Nuclear Power Proposal, who also met with officials from PNRI and the Department of Energy (DOE) regarding the future of nuclear power in the Philippines.

IAEA Director General - Continued from Page 1

The Director General emphasized the ever-increasing role of the IAEA and nuclear applications in the development of countries around the globe.

"In a sense, for me, the IAEA is not only 'Atoms for Peace', but 'Atoms for Peace and Development' and this objective needs to be carried out by all the members of the IAEA," he said.

Director General Amano also addressed questions from journalists regarding the future of nuclear power, emphasizing that "it is your country, your people, who decide whether nuclear power is good for your country or not."

"The role of the IAEA is to help them when they decide to use nuclear power. What we do is to help them to use nuclear power safely, securely and sustainably," said the Director General.

For his part, DOST Secretary Mario Montejo expressed his gratitude and optimism for the continued partnership of the IAEA and the DOST, through PNRI, in future technical cooperation projects.

"This visit highlights the strong partnership nurtured through the years by the two partners that is the promise of what technical cooperation can bring about," said Secretary Montejo.

Director General Tours IAEA Projects

IAEA Director General Amano toured the latest facilities of PNRI which received assistance from the IAEA, including the Electron Beam Facility for advanced irradiation applications, the Technetium-99m Generator Facility for the production of radiopharmaceuticals, and the Isotope Ratio Mass Spectrometry Laboratory which will make isotope analytical services cheaper and more accessible to researchers.

The IAEA Chief also visited the Centralized Medical Cyclotron Facility at the National Kidney and Transplant Institute.

The facility, which is the second cyclotron to be established in the country, will help make Positron Emission Tomography radiopharmaceuticals more available in nuclear medicine centers throughout the country. With technical assistance from the IAEA, PNRI coordinated a task force composed of the private and government sectors to facilitate the establishment of this facility.

Director General Visits IAEA Pilot Schools

DG Amano also interacted with the students, teachers and officials of Quezon City Science High School and San Francisco High School. These two pilot schools are currently involved in an IAEA outreach program to encourage high school students to take Science, Technology, Engineering, and Mathematics (STEM) courses, particularly on nuclear science and technology.

The IAEA has selected the Philippines as one of the pilot countries, along with Indonesia, Malaysia and the United Arab Emirates, in launching an outreach program on nuclear science & technology for secondary schools. The outreach project is being undertaken through the collaboration of the DOST-PNRI and the Quezon City Division of City Schools of the Department of Education.

DOST Secretary Montejo extended the invitation for Director General Amano to be the guest speaker at the 3rd Philippine Nuclear Congress to be held on December 7-9, 2015.

IAEA Director General Amano with Ambassador Lourdes Yparraguirre, DOST Secretary Mario Montejo, DOST Usec. Dr. Ameila Guevara, and PNRI Director Dr. Dela Rosa with project leaders and PNRI officials.

Left: IAEA Director General Amano visited the Electron Beam (Top Left) and Cobalt-60 (Top Right) Irradiation Facilities, the Technetium-99m Generator Facility (Below Left) and the Centralized Medical Cyclotron Facility (Below Right) with DOST Undersecretary Amelia Guevara and PNRI Director Dr. Alumanda Dela Rosa (Top Right and Below Left Photos by DOST-STII)

The Director General observes a student activity during robotics class (Bottom Left) at San Francisco High School. At Quezon City Science High School, he also interacted with the QCSHS POWER SET students (Bottom Right)

PNRI Signs MOU With Canada

The Philippines' international cooperation in the field of nuclear security flourishes once again as the DOST-PNRI signed a Memorandum of Understanding with the Canadian Department of Foreign Affairs, Trade and Development (DFATD) on January 12, 2015.

The memorandum establishes a framework of cooperation between the Philippines and Canada in terms of services and training aimed at strengthening Filipino capacity to defend against radiological and nuclear threats.

Specifically, the MOU provides for future activities between the PNRI and DFATD in furtherance of the G-8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction.

The PNRI Nuclear Safeguards and Security Section coordinated the visits of Mr. Mark Ling and Ms. Cathy Ashby Spears of the DFATD Global Partnership Program.

As part of the memorandum, meetings and discussions were later facilitated in preparation for the installation of the physical protection system of the Philippine Research Reactor 1 (PRR-1) at the PNRI Compound.

PNRI Director Dr. Alumanda Dela Rosa (seated left) with Nuclear Security Advisor Mr. Mark Ling (seated right) and Program Officer Ms. Cathy Ashby Spears (seated center) at the signing of the Memorandum of Understanding between the DOST-PNRI and the Canadian Department of Foreign Affairs, Trade and Development (DFATD). Also present during the signing (from left to right) are PNRI Officer-in-Charge, Office of the Deputy Director Dr. Christina Petrache, Nuclear Safeguards and Security Section Head Ms. Julietta Seguis and International Cooperation Section Officer-in-Charge Ms. Nydia Medina

Coordination Meeting for APEC Summit

PNRI Director Dr. Alumanda Dela Rosa (seated, 2nd from right), IAEA expert Mr. Carlos Nogueira De Oliveira (seated, 2nd from left), PNRI Nuclear Regulatory Division Chief Mr. Teofilo Leonin (seated, extreme right) and PNRI Nuclear Safeguards and Security Section Head Ms. Julietta Seguis (seated, extreme left) with representatives from the various government agencies tasked to coordinate and implement nuclear security measures

In preparation for the 27th APEC Leaders Summit to be hosted by the Philippines from November 18-19, 2015, the DOST-PNRI in cooperation with the International Atomic Energy Agency (IAEA) hosted the Coordination Meeting for a Major Public Event from March 11-13 at the PNRI compound.

PNRI and IAEA officials finalized the joint action plan to implement nuclear security measures for the event with representatives from various government agencies such as the Department of Defense, Armed Forces of the Philippines, Philippine National Police, Anti-Terrorism Council, National Security Council, National Intelligence Coordinating Agency, Bureau of Fire Protection, Department of Health - Health Emergency Management Bureau, Department of Foreign Affairs - Office of the United Nations and Other International Organizations, and the Presidential Security Group.

Prior to this meeting, the PNRI Nuclear Safeguards & Security Section hosted a preparatory meeting on February17.

PNRI Regulator at IAEA Mission to Fukushima Nuclear Plant

Proving that Filipinos are more than capable of being at the forefront of the international scientific community, a regulator from DOST-PNRI represented the Philippines in an expert mission of the International Atomic Energy Agency (IAEA) to Japan this February.

In the field of nuclear safety and security, PNRI Regulations and Standards Development Section Head Ms. Maria Visitacion Palattao was part of the IAEA review team during the *International Peer Review of Japan's Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station Units 1-4* held on February 9-17.

Ms. Palattao was the lone Asian among 15 experts from IAEA as well as the nuclear industry who observed and examined the decommissioning of the Fukushima Nuclear Power Plant, which was damaged by a tsunami on March 2011, causing a nuclear accident.

Ms. Maria Visitacion Palattao prepares for a tour of the Fukushima Daiichi site with the IAEA review team. (Photo from the IAEA)

According to the IAEA, the team's efforts were also aimed at strengthening the global nuclear framework and encouraging peer review missions to take full advantage of the experience of fellow Member States.

IAEA Fellow Trains at PNRI for IT Systems

in line with the Philippines' participation in implementing the IAEA Regulatory Authority Information System among nuclear regulatory organizations across the globe, the DOST-PNRI hosted an International Atomic Energy Agency (IAEA) fellow this first quarter of 2015.

IT technical staff Mr. Zaher Jirou of the Atomic Energy Commission of Syria (AECS) trained under the supervision of Technology Diffusion Division Officer-in-Charge and Management Information Systems Section Head Ms. Ana Elena Conjares and assisted by Ms. Jeza Buctot from the same section.

His training was coordinated with the IAEA through the International Cooperation Section headed by Ms. Nydia Medina.

The fellowship visit was conducted under IAEA Technical Cooperation Project RAS 90629004 on Promoting & Maintaining Regulatory Infrastructure for the Control of Radiation Sources.

As part of his training, the IAEA fellow was familliarized with the installation andcustomization of higher versions of RAIS,particularly RAIS 3.0 and 3.3, to simulate thecurrent version in Syria.

The RAIS software application serves as a management tool to support nuclear regulatory bodies such as PNRI in the discharge of their functions.

Mr. Jirou's fellowship in the Philippines reflects the IAEA's recognition of the PNRI's technical expertise in implementing the IT infrastructure of RAIS 3.3, demonstrated by the expert mission assignments of Ms. Conjares to train and conduct lectures with regulatory staff of nuclear agencies in Myanmar and Laos PDR last June and October 2014, respectively.

Ms. Conjares also participated in two consultancy meetings with five other international experts to develop the technical specifications of the new version of RAIS 4.

IAEA Fellow Mr. Zaher Jirou (seated, wearing white) with PNRI Technology Diffusion Division Chief Officer-in-Charge and Management & Information Systems Section Head Ms. Ana Elena Conjares (standing, wearing black)

Ms. Conjares served as an expert in the Workshop & Training Course for the Regulatory Body on Installing, Customizing and Using RAIS 3.3 at the Ministry of Science and Technology of Laos PDR held from October 13-17, 2014.

Workshops/Training Courses

Educational Outreach Program on Nuclear Science and Technology For Secondary Schools

Bringing nuclear science and technology to Filipino students and teachers, the DOST-PNRI in cooperation with the Quezon City Division of City Schools of the Department of Education (DepEd) held the Seminar-Workshop on Nuclear Science and Technology for Secondary Schools from January 22-24 at the Quezon City Science Interactive Center.

Students and Teachers from San Francisco High School and Quezon City Science High School pose with the lecturers and PNRI officials.

The seminar-workshop serves as the first wave of an outreach program on nuclear science and technology for secondary schools implemented in the Philippines under the International Atomic Energy Agency (IAEA) Project RAS/0/065 on Supporting Sustainability and Networking of National Nuclear Institutions in Asia and the Pacific Region.

The Philippines was chosen as a pilot country for the IAEA project along with Indonesia, Malaysia and the United Arab Emirates in addressing what the IAEA recognizes as a very vital area in reaching out and developing the interest of the youth in nuclear science & technology by adopting the best practices in science education for secondary schools in the region.

Ten (10) science teachers and 175 Grade 9 and Fourth Year high school students from Quezon City Science High School and San Francisco High School (the 2 pilot schools)

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IAEA Regional Workshop on Conditioning Category 3-5 Radioactive Sources

Left: International Atomic Energy Agency experts Mr. Juan Carlos Benitez-Navarro and Mr. Vilmos Friedrich (1st row, 7th from right and left, respectively) with PNRI Director Dr. Alumanda Dela Rosa (1st row, center) and the participants & lecturers of the regional workshop

Center: Clad in protective gear, IAEA expert Mr. Navarro demonstrates procedures for conditioning radioactive sources

Right: IAEA Expert Mr. Friedrich and Course Coordinator Ms. Editha Marcelo during a radiation monitoring exercise with participants from various countries at the PNRI Radioactive Waste Management Facility

As part of the regional effort in improving radioactive waste management throughout the Asia-Pacific region, DOST-PNRI hosted the Regional Workshop on Management Options for Disused Sealed Radioactive Sources of Category 3-5 from February 24-27 at the PNRI Compound in Diliman, Quezon City. The workshop was conducted in cooperation with the International Atomic Energy Agency (IAEA).

Under IAEA Technical Cooperation Project RAS9071 on Establishing a Radioactive Waste Management Infrastructure, the four-day workshop featured discussions and practical demonstrations on radiation protection procedures for the management of disused sealed radioactive materials, particularly on the use of dismantling devices and the removal & conditioning of Category 3-5 sources commonly used in industrial, educational and research applications.

Participants include representatives from Bangladesh, Cambodia, Indonesia, Malaysia, Myanmar, Mongolia, Iran, Iraq, Oman, Pakistan, Thailand and Vietnam, as well as various regulators and researchers from PNRI. Most of the practical exercises were conducted at the newly refurbished trenches of the PNRI Radioactive Waste Management Facility, which serves as the only centralized waste processing and storage facility for low-level radioactive wastes in the country.

Experts from the IAEA and the PNRI Radiation Protection Section discussed the life cycle and characterization of sealed radioactive sources, as well as the various conditioning procedures, protection measures and technical options available for managing these wastes. Besides conducting the lectures and activities, the IAEA experts also assisted in the actual conditioning of 101 Category 3-5 radioactive sources with a total activity of 1.5 curies at the PNRI waste management facility.

Follow-Up Training Course on Nuclear Emergency Preparedness and Response

Left: Experts from the Japan Atomic Energy Agency, Mr. Nobuyuki Masaki (1st row, 2nd from left) and Mr. Seiichi Kanaizuka (1st row, 2nd from right) with Ms. Mary Rose Mundo (Course Coordinator) and Mr. Joseph Tugo (Assistant Coordinator) of the PNRI Radiological Impact Assessment Section join the participants clad in their personal protective equipment (PPE)

Right: The participants during a simulated field exercise involving a radiological dispersal device (RDD).

The DOST-PNRI in cooperation with the Japan Atomic Energy Agency (JAEA) conducted the Follow-up Training Course on Nuclear and Radiological Emergency Preparedness and Response from February 9-13 at the PNRI Compound.

The five-day national workshop provided participants with basic understanding of the principles of radiation protection, enhanced the emergency response capabilities of the various member agencies of the National Radiological Emergency Preparedness and Response Plan (RADPLAN) and provided practical guidance on communication principles during nuclear and radiological emergencies. The workshop was attended by twenty-five (25) representatives of RADPLAN agencies and PNRI staff, including the, National Disaster Risk Reduction and Management Council (NDRRMC), Quezon City Disaster Risk Reduction and Management Office (QCDRRMO), Philippine National Police – Quezon City Police District (PNP-QCPD), Health Emergency Management Bureau (HEMB-DOH), Bureau of Fire Protection – Quezon City (BFP-QC-DILG), Philippine Army Explosives and Ordnance Disposal Battalion (AFP-EOD) and the Metropolitan Manila Development Authority (MMDA).

The workshop was supervised by two JAEA experts, Mr. Nobuyuki Masaki and Mr. Seiichi Kanaizuka, who also served as consultants & eight (8) PNRI staff, Ms. Mary Rose Mundo (Workshop Coordinator), Ms. Haydee Solomon, Mr. Joseph Tugo, Mr. Frank Pares, Mr. Teofilo Leonin, Ms. Cecile De Vera, Mr. Carl Nohay, Ms. Teresa Salabit and Dr. Emma Cansino,who served as lecturers and evaluators.

The workshop consisted of lectures and practical exercises/drills on radiation safety, protection and survey, decontamination techniques, and environmental monitoring during nuclear and radiological emergencies.

The highlight of the workshop was the integrated radiological field exercise which provided the participants with practical learning on the concept of operations during response to a radiological emergency and the roles & responsibilities of RADPLAN agencies in a simulated field exercise involving a radiological dispersal device (RDD).

Follow-Up Training Course on Environmental Radioactivity Monitoring

Left: Experts from the Japan Atomic Energy Agency, Mr. Shinichiro Torata and Dr. Osamu Amano (1st row, 7th from left and right, respectively) with PNRI Director Dr. Alumanda Dela Rosa (1st row, center) join the participants and lecturers of the training course

Right: Participants training in the use of survey meters for monitoring radiation levels at the PNRI ompound

DOST-PNRI in cooperation with the Japan Atomic Energy Agency (JAEA) conducted the Follow-up Training Course on Environmental Radioactivity Monitoring from February 23-27 at the PNRI compound. The week-long training course imparts the basics of radiation monitoring as well as practical skills in performing procedures for sampling & laboratory processing, demonstration of analytical equipment and radioactivity measurement throughout the environment.

The participants include 26 representatives from the Department of Environment and Natural Resources – Environmental Management Bureau (DENR-EMB), Philippine Atmospheric, Geophysical and Astronomical Services Administration (DOST-PAGASA), the Department of Agriculture – Bureau of Soils and Water Management (DA-BSWM), National Disaster Risk Reduction & Management Council (NDRRMC) and PNRI researchers. The course was supervised by experts from JAEA - Mr. Shinichiro Torata and Dr. Osamu Amano, as well as 9 PNRI lecturers, Dr. Soledad Castañeda, Mr. Teofilo Garcia, Ms. Adelina Bulos, Ms. Rosario Encabo, Ms. Veriza Rita Cruz, Mr. Charles Darwin Racadio, Mr. Alfonso Singayan, Ms. Lynette Cayabo and Ms. Jennyvi Ramirez.

The Japanese experts also shared their knowledge & experience in environmental radioactivity monitoring, especially in light of the Fukushima Nuclear Power Plant Accident in 2011. The experts also discussed on special topics such as the migration of radionuclides in the environment and radioactive waste management.

Follow-Up Training Course on Reactor Engineering

The DOST-PNRI in cooperation with the Japan Atomic Energy Agency (JAEA) conducted the Follow-up Training Course on Reactor Engineering from March 2 to 13 at the PNRI Nuclear Training Center.

Fifteen participants from the National Power Corporation, Philippine Normal University, Surigao Del Sur State University and Bagong Silangan High School joined the two-week training course which covered the basics of nuclear reactor physics and operation, among others. Researchers from PNRI also participated in the course.

Three experts from the Japan Atomic Energy Agency (JAEA), Dr. Nobuyoshi Arai, Dr. Masanori Kaminaga and Dr. Keisuke Okumura, supervised the training course.

The lecturers were Dr. Joseph Auresenia, Chemical Engineering Department Chairman of De La Salle University, as well as ten PNRI staff: Mr. Carl Nohay, Mr. Nelson Badinas, Ms. Kristine Marie Romallosa, Mr. Alfonso Singayan, Mr. Giuseppe Filam Dean, Ms. Alvie Asuncion, Mr. Joseph Tugo, Ms. Cheri Anne Dingle, Mr. Adrian Cruz and Ms. Marianna Lourdes Marie Grande.

PNRI Nuclear Training Center Officer-in-Charge Mr. Roel Loteriña (1st row, 8th from left), FTC Course Coordinator Mr. Carl Nohay (1st row, 4th from right) and Dr. Nobuyoshi Arai of the Japan Atomic Energy Agency (1st row, 8th from right) join the participants and lecturers of the training course

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Workshop on the Quality Assurance and Quality Control for Nuclear Safeguards

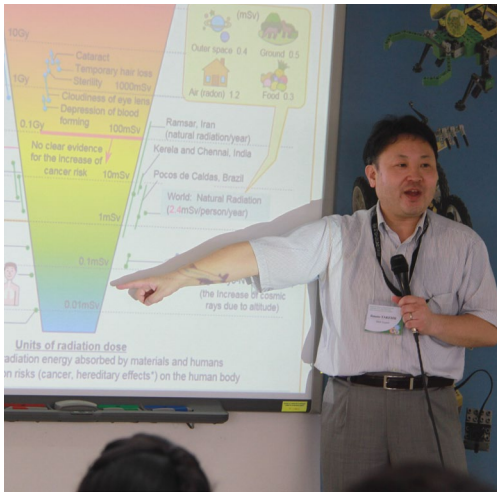
From Left: PNRI Nuclear Regulatory Division Chief Mr. Teofilo Leonin, US Department of Energy Experts Mr. John Oakberg, Dr. Bryan Bandong, Mr. Mo Bissani, Ms. Oksana Elkhamri and Ms. Maria Umayam, PNRI Nuclear Safeguards and Security Section Head Ms. Julietta Seguis and PNRI Technology Diffusion Division Officer-in-Charge Ms. Ana Elena Conjares with the workshop participants

Keeping our nuclear safeguards up to date with international standards for quality assurance and control, the DOST-PNRI hosted the Workshop on the Quality Assurance and Quality Control for Nuclear Safeguards from March 16-19 at the PNRI compound. Experts from the United States Department of Energy (USDOE) led the conduct of the workshop with officials and regulators of the PNRI Nuclear Regulatory Division participating in the four-day workshop. The Philippines has been participating in the International Nuclear Safeguards Engagement Program (INSEP) of the USDOE National Nuclear Security Administration (NNSA) since 2010.

The road map was formulated with an Action Sheet for the implementation of the Additional Protocol. INSEP also offered Quality Management Systems (QMS) & Integrated Management Systems (IMS) to their counterparts. The Philippines was the first in Southeast Asia to take part in this program which hosted the workshop on QMS/IMS.

The Lawrence Livermore National Laboratory offered their assistance not only for safeguards but also for laboratories which are certified under ISO 17025.

Seminar-Workshop on Nuke S&T for Secondary Schools - Continued from Page 6



From Left to Right: The seminar-workshop's experts, Dr. Iimoto Takeshi from the University of Tokyo, Ms. Valerie Segovia from the Nuclear Power Institute, and Mr. Itaru Takahashi of the Japan Atomic Energy Relations Organization

were selected to participate in the seminar-workshop, where experts from the IAEA conducted lectures and hands-on experiments on the basics of nuclear science and its applications, particularly on radiation.

The students and science teachers had the opportunity to monitor radiation in the environment through portable "Hakaru-kun" Mr. Gamma Radiation Monitors. They also had the chance to "see" radiation through alpha tracks made in cloud chamber experiments using dry ice. Everyone said it was their first time seeing radiation tracks.

The lecturers from the IAEA also helped inspire more students to eventually engage in Science, Technology, Engineering and Mathematics (STEM) careers after graduating from high school to address the declining interest among students in these courses.

A seminar for the DepEd officials, science supervisors and science teachers was also held to discuss about the various approaches they use on presenting science and technology in the classroom, as well as on creating and sustaining their interest in these fields through various activities.

Beyond pen-and-paper worksheets and other academic exercises, the seminar-workshop also encouraged the students to showcase their talents to help in the promotion of science and technology, particularly nuclear S&T. The participants were divided into teams as they competed for the best presentations on what they learned during the lectures, which ranged from rhetorical speeches and poems to song compositions and dance numbers.

On the last day, 50 female students who were selected as members of the newly-

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FTC on Reactor Engineering Continued from Page 8

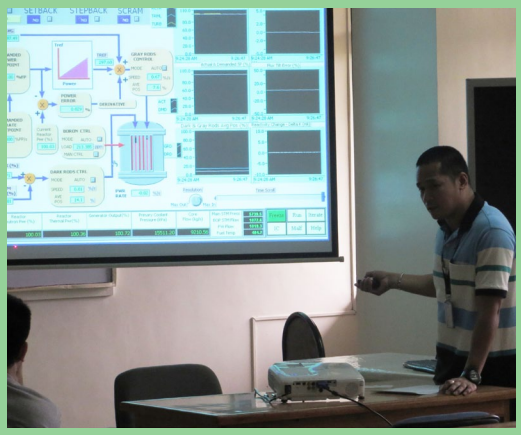
Lectures and exercises focused on the basics of radiation physics, nuclear energy production, radiation detection, and the neutron life cycle in a reactor.

The participants were familiarized with existing reactor technologies and nuclear reactor calculations and were also taught the basics of thermal hydraulics and reactor safety. Experts also facilitated several experiments on radiation measurement and survey, reactor operation simulation and neutron moderation.

The Japanese experts also conducted special lectures for the FTC lecturers and selected participants, focusing on advanced concepts on reactor physics and nuclear engineering, reactor calculations and thermal hydraulics in reactors during various conditions.

Participants were also given a guided tour of various nuclear facilities in the Philippines, particularly the Bataan Nuclear Power Plant and the Philippine Research Reactor-1 at PNRI.

They also visited other facilities of PNRI such as the Secondary Standards Dosimetry Laboratory, the Cobalt-60 Multipurpose Irradiation Facility and the recently inaugurated Electron Beam Facility.



Top: The participants visit the control room (left) and reactor pool (right) of the Philippine Research Reactor - 1 (PRR-1) at PNRI

Below: Training exercises on radioactivity measurement (left) and a simulated reactor operation (right)

Seminar-Workshop on Nuke S&T for Secondary Schools - Continued from Page 10

formed Powerful Opportunities for Women Eager and Ready for Science Engineering and Technology (POWER SET) under the outreach program facilitated a science-themed sportsfest dubbed "Scilympics", where teams composed of students from both schools competed in challenges that require the application of basic scientific principles such as buoyancy, air resistance and static electricity, among others.

During his visit to the Philippines the following week, IAEA Director General Yukiya Amano praised the enthusiasm and promising potential that the schools have shown in participating in the project.

"I congratulate you for your interest in science and technology, and particularly in nuclear science and technology, and I wish you all the success," he said to the pilot schools on January 27.

"The future of your country will be based on science and technology, and the young generation is the hope for the future. I think your country is heading towards a very good direction."

The seminar-workshop is the first out of three planned throughout 2015 under the outreach program.

IAEA Pilot High Schools Visit BNPP

As part of the IAEA outreach program for secondary schools, selected faculty and high school students in Quezon City went on guided tours of the Bataan Nuclear Power Plant at Napot Point, Morong, Bataan. The tours were facilitated by the National Power Corporation (NPC), which opened the plant to tourists in 2008 as part of their information, education and communication program on nuclear power.

The first batch who visited the plant on February 28 consisted of science teachers from San Francisco High School and Quezon City Science High School, along with other officials and faculty of the Department of Education – Quezon City Division of City Schools, with communicators and public information officers of various government agencies.

NPC Asset Preservation Department Manager Engr. Mauro Marcelo delivered a briefing on the use of nuclear energy for power generation and the BNPP, before touring them inside the plant.

The second batch composed of selected female students from the pilot schools visited BNPP on March 14 accompanied by their teachers and PNRI staff.

The students are members of the newly-formed Powerful Opportunities for Women Eager and Ready for Science Engineering and Technology (POWER SET) organization under the outreach program.

The tour was sponsored by former Congressman Mark Cojuangco, who was the principal author of House Bill 4631 filed during the 14th Congress for the recommissioning of the mothballed nuclear plant to solve the country's problems with energy and electricity costs.

Everybody had a chance to see first-hand the still-functional turbines and generator, the control room, the reactor pressure vessel and the spent fuel pool. The engineers from the BNPP, who served as the tour guides, dismissed the widespread rumors and misinformation alleged against BNPP and nuclear power in general, attesting to the plant's capability to withstand strong earthquakes and tsunamis, and the continued quality maintenance of its facilities.

The visitors were grateful for the once-in-a-lifetime experience, and many of them expressed a more open view on the peaceful uses and benefits of nuclear energy.

Students from San Francisco High School and Quezon City Science High School during a tour of the Bataan Nuclear Power Plant with Former Congressman Mark Cojuangco (Center, Blue Polo), NPC engineers and PNRI staff

Other PNRI Events

2015 PNRI Intercolor Sportsfest

In order to foster teamwork and camaraderie among employees and staff, the Philippine Nuclear Research Institute Employees Union (PNRIEU) organized the 2015 PNRI Intercolor Sportsfest. Three teams - blue, red and yellow - competed in different sports and activities such as volleyball, basketball, table tennis, darts and chess, among others.

Wreath-Laying at the General Florencio Medina Monument

The family of the late Brigadier General Florencio Medina, the Father of Atomic Energy in the Philippines, paid respects at his monument at the Department of Science and Technology - Philippine Nuclear Research Institute (DOST-PNRI) this February 16.

Former PNRI Technology Diffusion Division (TDD) Chief Ms. Victoria Fe Medina (extreme left), with the Medina Family at the monument of General Florencio Medina at the PNRI compound

About Us

The Philippine Nuclear Research Institute (PNRI) is a research and development institute under the Department of Science and Technology (DOST) mandated by law to undertake research and development activities in the peaceful uses of nuclear energy, render nuclear and specialized services and exercise regulatory control in the field of nuclear science and technology. The Institute has been serving the public for the past 55 years, harnessing the beneficial applications of nuclear energy while ensuring the safe use and security of radioactive materials and nuclear facilities for the protection of workers, the general public and the environment.

PNRI Vision

The PNRI is an institution of excellence in nuclear science and technology propelled by a dynamic and committed workforce in the mainstream of national development.

PNRI Mission

We contribute to the improvement of the quality of Filipino life through the highest standards of nuclear research and development, specialized nuclear services, nuclear technology transfer and effective and efficient implementation of nuclear safety practices and regulations.

PNRI Newsletter

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