NTS ALERT

June 02/09 Issue

CONSORTIUM OF NON-TRADITIONAL SECURITY STUDIES

A FORTNIGHTLY BULLETIN OF CURRENT NTS ISSUES CONFRONTING ASIA

Compiled, Published and Distributed by

NTS-ASIA Secretariat,
Centre for NTS-Studies,
S. Rajaratnam School of International Studies,
Nanyang Technological University

NUCLEAR-PUBLIC RELATIONS MANAGEMENT IN SOUTHEAST ASIA:

Abstract: *Due to the pragmatic need for ensuring energy security, governments of the Association of Southeast Asian Nations (ASEAN) have to date emphasised the potential economic and technological benefits of nuclear energy, but have paid less attention to the groundswell of public opinion. This edition's NTS Alert, as a follow-up to the previous update on nuclear energy developments in Southeast Asia, shall explore the prospects of nuclear-public relations (NPR) management, suggesting the need for a more holistic and balanced strategy of disseminating public information on nuclear energy at both national and regional levels.*

CONTENTS

NTS Alert Team

Mely Caballero-Anthony and Collin Koh.

Please click here to visit our websites

(1) Consortium of NTS Studies in Asia
(2) Centre for NTS Studies

Contact us at NTS_Centre@ntu.edu.sg

Nuclear-Public Relations (NPR): Underrated in Southeast Asia?

As highlighted in the previous edition of the NTS Alert, it is evident that nuclear energy development in Southeast Asia is a response to anticipated depletion of energy resources over the long run, and the lack of better alternatives since research and development (R&D) of renewable energy, such as solar power and biofuels, carry uncertain outcomes. Energy security in Southeast Asia appears to emphasise securing access to adequate and affordable energy supplies. To be sure, socio-economic development has always been the bedrock of political legitimacy in Southeast Asia. Sustained economic growth, however, would mean that securing reasonably-priced and sufficient amounts of energy supplies is first and foremost the priority.

As such, in the face of rising energy demands, depleting fossil fuels, volatile oil prices and expensive endeavours in renewable energy R&D, nuclear energy development becomes highly appealing for Southeast Asia. Support among ASEAN countries is not lacking, at least at the level of the political elites. However, in the quest for energy security, which is explicably linked to reasons of ensuring national security, governments in Southeast Asia have in the past paid more attention to political-economic incentives than to the groundswell of public opinion. This is evident in significant domestic opposition to nuclear energy within Indonesia and the Philippines.

This issue of the Alert will not deal with issues such as nuclear proliferation and environmental issues over radioactive waste management, which have always formed the backbone of critical discourse to nuclear energy development.

© Greenpeace

Rather, we will explore how ASEAN authorities handle NPR issues and the prospects of raising public acceptance of nuclear power in the region.

Drivers of the Nuclear-Public Nexus

Public acceptance is crucial if nuclear energy programmes are to be successful. With this in mind, this section aims to furnish a brief background of key issues discussed in contemporary NPR literature. In fact, there is a significant field of study dealing with NPR issues, which would become increasingly salient as ASEAN begins to look seriously at the use of nuclear energy in the near future.

As Ferenc L. Toth of the International Energy Agency had pointed out during a workshop on public acceptance of nuclear power in 2008, human responses to any technology are driven by the perception of risks involved. In general, experts on NPR issues have postulated a range of factors that shape public acceptance of nuclear energy. This includes, for instance, dread and unknown risk factors, lifestyles and worldviews, public-government relationships, institutional efforts in education and safeguarding of livelihoods, as well as public participation in the nuclear decision-making processes. In general, however, the major recurrences which appear in contemporary NPR studies revolve around education, media and institutional factors, as well as divergence among multiple stakeholders.

Education

As education levels increase, perceived risks decrease while perceived benefits increase. This proposition was supported by the research findings of Choi et al., utilising two nationwide public surveys conducted in South Korea by the Korea Survey Gallup Polls Ltd, which were sponsored by the Korea Institute of Nuclear Safety and Organization for Korea Atomic Energy Awareness in August and November 1995 respectively. Each survey randomly sampled no less than 1,500 participants. It was found that a person receiving college education was 1.22 times (at the national level) and 1.20 times (at the local level) more likely to accept nuclear energy than a person with only a middle-school education.

Media

The social atmosphere, shaped by news media information, serves as a channel through which the public gives recognition to an event. Thus, public acceptance depends on the type and amount of information released by the news media to society. With greater access to accurate

information on the benefits and safety of nuclear power, there would be higher levels of public acceptance of nuclear energy. The extent of publicity given by the media constitutes an important parameter which determines the citizens' reactions to emergency situations, such as a nuclear accident. Since the mass media often report bad news, those with information via those channels tend to have worse risk perceptions than those who do not.

Institutions

Scholars such as Alevritou-Goulielmou pointed out that public attitudes are greatly affected by the authorities' level of organisation, their readiness to cope with problems, and handle the short- and long-term effects. Institutional actors would comprise not just the government but also industrial players. As far as the latter group is concerned, there is always a desire to project a benign image of nuclear power in comparison to other forms of energy.

However, failure by industrial players to instil public confidence could put a dent on nuclear programmes. For instance, the 1996 sodium leak accident at Monju, a prototype fast-breed reactor operated by Japanese utility PNC, created public distrust due to the firm's failure to provide adequate nuclear safety information to the public.

NPR essentially revolves around the following stakeholders: The public, industrial players, governments, and the media. In countries with a strong civil societal presence, these groups could play an important role in nuclear policymaking as well. However, the divergence among them could shape national, and even regional, nuclear agendas.

Experts-public divergence

Nuclear experts evaluate nuclear safety through scientific methodologies, whereas the public usually makes assumptions on nuclear safety based on intuitive risk judgments, in large part shaped by the media. However, since the general public typically have insufficient knowledge, there is a tendency to conflate all sorts of nuclear-related accidents altogether without distinguishing between minor, non-threatening incidents and major ones which could be disastrous. This could be the reason why the public tends to worry more about nuclear risks rather than many other kinds such as deaths induced by automobile accidents. Public risk perceptions were often observed to diverge from objective risk estimates based on experts' risk analysis.

Government-public divergence

Governments typically adopt cost-benefit analysis, a method ill-suited for multi-stakeholder decisions and thus unable to reflect different perspectives, since perceptions vary among different stakeholders. When such a technique is employed in the nuclear decision-making process, public opinion is often ignored or only partially considered. For some governments,

public participation was treated distinctly from the nuclear decision-making process. Instead, most government efforts are found to be directed towards advertisements and education in an attempt to alter public attitudes and beliefs. It is also important to note that confrontation between the public and policymakers could increase public distrust, thus leading to less public acceptance of nuclear power.

NPR in Southeast Asia: Ambiguity and Uncertainty

The issue of NPR would be looked into with respect to the four main nuclear aspirants of Southeast Asia, namely Indonesia, the Philippines, Thailand and Vietnam. These countries are members of the Forum for Nuclear Cooperation in Asia (FNCA), a formal multilateral organisation which promotes the peaceful use of atomic energy in Asia. Most work with regard to NPR was extensively covered under the FNCA regional project on public information.

"...70 per cent of the students surveyed in Indonesia, the Philippines and Thailand were taught about radiation and radioactivity in school, versus only 18 per cent for Vietnam...Japan scored only 52 per cent in this area. This showed that at least basic formal education in nuclear and radiation knowledge has been largely institutionalised in most if not all ASEAN countries, thus providing a foundation for long-term public awareness of nuclear energy."

A notable FNCA study was done in 2002-2003 and involved a cross-national opinion survey of high-school of students in seven FNCA member countries, including the four major nuclear aspirants.

According to the survey results, 70 per cent of the students surveyed in Indonesia, the Philippines and Thailand were taught about radiation and radioactivity in school, versus only 18 per cent for Vietnam.

Most surprisingly, despite being the largest nuclear energy-producing country in Asia, Japan scored only 52 per cent in this area. This showed that at least basic formal education in nuclear and radiation knowledge has been largely institutionalised in most if not all ASEAN countries, thus providing a foundation for long-term public awareness of nuclear energy.

In the same survey, the majority of respondents viewed radiation as 'controllable': 75 per cent in Vietnam, 58 per cent in Thailand and 51.8 per cent in Indonesia. This is a notable result since it has been long posited in behavioural science that such affective images are quite influential in terms of preferential behaviour and decision-making.

Overall, the survey results reflect optimism on the part of most ASEAN members of the FNCA, thus serving as a basis for improving NPR strategies and educative materials for students and educators.

While this might postulate long term optimism for public acceptance of nuclear energy, the reality in the short term appears ambivalent at best, pessimistic at worst.

Indonesia

The Indonesian nuclear programme has been beset by the lack of central government commitment and for the most part, lack of transparency in the nuclear decision-making process. It has turned out that groundswell public opposition against the nuclear programme has not been merely restricted to Central Java, where the plans to build the Muria-series nuclear power plants (NPPs) had gained widespread public prominence in the archipelagic state.

Indeed, the Indonesian national nuclear programme is much broader than publicised, and includes other sub-components such as a nuclear desalination plant in Madura, where public discontent has been rife.

Media blitz by Jakarta

To ease public opposition, BATAN – the national nuclear agency tasked to conduct NPR in Indonesia – had attempted to reach out to the public through the mass media.

One such notable instance had been the scheduling of interactive live television and radio broadcasts which could be interrupted by phone calls from members of the public seeking answers to issues related to nuclear energy. BATAN claimed that this strategy has been proven effective for public information dissemination, and it has since been designated as a regular programme every year.

In addition, BATAN also embarked on a NPR blitz with the dissemination of information on proven nuclear technology application activities jointly conducted among various institutes, local governments, private companies and non-governmental organisations (NGOs) in various provinces over the years, in an attempt to raise public awareness of the benefits of nuclear energy.

According to BATAN, dissemination of information regarding the application of nuclear technology in health and agriculture has also helped to diminish gradually the negative image – brought about by past events such as those in Chernobyl and Three Mile Island – of nuclear power.

Inability to mask negative public perceptions

BATAN also purported that the majority of the Indonesian people are lowly-educated thus making them easily manipulated by NGOs with narrow agendas, claiming that more people had begun to feel the need for nuclear energy in their everyday lives as a result of frequent electrical blackouts. Such sentiments, according to BATAN, readily support NPR activities, making it easier to convince the public of the necessity of nuclear power.

However, certain plans, such as the intention to site the Muria NPPs in a seismically active region, provoked public suspicions about the extent of transparency in the national nuclear decision-making process. The recent decision to temporarily shelve the Muria NPP project for reasons of political expediency in view of the upcoming presidential election did nothing to alleviate public concerns.

The anti-nuclear civil movement even caused the government to refrain from revealing the site to be used as a location for future NPPs, thus adding to the opaqueness of the nuclear programme.

Repeated government flip-flops and the perceived cover-ups of various key aspects of the nuclear programme, most importantly the decision made on NPP sites, continued to plague NPR efforts.

Jakarta's attempts to raise public acceptance of nuclear energy had become superficial at best, largely overshadowed by negative perceptions among an increasingly better-informed public utilising the information disseminated by anti-nuclear NGOs.

The Philippines

Even though there are no operational NPPs yet in the Philippines, a little over 80 per cent of the high school students surveyed in the 2002-2003 FNCA study are familiar with nuclear power, due to extensive media and school textbook coverage of the Bataan NPP (BNPP).

The survey showed that nearly 80 per cent have been given formal education on nuclear energy and radiation. These optimistic results, however, could not mask the uneasy situation with respect to public sentiments towards Manila's nuclear plans.

Manila's outreach strategies

The Philippine Nuclear Research Institute (PNRI) essentially spearheaded national efforts to raise public acceptance of nuclear energy, with strategies emphasising:

- Conduct of nuclear awareness seminars;
- Guided tours of PNRI facilities;
- Mass media linkages/media relations;
- Participation in national science & technology events such as exhibitions/fairs;
- Nuclear information promotion and education via print and non-print materials; and
- Linkages with local and international institutions such as FNCA.

From November 2002 to October 2003 for instance, nuclear awareness seminars and advocacy programmes on food irradiation, as well as tours of PNRI facilities were conducted. Information disseminated pertained largely to basic concepts about nuclear energy and radiation, as well as beneficial applications of nuclear technology in various fields. The public was kept informed about PNRI activities and services through mass media releases published in newspapers, as well as radio and television interviews of PNRI officials and research specialists.

More efforts needed?

According to Rhodora R. Leonin of the PNRI, the negative image projected in the past by the BNPP, as well as the Three Mile Island and Chernobyl accidents, had fostered negative public perceptions towards nuclear energy. She claimed in 2005 that this situation was also attributed to lack of public knowledge about nuclear energy and radiation, noting that the majority of the public has not fully appreciated the beneficial aspects of nuclear technology in the Philippines. However, Leonin also claimed that the PNRI strategies to disseminate public information had 'helped improve the knowledge of thousands of Filipinos on nuclear energy'.

The current situation does not appear as rosy. Anti-nuclear movements, spearheaded by NGOs and supported by the general public, have appeared to beset plans to revive the BNPP and continued to fuel the intensive public nuclear debate. This has not been helped by the fact that the BNPP had already been portrayed negatively by past scandals dating back to the Marcos era, while Manila continues to suffer from bureaucratic malpractices, in particular corruption, which have cast further doubts on Manila's way of managing the issue.

Thailand

The spotlight has been focused on Thailand's nuclear programme, which is judged alongside Vietnam's to be the most advanced in Southeast Asia. A notable facet of Thailand's nuclear programme is the existence

of an elaborate, phased action plan. This involves dissemination of public information to enhance public knowledge and understanding of nuclear energy, and to facilitate public participation in the period 2008-2010. However, this could not help mask the fact that Bangkok has not been as transparent as it seemed to be in its nuclear decision-making process. According to a report by an anti-nuclear NGO in 2008, even though the Thai authorities had informed the public that only a nuclear feasibility study was being done, in reality Bangkok has plans to construct NPPs in 2014. The first of these would be commissioned by 2020.

Greasing the public's cogs for nuclear energy?

While public opposition in Thailand have not been as intense as in Indonesia and the Philippines, the Thai authorities had endeavoured to counter opposition through a mix of strategies. For instance, besides announcing to the mass media that Thai people in some provinces had written letters to the government to express their desire to have NPPs constructed in their provinces, the Thai authorities have also instituted laws to provide funds for the community. The latter move cut no ice with some NGOs, which viewed it as merely an attempt to mute potential community resistance to the NPP project.

"Among the major nuclear aspirants in Southeast Asia, Vietnam stands out for two reasons: The relatively quick pace of its nuclear programme, and the political system in which public information is heavily regulated by the state... national nuclear decision-making process has been the exclusive preserve of the political elites, with minimum public input...even though the official stance was that 'public information activities are a necessary and important part of a long-term national nuclear programme.'"

Perhaps not a rosy situation for Bangkok after all

It would seem that not all would be smooth sailing in the long run for Thailand's nuclear programme if 'real' public opinion was taken into account. In September-October 2007, the Office of Atoms for Peace (OAP) in Thailand, which led the NPR efforts in the country, conducted a public poll on nuclear energy. The results appeared dismal; some 44.14 per cent of those randomly surveyed feared nuclear energy, compared with 12.83 per cent who did not. While 39.59 per cent of the respondents viewed nuclear energy as very important, only 10.69 per cent perceived it as 'most important' for national development. Furthermore, 31.03 per cent wished to know about the advantages and disadvantages of nuclear energy while only 11.86 per cent desired to know about the useful applications of nuclear energy.

Even more telling in this 2007 survey was the fact that 39.81 per cent were uncertain about the need for nuclear energy, due to lack of relevant information and doubts about the competence of the national regulatory authority. Furthermore, most respondents wished to hear the decision of the public majority. Perhaps more notable was the fact that 24.82 per cent viewed nuclear energy as being more disadvantageous compared with only 13.34 per cent who thought otherwise. The OAP acknowledged that public information on nuclear energy should be more intensive, with emphasis on nuclear advantages and disadvantages, safety and security measures, as well as rules and regulations to ensure safe use of nuclear energy.

According to Vidhaya Rajatatibodee, a senior OAP official, the current public acceptance is only satisfactory at certain levels for some target groups with higher education, while many still do not understand and have no confidence in nuclear energy. The cobalt-60 accident in Thailand in 2000 essentially undermined public acceptance of nuclear energy and prompted an intensification of NPR efforts, especially by the OAP. However, according to Rajatatibodee, results remain unsatisfactory. This could spell uncertainty in the long run for Thailand's nuclear ambitions.

Vietnam

Among the major nuclear aspirants in Southeast Asia, Vietnam stands out for two reasons: The relatively quick pace of its nuclear programme, and the political system in which public information is heavily regulated by the state. From the start, the national nuclear decision-making process has been the exclusive preserve of the political elites, with minimum public input. Activities of the Vietnam Atomic Energy Commission (VAEC) are largely concentrated on technical issues and less on public information, even though the official stance was that 'public information activities are a necessary and important part of a long-term national nuclear programme', according to Dang Thi Hong, VAEC representative to the FNCA.

Official claims by Hanoi: Are they credible?

To foster public acceptance, instead of facilitating more room for public input, the VAEC gears its NPR activities towards promoting the benefits of nuclear energy. For instance, it was claimed that an annual international display had attracted 'tens of thousands of visitors'. In addition, the opening of the Da Lat research reactor for public tours was heralded to

promote public understanding of nuclear energy use. According to former VAEC chairman Vuong Huu Tan, this reactor receives about 3,000 visitors every time it is opened to the public. However, Tan claimed back in 2006 that while there had been no scientific study done to survey public attitudes on nuclear power, the questionnaires answered at five national nuclear energy exhibitions had indicated an over 80 per cent support for the nuclear programme.

Hanoi continues to enjoy positive public acceptance of nuclear energt, according to Tran Huu Phat, current chairman of the VAEC. The VAEC purportedly have successfully cooperated with the media, such as Vietnam Television, the Voice of Vietnam and some prestigious national newspapers, according to Dang Thi Hong. In 2005, she had pointed out that mass media personnel were invited to write on nuclear energy-related seminars; about a hundred articles discussing such topics were published in 2004. Hong further claimed that FNCA public information activities on nuclear energy in Vietnam had obtained 'certain results'.

Whether the claims made by the Vietnamese authorities actually reflected real public opinion remains to be seen, since no nationally or externally-sponsored public opinion study has been held in Vietnam to date. The continued lack of transparency in the national nuclear decision-making process might potentially affect the nuclear programme in the long run, especially if plans are disrupted by any unforeseen contingencies.

Towards Better NPR Management for ASEAN

As far as Thailand and Vietnam are concerned, the goal of realising their nuclear ambitions appears within reach, while the situation in Indonesia and the Philippines remains uncertain due to wider and more intense public opposition. For these major ASEAN nuclear aspirants, the following conclusions could be reached with respect to their NPR efforts and prospects:

1) Education. The level of knowledge in nuclear energy among high-school students in the four countries, as indicated in the 2002-2003 FNCA survey, implied that the general population at large would have at least basic knowledge of nuclear energy, even though education in such areas might be rudimentary. However, the infusion of information and communications technology (ICT) in Southeast Asia would mean that education in such nuclear knowledge could be bolstered, albeit informally.

2) Media. The mass media in Indonesia, the Philippines and Thailand are active in disseminating information on nuclear energy, and is increasingly used as a major tool for NGOs to champion their anti-nuclear stances. In the short and long run, with the advent of greater access to ICT, the public would be sensitised to the anti-nuclear movement unless alternative viewpoints from the authorities are made widely available and accessible. In the case of Vietnam, notwithstanding its political system, internet access has been popular among youths, hence potentially making them no less susceptible to any partisan media views on nuclear energy in the future.

3) Institutions. The governments of these four countries continue to keep a tight veil over their respective nuclear decision-making processes. This is not helped by the fact that for some of these countries, institutional malpractices such as corruption had marred progress in their nuclear programmes. The authorities' rigorous moves to promote the benefits of nuclear power could be affected by the lack of transparency of the regulatory and safety measures adopted by the respective governments.

4) Divergence among stakeholders. As evident in all four cases, divergence among the various stakeholders has been prevalent. Even if the authorities are informed by expert risk analyses in their decision-making processes, the same could not be said for public opinions which centre on intuitive perceptions, shaped by sometimes biased media information. The authorities are more concerned about the economic benefits than paying heed to long-term prospects of nuclear development, which could depend a lot on public participation.

A new focus needed

An overemphasis on the potential economic and technological benefits of nuclear energy has largely dominated NPR efforts in the four ASEAN countries, with lesser thought placed on addressing public concerns over the potential drawbacks of nuclear power. Instead of bolstering public confidence, such one-sided perspective in the NPR campaigns could actually become counter-productive by giving the impression to the public of perceived cover-ups, while feeding more ammunition to the anti-nuclear movements.

A more holistic and balanced NPR effort would be necessary given the rising trend of ICT usage in Southeast Asia – the proliferation of diverse sources of information on the popular mass media, which is increasingly harnessed by civil society organisations opposed to nuclear energy. Lacking adequate sources of information from the authorities

on the disadvantages of nuclear energy, members of the general public would increasingly gravitate towards the ICT-dominated mass media to form their own viewpoints in order to make better-informed judgments. They would also risk being exposed to partisan agendas of some anti-nuclear NGOs, neglecting the objective facts about the benefits nuclear energy could bring.

Some recommendations for nuclear policymaking

The following policy recommendations may help to achieve balanced public perceptions of nuclear energy, and thus raise public acceptance of nuclear energy in Southeast Asia.

1) Governance. Institutionalising a two-way, transparent information exchange between the public and authorities with respect to the decision-making process, allowing room for fair consultation and public participation. Greater access to information could promote public trust of the authorities, while ensuring higher degrees of accuracy in media reporting. Regulatory mechanisms influence public perceptions, thus requiring up-to-date and coherent laws to alleviate concerns. In addition, effective communication with the public could be fostered via a comprehensive public opinion survey system overseen by independent, professional polling organisations to ensure the reliability of public feedback.

2) Education. To effectively improve risk perceptions of nuclear power, there is a need to bolster formal education in the areas of nuclear energy and radiation, and starting at elementary levels in order to promote long-term public awareness of the concepts of nuclear energy and safety. There is a need to broaden the media's own knowledge and understanding of basic science and technology concepts related to nuclear and radiation knowledge, so as to enable the dissemination of reliable information to the public. As such, members of the media should be involved in regional nuclear education programmes catered to laypeople.

3) Regional cooperation. Other than institutionalising regional cooperation in areas such as collective radioactive waste management, there could be efforts to promote exchanges of expert-public-government opinions on a regional basis, such as through web-based online forums created for such purposes. An integrated regional effort to disseminate public information on nuclear energy would be helpful, especially in fostering country exchanges for personnel involved in NPR programmes.

Final Thoughts

In recent years, public acceptance was often considered the single most important issue that had to be resolved in the nuclear energy decision-making process. Many such decisions, based upon robust technologies and economic incentives alone, have failed to be implemented. Whether the same state of affairs would materialise in Southeast Asia in the foreseeable future remains yet to be seen. Trends in ICT development, the emergence of civil society groups working on nuclear energy issues, as well as the current reluctance of the authorities to expand public participation, all appear to negatively affect regional nuclear programmes in the long run.

This situation could only be averted if regional governments pay greater heed to the socio-psychological dimensions rather than just the economic and technological aspects. A balanced and more holistic information dissemination strategy based on proper governance, especially in areas of transparency, education at both national and regional levels could be helpful. As far as ASEAN is concerned, in the wider scheme of things, broadening public participation in the nuclear decision-making process could also facilitate ASEAN's drive to gradually become a people-centric, as opposed to commonly perceived 'elitist', regional organization.

Southeast Asia is a new player in the nuclear energy arena. This means learning valuable lessons from abroad, such as Japan, especially in the area of promoting public awareness. For nuclear power to be a sophisticated, innovative and environmentally sound energy source in the 21st century, public misperceptions should be corrected via proper governance, education and greater transnational cooperation.

References

Abraham, Dian, 'The Battle Towards Indonesian First Commercial Nuclear Reactor', No Nukes Asia Forum (NNAF) Kashiwazaki City (Niigata Prefecture) and Tokyo, Japan, 28 June – 1 July 2008. Available at http://www18.ocn.ne.jp/~nnaf/2008Indonesia.htm

Alevritou-Goulielmou, H., 'Nuclear accidents, consumers' perspectives and demands', *Journal of Environmental Radioactivity* 83, 2005, pp. 433-35.

Ardisasmita, M. S., 'Preservation and Enhancement of Nuclear Knowledge Toward Indonesia's Plan to Operate First Nuclear Power Plant by 2016', International Conference on Nuclear Knowledge Management, Document IAEA-I1-CN-123, Saclay,

France, 7-10 September 2004. Available at http://www.iaea.org/km/cnkm/abstracts/ardisasmitaindonesia.pdf.

Bredimas, Alexandre and William J. Nuttall, 'An international comparison of regulatory organizations and licensing procedures for new nuclear power plants', *Energy Policy* 36, 2008, pp. 1334-54.

Choi Young-Sung, Kim Jong-Seok and Lee Byung-Wook, 'Public's perception and judgment on nuclear power', *Annals of Nuclear Energy* 27, 2000, pp. 295-309.

Choi Young-Sung, Lee Sun-Ho and Lee Byong-Whi, 'Expert judgment for nuclear energy', *Annals of Nuclear Energy* 27, 2000, pp. 575-88.

Damian, Michel, 'Nuclear power: The ambiguous lessons of history', *Energy Policy*, July 1992, pp. 596-607.

Dang Thi Hong, 'Country Report on Public Information', FNCA 2003 Project Leaders Meeting for Public Information of Nuclear Energy, Hanoi and Ho Chi Minh City, Vietnam, 4-6 November 2003. Available at http://www.fnca.mext.go.jp/english/pi/workshop2003_img/pi03_vie.pdf.

Dang Thi Hong, 'Country Report on Public Information', FNCA 2005 Project Leaders Meeting for Public Information of Nuclear Energy, Tokyo and Hachinohe City, Japan, 12-15 September 2005. Available at http://www.fnca.mext.go.jp/english/pi/workshop2005_img/pdf_9-1.pdf and http://www.fnca.mext.go.jp/english/pi/workshop2005_img/pdf_9-2.pdf.

FNCA Public Information Newsletter, 'A Joint Cross-National Questionnaire Survey on the Literacy in Science and Technology and Use of Radiation Among High-School Students In Seven FNCA Countries: 2002-2003', Forum for Nuclear Cooperation in Asia, July 2005. Available at http://www.fnca.mext.go.jp/english/pi/news_img/nl01.pdf.

FNCA 2006 Public Information (PI) on Nuclear Energy Project, 'Survey Results of Office of Atoms for Peace on The opinions of Thai People Toward "Nuclear Energy" during September-October 2007', Forum for Nuclear Cooperation in Asia (FNCA). Available at http://www.fnca.mext.go.jp/english/pi/topicsnews/thailand07-3.html.

Hoang Anh Tuan, 'Status of the National Development for Nuclear Power in Vietnam', presented at the Technical Meeting/Workshop on Evaluation Methodology for Nuclear Power Infrastructure Development, Vienna, Austria, 10-12 December 2008. Available at http://www-pub.iaea.org/MTCD/meetings/PDFplus/2008/35095/p35095/05%20-%20HoangAnhTuan-NPP-Infrastructure-VIETNAM-Vien-Dec2008.ppt.

Iskandar, Arianto, 'A Brief Report on the Indonesian Activities on Public Information', FNCA 2003 Public Information Project Leaders Meeting, Hanoi and Ho Chi Minh City, Vietnam, 4-6 November 2003. Available at http://www.fnca.mext.go.jp/english/pi/workshop2003_img/pi03_ins.pdf.

Krieg, R., 'Can the acceptance of nuclear reactors be raised by a simpler, more transparent safety concept employing improved containments?' *Nuclear Engineering and Design* 140, 1993, pp. 39-48.

Leonin, Rhodora R., 'Country Report on Public Information Activities in the Philippines', FNCA 2003 Public Information Project Leaders Meeting, Hanoi and Ho Chi Minh City, Vietnam, 4-6 November 2003. Available at http://www.fnca.mext.go.jp/english/pi/workshop2003_img/pi03_phi.pdf

Leonin, Rhodora R., 'A Brief Country Report: Nuclear Energy Development, Recent Issues/Concerns and Public Information Activities on Nuclear Energy in the Philippines', 2005. Available at http://www.fnca.mext.go.jp/english/pi/workshop2005_img/pdf_7-1.pdf and http://www.fnca.mext.go.jp/english/pi/workshop2005_img/pdf_7-2.pdf.

Marcus, Gail H., 'Regulatory policies and the future of nuclear power', *Progress in Nuclear Energy*, vol. 37, no. 1-4, 2000, pp. 65-70.

Mourogov, V. M., 'Role of nuclear energy for sustainable development', *Progress in Nuclear Energy*, vol. 37, no. 1-4, 2000, pp. 19-24.

O'Grady, Eileen, 'Sentiment toward nuclear power improving: Study', *Reuters*, 17 March 2009.

Ohnishi, Teruaki, 'A quantitative relation between nuclear energy information released by the newsmedia and resulting public opinions', *Annals of Nuclear Energy*, vol. 19, no. 7, 1992, pp. 377-380.

Ohnishi, Teruaki, 'A method to forecast quantitative variables relating to nuclear public acceptance', *Annals of Nuclear Energy*, vol. 19, no. 7, 1992, pp. 381-92.

Ohnishi, Teruaki, 'To What Extent Can the Nuclear Public Relations be Effective?' *Annals of Nuclear Energy*, vol. 23, no. 9, 1996, pp. 711-25.

Rajatatibodee, Vidhaya, 'Present Status of the Public Information Activities in Thailand', FNCA 2003 Project Leaders Meeting for Public Information of Nuclear

Energy, Hanoi and Ho Chi Minh City, Vietnam, 4-6 November 2003. Available at http://www.fnca.mext.go.jp/english/pi/workshop2003_img/pi03_tha02.pdf.

Rajatatibodee, Vidhaya, 'The Utilization of Nuclear Energy in Thailand', FNCA 2005 Project Leaders Meeting for Public Information of Nuclear Energy, Tokyo and Hachinohe City, Japan, 12-15 September 2005. Available at http://www.fnca.mext.go.jp/english/pi/workshop2005_img/pdf_8.pdf.

Tran Huu Phat, 'Nuclear power in Vietnam', *Nuclear Plant Journal*, January-February 2009, pp. 41-42. Available at http://tailieu.tapchithoidai.org/Nuclear_Power_in_VN_TranHuuPhat.pdf.

Sohn Ki-Yoon, Yang Jee-Won and Kang Chang-Sun, 'Assimilation of public opinions in nuclear decision-making using risk perception', *Annals of Nuclear Energy* 28, 2001, pp. 553-63.

Sumitra, Tatchai, 'Preparing for Nuclear Power in Thailand', Presentation/PowerPoint slides, 2008. Available at http://www.pbnc2008.org/documents/Publish/16PBNC_Plenary_2-3_(8).pdf.

Toth, Ferenc L., 'Dealing with public acceptance for nuclear power', MoEN/IEA Joint Workshop on 'Fuel Options for Power Generation in ASEAN', Bangkok, Thailand, 22-23 September 2008. Available at http://www.iea.org/textbase/work/2008/bangkok/toth_acceptance.pdf.

'Vietnam calculating the costs of nuclear energy', *Financial Times*, 11 April 2006.

Viklund, Mattias, 'Energy policy options – from the perspective of public attitudes and risk perceptions', *Energy Policy* 32, 2004, pp. 1159-71.

Yamagata, Hiroshi and Keiji Kanda, 'Bayesian analysis of public views on the safety of nuclear developments', *Annals of Nuclear Energy*, vol. 25, no. 10, 1998, pp. 709-20.

Yim Man-Sung, 'Effects of education on nuclear risk perception and attitude: Theory', *Progress in Nuclear Energy*, vol. 42, no. 2, 2003, pp. 221-35.