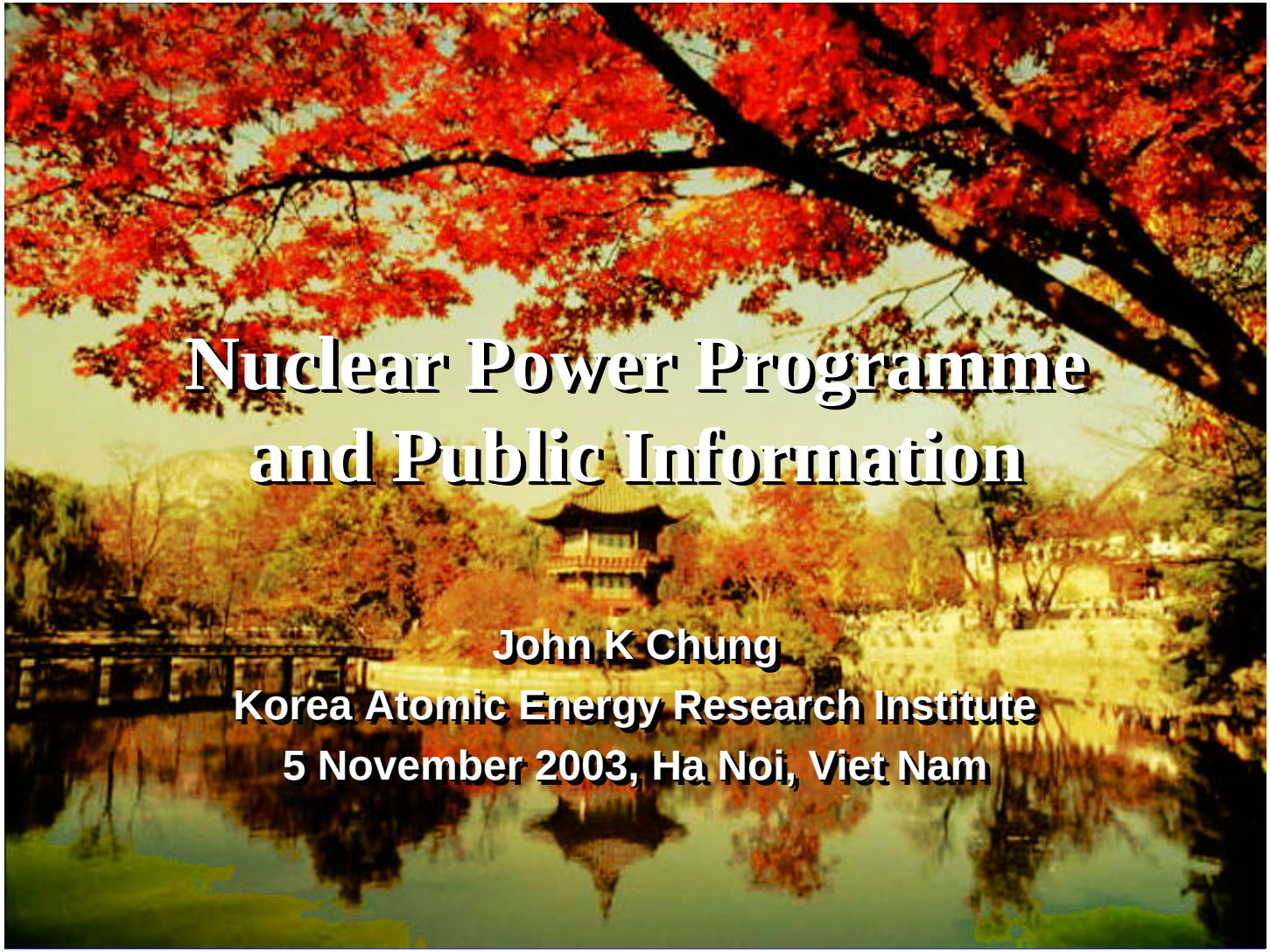
Nuclear Power Programme
and Public Information
John K Chung
Korea Atomic Energy Research Institute
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To begin with,

- When you steal something from other paper, you will be called a PIRATE.
- When you steal many from other papers, you will be called a RESEARCHER.

Public Information

After all efforts,
it is felt that public nuclear information
is
useless and not necessary.
But, it is still useful and necessary.

Chisholm's Law

- There must be somebody who opposes what everybody else fully support.
- There must be somebody who does not understand what everybody else fully understand.

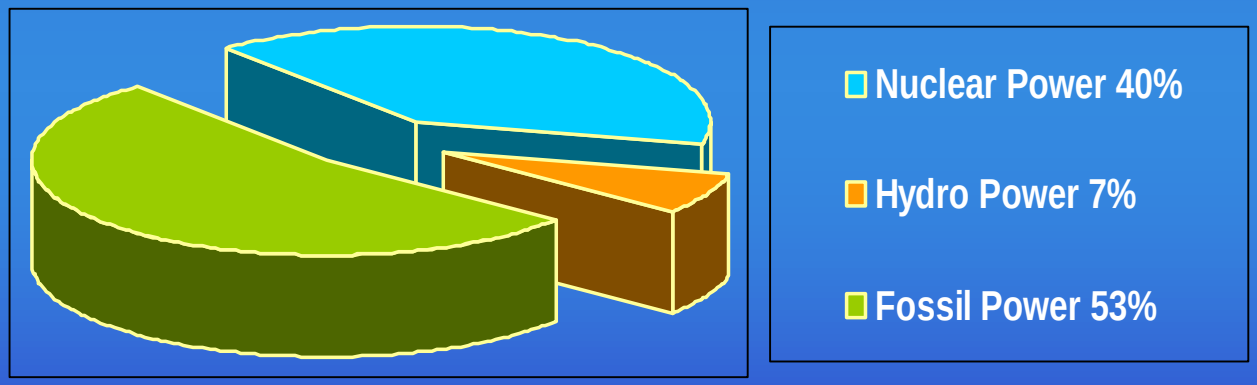
Korea's Nuclear Power Programme

- 18 units in operation
- 4 units under construction
- 10 additional units planned by 2015

- First unit operation in 1978 (Const. from 1972)
- Among 18 units in operation,
  14 PWRs and 4 PHWRs (CANDU)

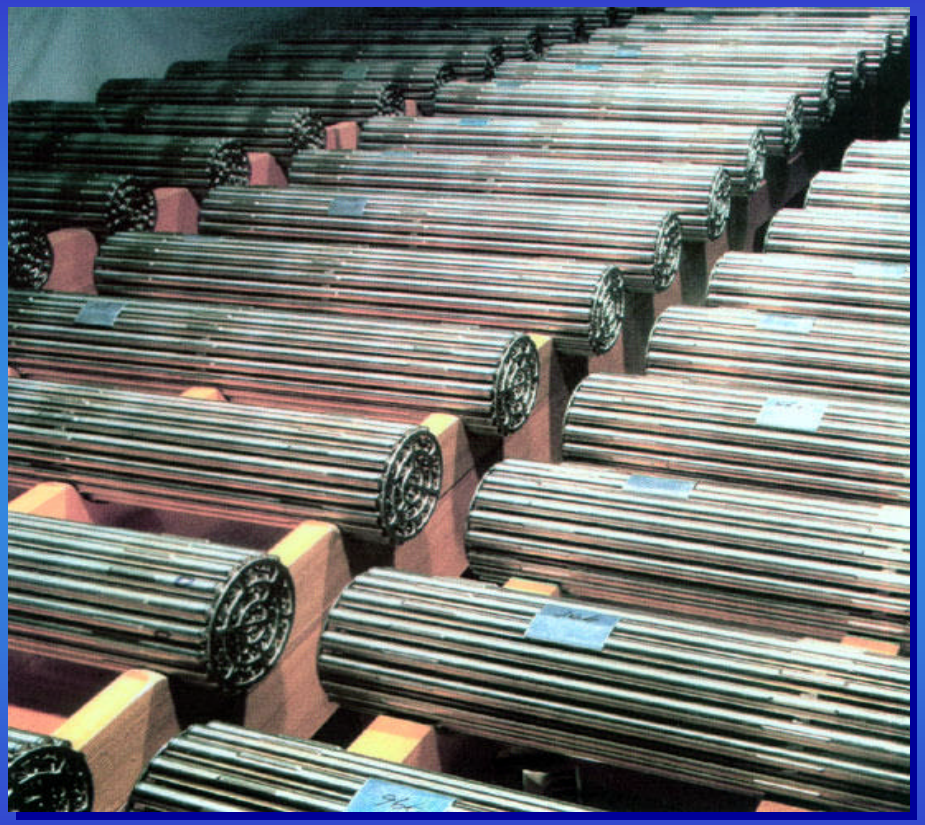
YGN Nuclear Power Station (6 units in operation)

Share of Nuclear Power



Korea's NPP Capability

- Self-designing of Nuclear Power Plant
  - **- KSNP (1000 Mwe) – APR (1400 Mwe)**
  - **- SMART (330 Mwt) for dual purposes**
- Local manufacturing of nuclear fuels
  - **- PWR and PHWR**
- Local manufacturing of nuclear-grade components
- Local maintenance of nuclear power plant



Locally Manufactured PHWR Fuels

Contributions by Nuclear Power

- Provide National Pride
- Improve Peoples' Living Standards
- Contribute to National Economic Development
- Provide Spin-off Technologies
- Create Job Opportunity
- Support NPP Neighboring Communities to make most developed villages
- Environmental Protection

Countries that can control ‘Electrons’ are called Advanced countries (G 7 countries)

Countries that can control ‘Nuclei’ are called Big Powers (Great countries)

Improve Living Standards

- Quality of the Life

  - This is what we should give to our children.

- Future Global Crisis
  - **Food, energy and the environment crisis**
  - **Nuclear energy can contribute to solve the crisis**

Contribution by NPP and IMF

- In 1997 during IMF Bailout System,
  Total nuclear power generation was 77 billion Kwh
  - Nuclear Fuel Cost was $ 245 million
  - If generated by LNG, it would cost $ 3.7 billion
  * Therefore, 3.5 billion $ saved.
- **In 1998, two NPPs Commercial Operation with 1.7 million Kw capacity**
  - This has $ 590 million per year saving effect
- **In 2003 with 18 NPPs in Operation,**
  - This has $ 5.3 billion per year saving effect

NPP Spin-off Technologies

- **I&C, Computer science..**
- **Robotics, artificial intelligence..**
- **New materials development (Nuclear-grade component)**
- **QA, QC technology..**

- Fish farm, greenhouse (economic plant, flowering plant, herbal plant, etc.) seawater desalination…using excess heat from NPP

Create Job Opportunity

- NPP Construction (2 units): 4,000 employees

  (Project Management 300; Construction 3,500; Others 200)
- NPP Operation (1 site): 700-1,200 professionals

  (Total 4 sites = 2,800-4,800 professionals)

  - More research staffs, regulatory and licensing staffs, designing engineers, manufacturing technicians, maintenance professionals, etc.)
  - Encourage establishment of new venture companies

Senior Operators at Control Room of Nuclear Power Plant

Community Support Programmes

- Financial support to the villages nearby the NPPs (Villages within 5 km distance from NPPs)
- Based on ‘NPP Neighboring Community Support Law’ in 1989
- Currently, 0.8% from total electricity sales revenue ($ 700 M/yr, from construction until decommissioning)
  - Village income increasing programmes
  - Public works progrmmes
  - Educational programmes
  - Information programmes

Community Support Programmes Make the NPP Neighboring Villages Most Developed.

Students enjoying computers supported under Community Support Programmes.

Most Developing Countries in Asia

Will face international pressure

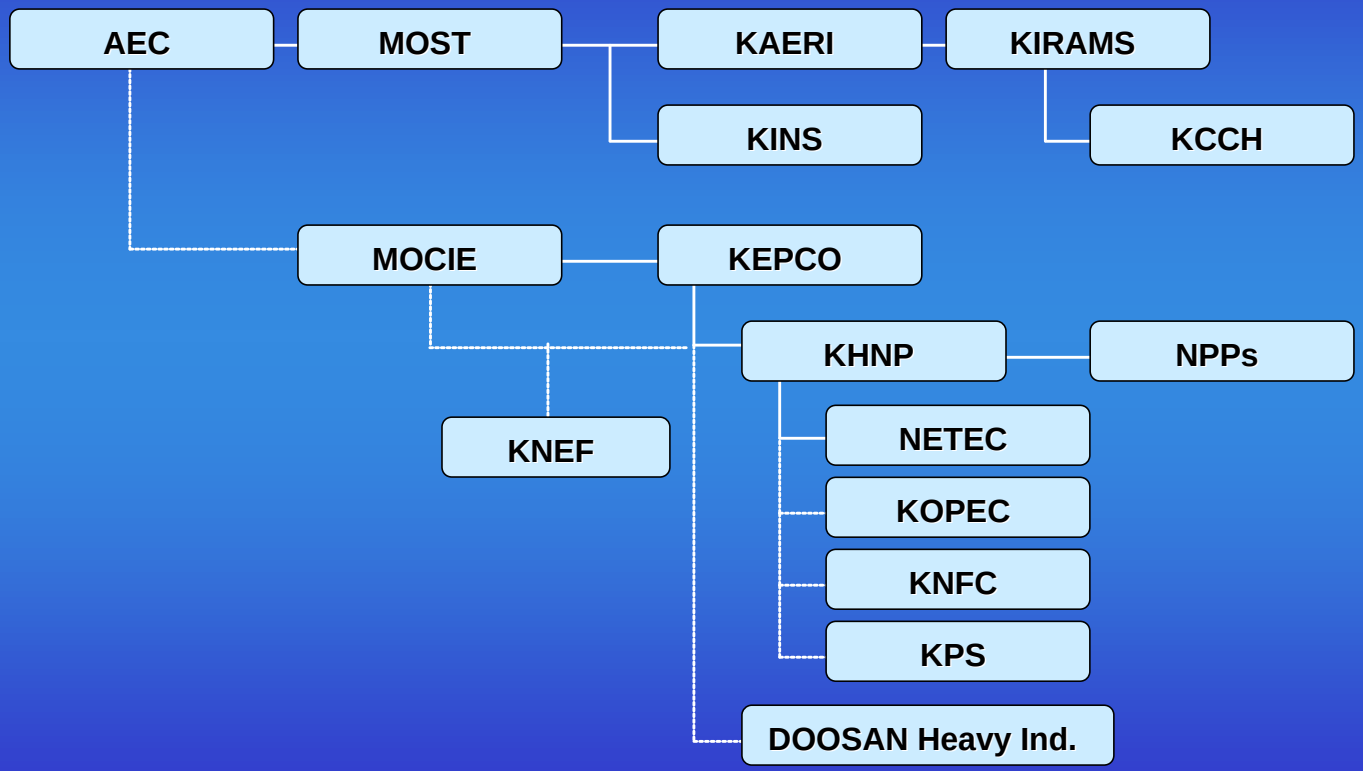
To prevent global climate changes

If they keep using fossil fuels

Which produce Greenhouse Gases

Local manufacturing Nuclear Grade Component

Nuclear Related Organizations in Korea



Korea's
Nuclear Public Information Policy

- Nuclear Programmes 'Together with the Public'
- Priority to the public's 'Right to Know'
- Open and transparency in implementing nuclear programmes
- Encourage participation of the public (Stakeholders) in major decision-making process

KNEF Programmes

- KNEF (Korea Nuclear Energy Foundation) established in 1992
- Five major programmes
  1. Media programmes
  2. Publication programmes
  3. Advertisement programmes
  4. Cyber programmes
  5. Exhibition programmes

Wayside Information Campaign by KNEF

KNHP Programmes

- KHNP (Korea Hydro & Nuclear Power Company) operates 18 nuclear power plants at 4 different sites (Kori, Ulchin, Young-Gwang and Wolsong)
- Each site operates Visitors' Center
- Community Support Programmes as part of public information activities

NPPs are tourist's attraction

Visitor's Center (YGN)

NETEC Programmes

- NETEC (Nuclear Environment Technology Institute) is responsible for the nation's radioactive waste management
- Efforts to select a site for permanent disposal of radioactive waste began from late 1980s, but still pending status (typical failure story)
- Very active oppositions by local community and environmental groups
- Various public information programmes carried out (arrange visits to other countries' radioactive waste management facilities, TV advertisements, etc) – a long way to go.

Women are Good Communicators

- WIN-Korea established in 2001
- WIIN (Women Interested In Nuclear) established in 1995
- Their activities and existence are strong back-up forces.

WIN-Global Meeting earned Societal Interest (2002. Seoul).

WIIN members at wayside information campaign

Demonstration by
Mob psychology

Oppositions at Buan County against Radwaste Site Selection

Destroy and fear are opposition tactics?

Oppositions are generally very aggressive.

Militant Demonstration

Some religious leaders join in the opposition.

Arguments by Opposition Groups

- Traditional arguments (no more effective, but still useful)
- Relative new but effective arguments
- New and effective arguments
- Non-scientific arguments (Socio-political issues)

Traditional arguments

- Radiation and health effect
  - Receiving even small amount of radiation can cause cancer
- Use of renewable energy resources
  - Solar, wind, tidal…are clean energy resources

Relatively new but effective arguments

- TMI and Chernobyl accident
  - Full scope safety cannot guarantee
  - There's no inherently safe reactors
- No final solution for managing radwaste
  - Toxic elements in the radwaste can function million years
  - Even 1 gram of Pu can be fatal for several thousand people
- Environmental concerns (discharged water problem from NPP)

New and effective arguments

- Nuclear power is no more economic

  - Better shut down than operation

  - Decommissioning and radwaste management costs are another financial burden

- Nuclear power's contribution to the environment is negligible

  - No contribution to minimize the global warming

- Security is another problem

  - Nuclear terrorism, illegal trafficking, nuclear liability…

Non-scientific arguments but effective

- Huge construction cost: Potential political bribery source (particularly in developing countries)
- Multi-national business: Potential foreign big powers' influence to local industry
- Neo-materialism, neo-industrialism, New Age…

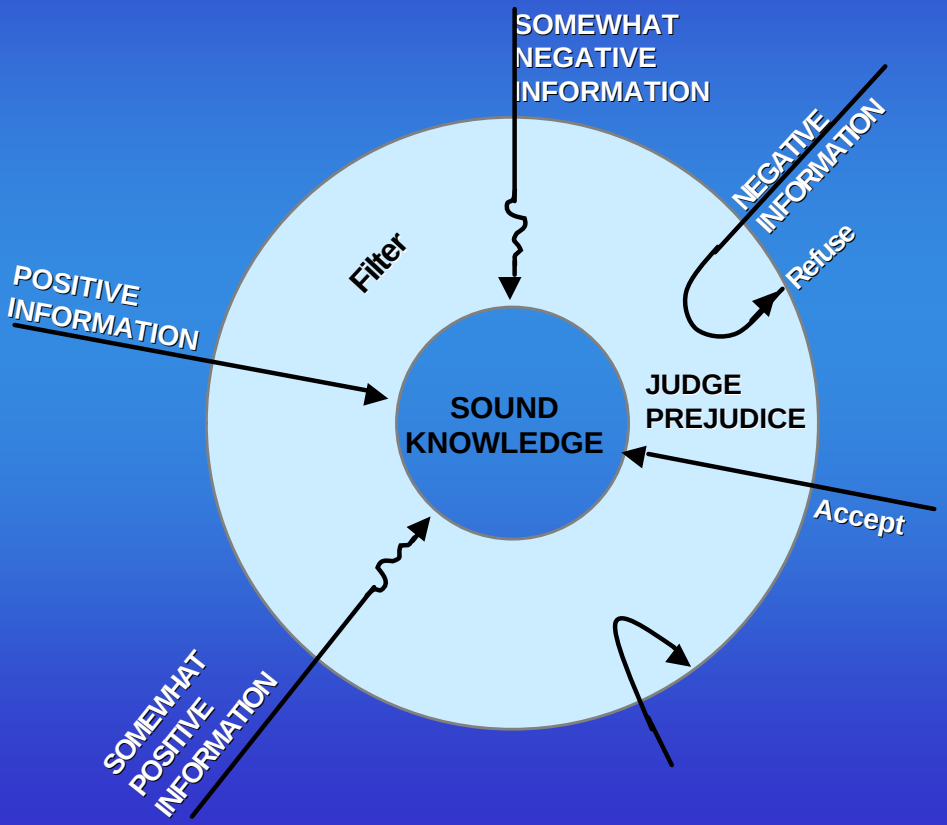
Messages by Anti-nuclear Groups

- In addition to these arguments,
  - messages focused on ‘Basic Human Requirements’ (survival right, fear, biological requirements, etc.)
  - Direct insult and militant demonstration
  - Create groundless rumors (deformed baby birth..)
  - Attack nuclear industry and the government with moral and ethical issues

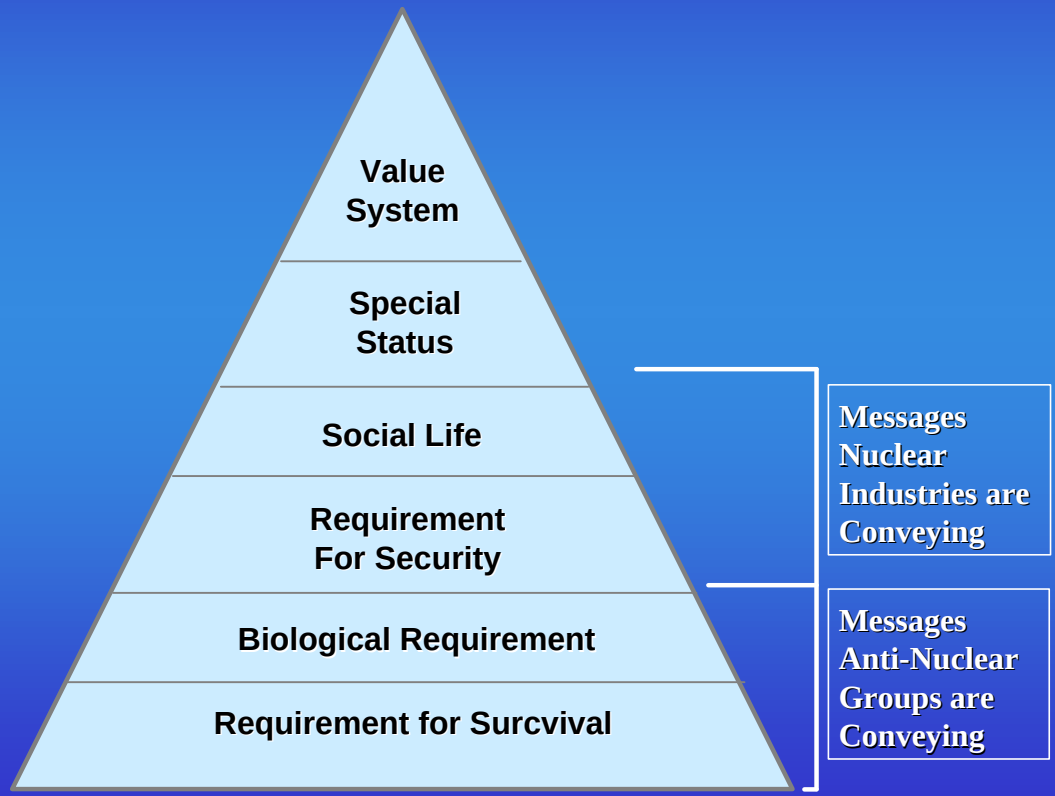
Messages by Nuclear Community

- Increased energy consumption and limited energy resources
- Global warming and role of nuclear power
- Economically competitive nuclear power generation
- Redundant safety measures
- Safe management of radioactive waste
- Non-proliferation
- Development of next generation reactors
- Radiation in our everyday lives, etc.

ACCEPTANCE/REFUSAL OF INFORMATION



HUMAN REQUIREMENTS AND MESSAGES
(Masslow's Pyramid)



Lessons Learned

- Lost trust (unstable political and social situation helped loss of trust of nuclear industry)
- Not proper information strategies (underestimated critics)
- Not smart when handling mistakes (as if hiding something behind)
- Increased environmental concerns (influence by imported anti-nuclear activities)
- Overly bureaucratic government's administration (esp. regarding regulatory and licensing works)
- Prevailed NIMBY symptoms and community egoistic syndrome

$$E=Trust^2$$

Some Tips for Initiating Public Information Programmes

- To start with a Task Force Team to develop policy and strategies
- To recruit public information professionals

  [Socio-political experts]
- To have management's commitment

  [Manpower and budget and moral support]
- To develop counter-measures to the anti-arguments
- To make third party alleys
- To strengthen regional co-operation

Thank you !