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Radioactive Waste Management in Korea and Public Acceptance

Panel Session “Public Information and Outreach”

Theme III - Case Studies of Effective Communication

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LLW and Spent Fuel Status in Korea

Radwaste Management Activities in Korea

- Disposal of LLW
- Independent Interim-Storage of Spent Fuels (No HLW)

As of Dec. 2003
(200-Liter Drums)

Plant Sites	Capacity	Amount	Saturation by
Kori (4 units)	50,200	32,150	2014
Younggwang (6 units)	23,300	12,014	2011
Uljin (4 units)	17,400	13,298	2008
Wolsung (4 units)	9,000	4,101	2009
Total (Power Plants)	99,900	61,563	2008-2014
RI Wastes	9,277	4,945	2010
Spent Fuels	9,803 tons	6,588 tons	2006-2008

Radioactive Waste Management Activities in Korea

Under KAERI/MOST:

- ❖ 1st Phase ('86-'89): Youngduk, Youngil, Uljin
- ❖ 2nd Phase ('90-'91): Ahnmyundo
- ⌘ 3rd Phase ('91-'93): Kosung, Yangyang, Uljin, Youngil, etc.
- ⌘ 4th Phase ('93-'94): Yangsan, Uljin
- ❖ 5th Phase ('94-'95): Goolupdo

Under KEPCO/MOCIE:

- ❖ 6th Phase ('00- present)
 - In '03. 2: Youngduk, Uljin, Younggwang, Kochang
 - In '03. 7: Weedo Island
 - In '04. 2: Open Bids Solicited (Dead Line: '04. 11)

1st Phase Site Selection Attempt (1986-1989)



- **3 Candidate Sites Proposed Following A Comprehensive Site Selection Study ('86~'87).**
 - ❖ **Strong Protests of Local Residents Encountered During Geological Surveys.**
 - ❖ **All Activities Forced to Stop ('89. 5).**
 - ❖ **Local Governments' Declaration against the Project Followed.**
 - ❖ **Central Government' Declaration against the Project Also Followed Due to Presidential Interim Evaluation.**

- **Lack of Transparency in Public Information**
- **Lack of Coordination Among Interest Parties**

2nd Phase Site Selection Attempt (1990-1991)

- **Ahnmyundo Proceeded As 2nd KAERI Site with Local Provincial Government.**
 - ❖ **A Comprehensive Development Scheme of Ahnmyundo Laid Out.**
 - ❖ **During Negotiation Process, the Scheme Prematurely Disclosed by Media.**
 - ❖ **Large-Scale Riot of Local Residents Occurred ('90. 11).**
 - ❖ **Anti-Nuke and Interveners' Group Involved Systematically.**
 - ❖ **Scheme Approved in '90. 9 by AEC Withdrawn by AEC in '91. 6.**

- **First Trial Proceeded with Close Collaboration with Local Provincial Government**
- **Strong Residents' Opposition Due to Lack of Transparency in DM Process**
- **Spread of Negative Aspects of Radwaste Disposal by Media and Anti-Nukes**

Ahnmyundo in 1990: Burning Ceremony of Pro-Nuke Dummies at the Stake



3rd Phase Site Selection Attempt (1991-1993)

- **Sites Evaluated and Proposed by a Third Party**
 - ❖ **A Site Selection Study Led by “Institute of Social Studies at SNU” with 4 Other Local University Social Science Institutes (Approached in Social Scientific Aspects).**
 - ❖ **In All Six Site Locations, Organized Anti- Nuke Protests Against the Study.**
 - ❖ **Results of Study Never Been Explained in Local Resident Gatherings Due to Systematic Hindrances.**
 - ❖ **Eventual Failure of Public Outreach and Site Selection**

- **Social Scientific Approach Suggested**
- **Need for Radwaste Management Slowly Recognized by General Public**
- **Anti-Nuke Interveners’ Group Firmly Organized**
- **Radwaste Management Become a Major Political Issue**

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Trial of Study Presentation (Never Flown Due to Systematic Hindrance), 1991



4th Phase Site Selection Attempt (1993-1994)



➤ **“Law of Compensation” Enacted:**

- ❖ Support of Its Regional Community for Compensation ('94).
- ❖ Solicitation and Encouragement of Local Application and Participation.
- ❖ 56% of Local Residents of Uljin Supported the Application.
- ❖ Violent Riot (Seizure and Block of Major Roads) Led by Anti- Nukes.
- ❖ Official Declaration of Withdrawals from 2 Sites ('95. 5).

- **Serious Conflicts Among Residents Appeared; Hostility Built Up Between Proponents and Opponents.**
- **Local Government Activities Paralyzed**
- **Opposition Officially Issued by Local Council.**

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Yangsan, Burning Ceremony of Pro-Nuke Dummies at the Stake 1994



5th Phase Site Selection Attempt (1994-1995)

- **Goolupdo Site Proposed by A Group of Local Residents ('94. 12).**
 - ❖ **Support Notice Jointly Made by 6 Department Ministers ('94. 12).**
 - ❖ **Under the Office of Prime Minister, A Special “Project Team” Formed to Finalize the Site Selection.**
 - ❖ **Strong Public Outreach Programs Launched by the Team.**
 - ❖ **Some Opposition Activities of Local Residents Supported by Anti-Nukes observed.**
 - ❖ **Active Faults Found ('95. 10) and the Application was Rejected.**

- **Inter-Departmental Cooperation Implemented**
- **Site Survey Needed Before Site Designation**
- **Reconciliation Activities Even After Rejection of the Site.**

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5th Site Selection Attempt (1994-1995): Goolupdo



6th Phase Site Selection Attempt (2000-)

- Trial Under the Responsibility MOCIE/KEPCO.
- Proceeded Based Upon “**Law of Solicitation,**” along with “**Law of Compensation.**”
- Period: '00. 7 – '01. 6
 - ❖ Area: 60,000 Pyung Coastal Areas (1 pyung = 3.954 sq. yds.).
 - ❖ Candidate Applicants: 46 Local Governments (County and Province Level).
 - ❖ Approved by Local Councils.
 - ❖ No Applications and Siting Unsuccessful.

6th Phase Site Selection Attempt (2000-)



- **Period: '02. 12 – '03. 12:**
 - ❖ **Bid Solicitation Jointly Announced by 7 Government Department Ministers ('02. 12).**
 - ❖ **4 Candidate Sites Proposed by Experts ('03. 02).**
 - **East Coast: Namjung (Youngduk), Keumnam (Uljin)**
 - **West Coast: Hongneung (Younggwang), Haeri (Kochang)**
 - ❖ **Site for Proton Accelerator (Favored Facility by Local Residents) Added.**
 - ❖ **Bid by Weedo-Booan ('03. 07) (not included in original 4 candidate sites).**

6th Phase Site Selection Attempt (2000-)



➤ **Period: '04. 02 - Present:**

- ❖ **Additional Open Bids Solicited ('04. 02) with “Law of Consent,”** which requires majority residents' consent prior to final decision.
- ❖ **Bids will be closed in '04. 11.**

6th Site Selection Attempt (2000-): Weedo



Summary of Recent Opposition Activities at Boon County

Instigation of Local Residents

- Imposition of fines to the persons who do not participate in the opposition demonstration.
- Pressure to sign against the solicitation project via house-to-house visits.

Attack on Reliability of Governments' Moral Principles

- Insistence of buying local residents' agreement votes.
- Closed-door administration and manipulation of facts.

Using Political Power Squeeze,

- Inducement of Resignation of Local Government Employees
- Forces local leaders to be in frontline to oppose the project.

Mobilization of Olds, House-Wives and Youths against the Project

- Blocking school Attendance.
- Assaulting teachers in front of their students.

Other Illegal Activities Against Proponents:

- Stickers attached on houses.
- No allowance of commercial activities.
- Vandalism with red paint.
- Intimidation using phone calls and mails.
- House intrusion, destruction house-holds and harassment .
- Burning ceremony of figureheads at the stake

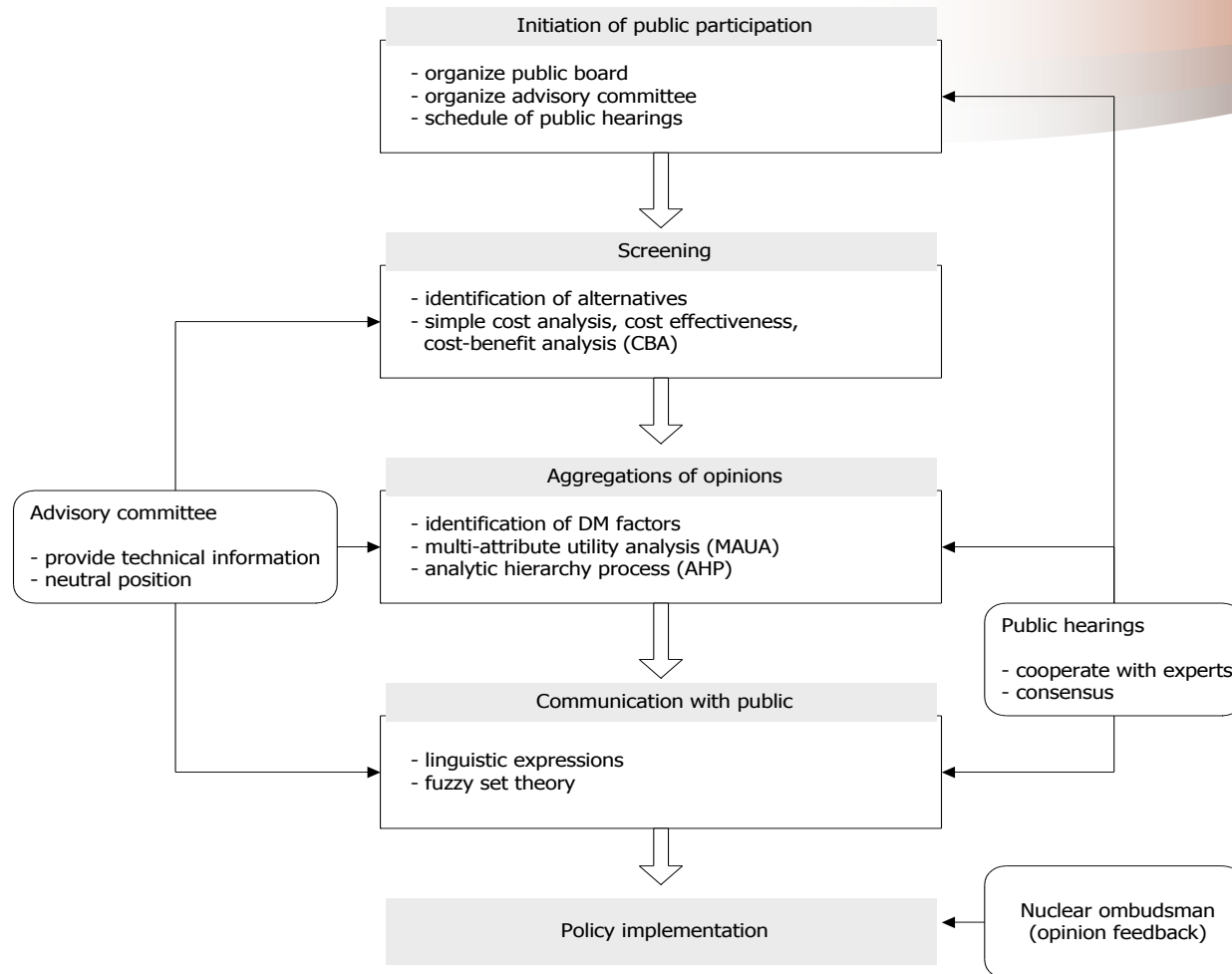
Illegal Poll Conduction of Local Residents by Anti-Nukes (Feb. 14, 2004):

- 91.8% Opposed (Danger of Unprepared Local Poll)

Importance of Public Acceptance

- No good decision based upon efficiency alone, but heavy dependence on public acceptance of outcome.
 - Decisions usually made by experts using Cost-Benefit Analysis, and the public persuaded or convinced afterwards via
 - ❖ explaining
 - ❖ educating and
 - ❖ publicizing.
 - Strong public negative positions drawn due to one-way communication, even with “**Laws of Compensation, Solicitation and Consent**”, and public’s distrust on decision makers mounting.
- To regain public trust, public opinions assimilated during DM process rather than after with proper communication skills.

Structure of Public Participation



Conclusion

- **Comprehensive Communication Skills with Public**
 - **Two-way information should be given even early before planning.**
 - **Transparency in public information should be assured.**
 - **Common understanding should be created for all discussions.**
 - **Fair consultation and participation should be assured.**

- **Future Efforts on:**
 - **Public hearing system**
 - **Nuclear ombudsman**