COUNTRY REPORT ON PUBLIC INFORMATION ACTIVITIES IN THE PHILIPPINES

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PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

In the Philippines, the agency that has been mandated to advance and regulate the safe and peaceful uses of nuclear science and technology is the Philippine Nuclear Research Institute (PNRI).

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

To carry out this mandate, PNRI

- Conducts research & development on the applications of radiation and nuclear techniques, materials and processes
- Licenses & regulates activities relative to production, transfer and use of nuclear and radioactive substances
- Undertakes the promotion of nuclear S & T and transfer of research results to end-users

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

The promotion of nuclear S & T and transfer of research results to end-users are carried out through:

- Extension of nuclear services to various sectors
- Conduct of nuclear training courses
- Implementation of public information activities on nuclear science and technology for various target groups

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

From November 2002 to October 2003, the PNRI implemented its public information activities with support/cooperation of:

- Department of Science and Technology (DOST)
- Technology Application & Promotion Institute
- Nuclear organizations: RSP, PARP, PSNT, NRF
- FNCA - public information

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

Activities from November 2002 to October 2003

- Development/production of information materials
- Participation in special events
- Conduct of nuclear awareness seminars and advocacy program on food irradiation
- Guided tour of PNRI facilities
- Linkages with the mass media

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Topics Disseminated
  - Basic concepts about nuclear energy/radiation
  - PNRI functions and activities
  - Beneficial applications of nuclear technology in various fields including:
    - Radiation processing
    - Nuclear power generation (basic concepts, factual answers to commonly raised nuclear issues)

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Public Information on Nuclear Power
  - Discussions on issues/concerns about nuclear power have diminished in the past years.
  - These may be attributed to the following:
    - Approval of plans to convert the mothballed 620 MW Bataan Nuclear Power Plant (BNNP) into a natural gas –fired power facility in 1997
    - Recent decision of the Dept of Energy to abandon plans to convert the BNPP into a natural gas-fired power facility

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Development of Nuclear Information Materials
  - Five graphic display banners (3 by 7 ft),
  - 8 brochures, and
  - One interactive DVD presentation on nuclear technologies/ services

Initially produced for PNRI's participation in S & T Fairs, advocacy program on food irradiation and seminars on emergency preparedness

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Development of Nuclear Information Materials
  - PNRI Annual Report
  - CD-based multimedia presentation on the PNRI and on basic concepts about the atom, radiation and radioactivity. This can serve as a learning resource material for teachers and students

2,500 copies will be produced in November; **Some features**: colorful animations, photos & illustrations, timeline of nuclear science development, glossary

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Participation in Special S&T Events
  - Atomic Energy Week — PNRI, Dec. 9 - 13, 2002
    - Around 6,100 visitors (professional groups, students, teachers, researchers) availed of the guided tours of PNRI facilities and laboratories, lecture-demonstrations and video showings
    - Radioactive source hunting game

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Atomic Energy Week —PNRI, Dec. 9 - 13,2002
  - Technical poster contest on R&D projects (PNRI technical staff)
  - Nuclear science quiz - participated in by 30 high school students (public and private) in Metro Manila; 14 Divisions were represented

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Atomic Energy Week - PNRI, Dec. 9 -13, 2002
  - Three nuclear organizations held their annual conventions at PNRI
    - Radioisotope Society of the Philippines, Inc.
    - Philippine Society for Nondestructive Testing
    - Philippine Association for Radiation Protection
  - Technical sessions in industry, health and environment

Participants: Professional groups, college/ university teachers & students

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- DOST Annual Technology Fair in July 2003
  Phil. Trade and Training Center
- DOST Mindanao Cluster
  S & T Fair, Cagayan De Oro City
  October 2003
  - Food Irradiation
  - Sterile Insect Technique
  - Radioimmunoassay and UMMB supplementation in dairy cattle
  - Nuclear- based technique

Visitors: Businessmen/entrepreneurs, researchers, private & government employees, inventors, teachers and students

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- PNRI Visitors Program
  - Around 2,500 visitors availed of the following:
    - Guided tour of PNRI facilities and laboratories
    - Viewing of exhibits
    - Video presentations

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Nuclear Awareness Seminars
  - 2, 150 students and educators from 12 schools/universities participated in 3 -4 hour seminars
  - Topics:
    - Lectures on basic principles of nuclear energy and its applications,
    - Actual products developed though radiation technology
    - Detection of radiation through a dose rate survey meter & the concepts of time, distance and shielding

Concerns: safety & effects of radiation on man and environment

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Nuclear Training
  - Training courses offered to personnel from government agencies and private companies
  - Training in non-destructive testing (NDT)
  - Thesis Advisorship Program for undergraduate university/college students
  - Apprenticeship/On-the job training for students and technologists

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Advocacy Program on Food Irradiation in Mindanao

  To create awareness, interest and acceptance of food irradiation technology in the region

  - Meetings with government officials, food industries, small and medium-scale entrepreneurs, academe and associations
  - Conduct of 6 seminars in 6 regions with around 800 participants
  - Participants: food industries, academe, consumer groups, policy makers, government agencies and the media

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Advocacy Program on Food Irradiation
  - Lecture topics:
    - Fundamentals of food irradiation technology
    - Applications and current trends of food irradiation
  - Graphic display banner on food irradiation; brochures/flyers
  - 8 TV/radio interviews

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Advocacy Program on Food Irradiation (Results)
  - There was a positive response and willingness from the participants to apply the technology
  - There is a general consensus from the 6 regions, that it is high time for Mindanao to put up a commercial irradiation facility in order to increase food production and trade
  - Strong support from the academe, government and private sectors and food sectors was generated from this activity

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Advocacy Program on Food Irradiation (Recommendations)
  - MindaDOST Regional Directors in cooperation with private sectors should spearhead the activity on setting up a commercial facility in Mindanao. Technical assistance could be extended by PNRI
  - Conduct economic feasibility studies on the potential food products to be irradiated in the region
  - Follow-up activities such as workshops, meetings and lectures on food irradiation to sustain interest of different sectors on the technology
  - Strengthen linkages with food industries to ensure successful commercialization of irradiated food commodities in the region

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Advocacy Program on Food Irradiation
  - In 1989, PNRI set up a pilot gamma irradiation facility to demonstrate the applications of radiation processing in the Philippines.
  - PNRI has been extending the use of the irradiation facility for medical products sterilization, food irradiation and research purposes
  - A number of local industries have availed of the gamma irradiation services of the institute

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Mass Media Linkages/Media Relations
  - The public has been kept informed about PNRI activities and services through media releases published in newspapers as well as radio and television interviews of PNRI officials and research specialists.

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Distribution of Information Materials
  - JAIF provided the Philippines with “Energy and the Environment” and “Atoms in Japan”
    - 28 schools - participated in the survey on radiation
    - 30 science teachers - training conducted by PNRI
    - PNRI and other government agencies

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- FNCA Survey on Radiation
  - Target schools - Metro Manila or the National Capital Region (NCR). This is composed of 14 Divisions
  - Two schools (1 private and 1 public) were surveyed for each Division. Hence, a total of 28 schools (14 public and 14 private schools) were surveyed.
  - A total of 1,138 students participated in the survey (564 - male; 574- female)

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- FNCA Survey on Radiation
  - The three top issues the students are interested in are: science and technology, own future, and school life and friends.
  - About 63 % of the students “like science courses”.
  - Over 60% of the students get information on science and technology from the following sources : TV and radio, internet, school teachers and newspapers

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- FNCA Survey on Radiation
  - Nearly 80% of the students have been taught about radiation or radioactivity in the past in school
  - Extent of understanding about radiation is 95.0% (combination of “well enough to explain it” and “somewhat”)
  - Students in the Philippines have high interest (93.8%) in topics involving radiation

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- FNCA Survey on Radiation
  - Nearly 60% of the students have visited scientific institutions
  - A little over 27% have visited a power generation plant
  - About 26 % of the students have visited a university, a research institute or a science and technology exhibition to learn about radiation

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- FNCA Survey on Radiation
  - **Images of radiation**: more than 70% described it as familiar, dangerous and useful
  - **The word radiation brings to mind:** Over 60 % answered nuclear power generation, an X-ray picture, Hiroshima, Nagasaki and nuclear weapons, cancer therapy and exposure

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey: Scientific Knowledge– Items described in textbooks

Q.3-1.The temperature at the center of the Earth is very hot	82.9 %
Q.3-2. Materials that emit radiation are all artificially made	70.7
Q.3-3. Oxygen in the air is mainly produced by photosynthesis in green plants	77.7
Q.3-4. A laser is obtained by concentration of acoustic waves (4th year; placed at the latter chapter of textbooks)	28.8
Q.3-5. An electron is smaller than an atom	68.7
Q.3-6. The factor that determines the sex of a child is the genes of the father (Terms used: XY, XX chromosomes)	26.7
Q.3-7.The major reason for global warming is the release of chlorofluorocarbons	34.2

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey: Knowledge of Radiation - There is no description

Q.8-1. Materials that emit radiation have existed in nature since the creation of the earth (right0	60.7 %
Q.8-2 Intensity of emitted radiation will not change as time passes. (wrong) (Under topic on “half-life”)	68.3
Q8-3 Radiation is also emitted from ordinary food even it is extremely low level (right)	50.4
Q8-4 Direction of radiation beams can be changed by strong winds (wrong)	56.7
Q8.5 Characteristics of natural radiation and artificial radiation are different (wrong)	19.8
Q8.6. The human body always emits radiation, but the radiation emitted is extremely low level only (right)	56.1

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey: Recognition of Applications of Radiation

  - There is no description

Q.9-1 Mutation breeding of rice, wheat, soybean, flower etc.	48.8 %
Q.9-2 Examination of health conditions and function of organs of human beings	83.3
Q9-3 Decomposition and removal of air pollutants from exhaust gases of industry	49.4
Q.9-4 Retardation (delay) of sprouting of potatoes, onions and garlic	40.4
Q.9.5 Cancer therapy	72.8

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey: **Recognition of Applications of Radiation**
  - - There is no description

Q.9- 6. Sterilization of medical supplies like syringes	47.6%
Q.9-7. Baggage inspection at airports	74.6
Q.9-8. Prevention of damage to crops and domestic animals by sterilizing harmful insects	45.7
Q. 9-9. Measurement of thickness of iron plates in iron factories.	30.3
Q.9-10. Nondestructive examination of statues and paintings of cultural value	34.8
Q.9-11. Microanalysis of harmful pollutants in the air	45.0
Q.9-12. Production of heat resistant insulation for electric wires	46.8

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey on Radiation - - There is a description

Visual Question: Radiation Logos	
Q10-1 Which logo is internationally used to indicate that food was treated with radiation ?	44.4
Q.10-i Which logo is the radiation warning symbol that is used internationally in indicating existence of materials that emit radiation ?	64.4
Visual Question: Medical Applications of Radiation	
Q 11-i Diagnostic image taken by putting materials that emit radiation (right answer #1)	29.7
Q11-ii Image by X-ray Computed Tomography (CT) (right answer# 2)	32.4

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey: What High School Students Want to Know About Radiation
  - Amount of radiation exposure - 82.9%
  - Safety measures - 71.7
  - Medical applications - 67.0
  - Radiation facilities - 64.7
  - Emergency preparedness - 61.3
  - Applications in food - 59.6
  - Advanced fields of research - 59.4
  - Applications in industry - 51.8
  - Mutation breeding - 47.0
  - Regulation - 37.3

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Survey: From What Sources Would You Like to Obtain Information on Radiation
  - Internet - 50.9 %
  - Scientific exhibits/fairs - 50.4
  - Television - 43.8
  - Guided tour of facilities - 41.7

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Results of Public Information Activities (Nov. 2002 to October 2003)
  - Generated awareness, understanding and appreciation of the beneficial applications of nuclear technology
  - Nuclear training courses have made teachers more confident to teach topics on nuclear science
  - Advocacy program on food irradiation has generated awareness, interest and support for the technology

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Results of Public Information Activities (Nov. 2002 to October 2003)
  - The FNCA project leaders meeting has kept us updated on public information and other nuclear- related activities in the region
  - The joint survey on radiation has provided us with very useful and interesting information that can be used as basis in enhancing information dissemination programs for students

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Plans: November 2003 Until March 2004
  - 32nd Atomic Energy Week celebration on December 8 – 12, 2003 at PNRI
    - Target groups: students in all science high schools, 4th year high schools students and end-users of nuclear technologies and PNRI nuclear services
  - Update/enhance the PNRI website
  - Plan PI activities for selection of a permanent radioactive waste repository site in the Philippines; prepare communications and information materials
  - Develop/produce additional information materials for the project on fruit fly control thru sterile insect technique

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Plans: November 2003 Until March 2004
  - Promote the multimedia CD on the atom, radiation and radioactivity in schools; updating of the CD to make it more responsive to needs of students and teachers.
  - PNRI would like to apply the joint survey provided by Japan to obtain information on the understanding and interest in radiation of 4th year high school students in all science high school in Metro Manila (or in the Philippines). The conduct of the survey will be coordinated with Department of Education during the first quarter of 2004.

PUBLIC INFORMATION ACTIVITIES ON NUCLEAR ENERGY

- Concerns/issues to address for a sustained and effective implementation of the regional program:
  - Language barrier—which limits exchange of information materials

    We recommend that information materials (in English) specially on the basic concepts about nuclear energy/radiation be shared/ exchanged, such as: **brochures, posters, video, multimedia presentations**

    Materials presented in simple and layman's language will be very useful

Proposed Cooperative Projects in Public Information on Nuclear Energy in the Region

1. Putting up an integrated and portable exhibit package, featuring the status of nuclear energy/ technology utilization in each country in the region, to be circulated (on loan) to member countries (on request) who would like to feature this as part of their local special celebration.

Proposed Cooperative Projects in Public Information on Nuclear Energy in the Region

2. Reemphasizing the need to continue to obtain information on knowledge, understanding and public perceptions on nuclear energy/ technology utilization through surveys, so as to optimize and focus our information activities on areas that need to be strengthened.

Proposed Cooperative Projects in Public Information on Nuclear Energy in the Region

3. Creating unified strategies in addressing the question of Communicating Emergency Preparedness to the public, especially in conveying information to media during radiological incidents/accidents.

Proposed Cooperative Projects in Public Information on Nuclear Energy in the Region

4. An exchange program between countries for personnel involved in public information be established.

This is to allow PI personnel to gain insights into the skills of planning, administering and conducting PI activities which could be learned better through actual participation/ experience.

THANK YOU
FOR YOUR ATTENTION