

INSAG-20

Stakeholder Involvement in Nuclear Issues

INSAG-20

A REPORT BY THE
INTERNATIONAL NUCLEAR SAFETY GROUP

INSAG



IAEA

International Atomic Energy Agency

IAEA SAFETY RELATED PUBLICATIONS

IAEA SAFETY STANDARDS

Under the terms of Article III of its Statute, the IAEA is authorized to establish or adopt standards of safety for protection of health and minimization of danger to life and property, and to provide for the application of these standards.

The publications by means of which the IAEA establishes standards are issued in the **IAEA Safety Standards Series**. This series covers nuclear safety, radiation safety, transport safety and waste safety, and also general safety (i.e. all these areas of safety). The publication categories in the series are **Safety Fundamentals**, **Safety Requirements** and **Safety Guides**.

Safety standards are coded according to their coverage: nuclear safety (NS), radiation safety (RS), transport safety (TS), waste safety (WS) and general safety (GS).

Information on the IAEA's safety standards programme is available at the IAEA Internet site

<http://www-ns.iaea.org/standards/>

The site provides the texts in English of published and draft safety standards. The texts of safety standards issued in Arabic, Chinese, French, Russian and Spanish, the IAEA Safety Glossary and a status report for safety standards under development are also available. For further information, please contact the IAEA at P.O. Box 100, A-1400 Vienna, Austria.

All users of IAEA safety standards are invited to inform the IAEA of experience in their use (e.g. as a basis for national regulations, for safety reviews and for training courses) for the purpose of ensuring that they continue to meet users' needs. Information may be provided via the IAEA Internet site or by post, as above, or by email to Official.Mail@iaea.org.

OTHER SAFETY RELATED PUBLICATIONS

The IAEA provides for the application of the standards and, under the terms of Articles III and VIII.C of its Statute, makes available and fosters the exchange of information relating to peaceful nuclear activities and serves as an intermediary among its Member States for this purpose.

Reports on safety and protection in nuclear activities are issued as **Safety Reports**, which provide practical examples and detailed methods that can be used in support of the safety standards.

Other safety related IAEA publications are issued as **Radiological Assessment Reports**, the International Nuclear Safety Group's **INSAG Reports**, **Technical Reports** and **TECDOCs**. The IAEA also issues reports on radiological accidents, training manuals and practical manuals, and other special safety related publications. Security related publications are issued in the **IAEA Nuclear Security Series**.

STAKEHOLDER INVOLVEMENT
IN NUCLEAR ISSUES

INSAG-20

A report by the International Nuclear Safety Group

The following States are Members of the International Atomic Energy Agency:

AFGHANISTAN	GHANA	PAKISTAN
ALBANIA	GREECE	PANAMA
ALGERIA	GUATEMALA	PARAGUAY
ANGOLA	HAITI	PERU
ARGENTINA	HOLY SEE	PHILIPPINES
ARMENIA	HONDURAS	POLAND
AUSTRALIA	HUNGARY	PORTUGAL
AUSTRIA	ICELAND	QATAR
AZERBAIJAN	INDIA	REPUBLIC OF MOLDOVA
BANGLADESH	INDONESIA	ROMANIA
BELARUS	IRAN, ISLAMIC REPUBLIC OF	RUSSIAN FEDERATION
BELGIUM	IRAQ	SAUDI ARABIA
BELIZE	IRELAND	SENEGAL
BENIN	ISRAEL	SERBIA
BOLIVIA	ITALY	SEYCHELLES
BOSNIA AND HERZEGOVINA	JAMAICA	SIERRA LEONE
BOTSWANA	JAPAN	SINGAPORE
BRAZIL	JORDAN	SLOVAKIA
BULGARIA	KAZAKHSTAN	SLOVENIA
BURKINA FASO	KENYA	SOUTH AFRICA
CAMEROON	KOREA, REPUBLIC OF	SPAIN
CANADA	KUWAIT	SRI LANKA
CENTRAL AFRICAN REPUBLIC	KYRGYZSTAN	SUDAN
CHAD	LATVIA	SWEDEN
CHILE	LEBANON	SWITZERLAND
CHINA	LIBERIA	SYRIAN ARAB REPUBLIC
COLOMBIA	LIBYAN ARAB JAMAHIRIYA	TAJIKISTAN
COSTA RICA	LIECHTENSTEIN	THAILAND
CÔTE D'IVOIRE	LITHUANIA	THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA
CROATIA	LUXEMBOURG	TUNISIA
CUBA	MADAGASCAR	TURKEY
CYPRUS	MALAYSIA	UGANDA
CZECH REPUBLIC	MALI	UKRAINE
DEMOCRATIC REPUBLIC OF THE CONGO	MALTA	UNITED ARAB EMIRATES
DENMARK	MARSHALL ISLANDS	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
DOMINICAN REPUBLIC	MAURITANIA	UNITED REPUBLIC OF TANZANIA
ECUADOR	MAURITIUS	UNITED STATES OF AMERICA
EGYPT	MEXICO	URUGUAY
EL SALVADOR	MONACO	UZBEKISTAN
ERITREA	MONGOLIA	VENEZUELA
ESTONIA	MOROCCO	VIETNAM
ETHIOPIA	MYANMAR	YEMEN
FINLAND	NAMIBIA	ZAMBIA
FRANCE	NETHERLANDS	ZIMBABWE
GABON	NEW ZEALAND	
GEORGIA	NICARAGUA	
GERMANY	NIGER	
	NIGERIA	
	NORWAY	

The Agency's Statute was approved on 23 October 1956 by the Conference on the Statute of the IAEA held at United Nations Headquarters, New York; it entered into force on 29 July 1957. The Headquarters of the Agency are situated in Vienna. Its principal objective is "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world".

INSAG-20

STAKEHOLDER INVOLVEMENT IN NUCLEAR ISSUES

INSAG-20

A report by the International Nuclear Safety Group

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 2006

COPYRIGHT NOTICE

All IAEA scientific and technical publications are protected by the terms of the Universal Copyright Convention as adopted in 1952 (Berne) and as revised in 1972 (Paris). The copyright has since been extended by the World Intellectual Property Organization (Geneva) to include electronic and virtual intellectual property. Permission to use whole or parts of texts contained in IAEA publications in printed or electronic form must be obtained and is usually subject to royalty agreements. Proposals for non-commercial reproductions and translations are welcomed and will be considered on a case by case basis. Enquiries should be addressed by email to the Publishing Section, IAEA, at sales.publications@iaea.org or by post to:

Sales and Promotion Unit, Publishing Section
International Atomic Energy Agency
Wagramer Strasse 5
P.O. Box 100
A-1400 Vienna
Austria
fax: +43 1 2600 29302
tel.: +43 1 2600 22417
<http://www.iaea.org/books>

© IAEA, 2006

Printed by the IAEA in Austria
September 2006
STI/PUB/1276

IAEA Library Cataloguing in Publication Data

Stakeholder involvement in nuclear issues : INSAG-20 / a report by the International Nuclear Safety Group. — Vienna : International Atomic Energy Agency, 2006.

p. ; 24 cm. — (INSAG series, ISSN 1025-2169 ; INSAG-20)

STI/PUB/1276

ISBN 92-0-111206-8

Includes bibliographical references.

1. Nuclear industry — Safety regulations. I. International Atomic Energy Agency. II. International Nuclear Safety Group. III. Series.

IAEAL

06-00458

The International Nuclear Safety Group (INSAG) is a group of experts with high professional competence in the field of nuclear safety working in regulatory organizations, research and academic institutions, and the nuclear industry. INSAG is constituted under the auspices of the International Atomic Energy Agency with the objective of providing authoritative advice and guidance on nuclear safety approaches, policies and principles for nuclear installations (defined as nuclear power plants, fuel cycle facilities, research reactors and support facilities). In particular, INSAG provides recommendations and informed opinions on current and emerging nuclear safety issues, to the international nuclear community and public through the offices of the IAEA.

FOREWORD

by the Chairman of INSAG

Many of the world's nuclear power plants were constructed long ago without much public involvement in the associated decision making. It is anticipated, however, that a variety of stakeholders will seek participation in such decisions now as the nuclear option is being revisited in many places. Accidents at Three Mile Island and Chernobyl, among other places, have served to arouse public concern. The development of "here-and-now" media capabilities has created an awareness that may not have previously existed. Improvements in educational systems and the development of the Internet have made technical information and expertise available to individuals and locations that were previously without them. In addition, consideration of the environmental impacts of various energy strategies has moved to the fore.

INSAG has concluded that the expectations of stakeholders of a right to participate in energy decisions are something that the nuclear community must address. Decisions regarding such matters as the siting and construction of a nuclear power plant are no longer largely the domain of a closed community of technical experts and utility executives. Today, the concerns and expectations of all manner of persons and organizations — from the local farmer to the international financial institution — must be considered.

This report is intended for use by all stakeholders in the nuclear community — national regulatory authorities, nuclear power plant designers and operators, public interest organizations and individuals, the media and, not to be forgotten, local and national populations. INSAG's fundamental conclusion is that all stakeholders with an interest in nuclear decisions should be provided with an opportunity for full and effective participation in them. With this right, however, come certain obligations on all sides for openness, candour and civility. INSAG is hopeful that this report will help define the interests and roles of the stakeholders in the nuclear enterprise. We believe that full and open engagement among the various stakeholders will serve to improve decision making, as well as advance the common interest in assuring the safety of nuclear installations.

CONTENTS

1.	INTRODUCTION	1
1.1.	Definition.....	1
1.2.	Background.....	1
1.3.	Purpose	2
1.4.	Target groups.....	2
2.	SAFETY RELEVANCE OF STAKEHOLDER INVOLVEMENT.....	2
2.1.	General	2
2.2.	Relevance to the performance of regulators.....	3
2.3.	Relevance to the performance of operators	3
3.	COMMUNICATION WITH STAKEHOLDERS.....	4
3.1.	Attributes.....	4
3.2.	Information and issues.....	4
3.3.	Credibility	5
3.4.	Restrictions	6
4.	PARTICIPATION BY STAKEHOLDERS IN DECISION MAKING PROCESSES.....	7
4.1.	Including stakeholders.....	7
4.2.	Importance of participation at the right time	8
4.3.	Examples of nuclear issues with stakeholder interest	8
4.4.	Procedures for participation	11
4.5.	Tools and means for participation	12
5.	DOCUMENTATION AND FEEDBACK	13
6.	CONCLUSIONS AND RECOMMENDATIONS.....	13
	REFERENCES	14
	MEMBERS OF THE INTERNATIONAL NUCLEAR SAFETY GROUP.....	15
	PUBLICATIONS OF THE INTERNATIONAL NUCLEAR SAFETY GROUP.....	16

1. INTRODUCTION

1.1. DEFINITION

1. Stakeholders are defined in this report as those who have a specific interest in a given issue or decision. The group can include the general public. There are normally two types of stakeholders: internal and external. Internal stakeholders are those involved in the decision making process, while external stakeholders are most often affected by the potential outcome of the project, either directly or emotionally. The involvement of both stakeholder groups can be essential to achieving project goals and objectives and can contribute substantially to safety. This report makes no distinction between internal and external stakeholders other than recognizing the importance of both.

1.2. BACKGROUND

2. Nuclear science and technology contribute significantly to society through the generation of electrical energy, as well as through medical and industrial applications. All members of society are entitled to easy access to objective, unbiased information so that they can reach an informed opinion on nuclear issues in general and can participate meaningfully in matters relating to developing nuclear projects. Moreover, individuals and organizations should have an opportunity to express their concerns and receive honest, credible and timely answers to their questions.

3. In many Member States, the means for involving various stakeholder groups in the licensing of nuclear projects are defined by legislation. One such stakeholder group is comprised of the elected representatives and the authorities who are directly involved in preparing for, or making decisions on, licences for nuclear projects. Other stakeholders include organizations and individuals who have legitimate interests in the impacts of such projects. Many countries organize formal debates on controversial issues, such as those that may surround a nuclear project, to assist in formulating public policy. The news media can play an important role in transmitting information relating to issues surrounding nuclear projects.

4. The active solicitation of the involvement of all stakeholders could be viewed as a means to promote the use of nuclear technology. That perception should be avoided; promotion should not be an objective of a comprehensive

stakeholder involvement programme. Instead, the establishment of a dialogue among all stakeholders should be seen as an essential part of any complete nuclear programme and, as such, in the best interest of both internal and external stakeholders.

1.3. PURPOSE

5. This report has four main purposes: (a) to advocate open, transparent, factual, timely, informative and easily understandable multilateral communications among members of society and those who are operating or regulating nuclear facilities or developing a nuclear project; (b) to establish that substantive stakeholder communications contribute to the safe operation of nuclear facilities; (c) to present the major attributes of an effective communication programme; and (d) to discuss ways and means for the efficient and rational involvement of stakeholders in the consideration of nuclear issues.

1.4. TARGET GROUPS

6. The report is addressed to those who are planning, designing, constructing, operating, decommissioning or regulating nuclear facilities, or managing nuclear facility licensing processes. Such persons may not have a statutory obligation to inform stakeholders of planned projects and the respective impacts on society. Nonetheless, this report advocates the establishment of such a programme even if one is not required by law.

2. SAFETY RELEVANCE OF STAKEHOLDER INVOLVEMENT

2.1. GENERAL

7. Operators and regulators confronted with questions and concerns from stakeholders may have to re-examine the basis for previous decisions. Answering such questions in a thoughtful and deliberate manner may require the gathering of technical data or the conduct of further analyses. Nonetheless,

investigating such questions provides clarity, prevents complacency, and may expose unforeseen problem areas.

8. Timely stakeholder involvement may enhance safety and certainly can encourage public confidence. Stakeholder involvement may result in attention to issues that otherwise might escape scrutiny. Public confidence is improved if issues that are raised by the public are taken seriously and are carefully and openly evaluated.

2.2. RELEVANCE TO THE PERFORMANCE OF REGULATORS

9. Stakeholder involvement makes regulatory organizations and other authorities acutely aware that their actions are under public scrutiny. Transparency increases the motivation of individuals and institutions to meet their responsibilities in: (a) drafting rules and regulations; (b) strictly verifying compliance; and (c) enforcing necessary corrective actions. Transparency also increases awareness within regulatory organizations of the need for a quality regulatory programme, and reinforces their responsibility to ensure the safety of the installations under their oversight. Moreover, the involvement of stakeholders may result in more practical, relevant and coordinated administrative, technical and socially responsible decisions on safety issues.

2.3. RELEVANCE TO THE PERFORMANCE OF OPERATORS

10. The responsibility for safe operation lies first and foremost with the operators of nuclear facilities. Stakeholder involvement compels the operators to be aware that plant operations, as well as their other actions to meet the rules and regulations, are under public scrutiny. This awareness serves to create strong incentives for achieving a high level of safety performance within the operating organization. Experience in many countries has shown that such transparency can be an extremely effective enforcement tool to enhance safety performance.

3. COMMUNICATION WITH STAKEHOLDERS

3.1. ATTRIBUTES

11. Stakeholder involvement in nuclear safety issues requires established communication mechanisms and venues for discussions between the interested parties and those responsible for decision making.

12. A significant attribute of a good communication programme is the desire among all parties to establish and maintain constructive two way interaction. A primary goal should be for each participant to listen to and understand the concerns, issues and questions articulated by each side and address those relevant concerns in a manner that is as responsible and understandable as possible.

3.2. INFORMATION AND ISSUES

13. General information on nuclear safety issues provided by authorities and regulatory organizations, educational institutions, and professional and industrial organizations is of vital importance in increasing public knowledge of nuclear safety and radiation protection. Effective communication of such information is often accompanied by dialogue and direct interaction. Continuing opportunities for dialogue can serve as a basis for positive communications when problems occur.

14. General education should start as soon as possible, even at the elementary school level. Accurate, factual information on nuclear issues should be made available and easily accessible to all teachers.

15. Among the basic facts to be discussed openly are information on potentially harmful consequences of the normal operation of various nuclear facilities and of abnormal events and accidents that either have occurred or are reasonably credible. The estimated consequences of such an accident and the means for limiting consequences and probabilities need to be discussed in simple terms. In many cases, the public is not interested in the technical details surrounding a complex issue. Merely answering the question "Am I safe?" in an honest and credible way may be adequate for many. However, each interaction must be tailored to the particular stakeholder group with whom one interacts.

In no case should the public's ability to comprehend complex issues be underestimated or used as an excuse to withhold information.

16. Information on successful operations should be communicated. Such information may refer to a single installation, to a given set of installations, or to the industry as a whole. Such information serves to give the public appropriate assurance of operational safety. In fact, operators are entitled to stress successful operation and the benefits derived from nuclear energy, so long as the information is unbiased and objective. Regulators may also use well established, internationally accepted criteria to assess the operational safety of the installations they regulate and to share such information with the public.

17. A common observation in many studies is that members of the public often have incorrect perceptions of various nuclear safety matters. In many cases the public overestimates the risk and the severity of the potential consequences of accidents. At the same time, it underestimates the efforts made by licensees and regulators to consider the hazards and to prevent or mitigate them. It is therefore important to conduct surveys to understand the actual concerns of the public and to determine the level of interest in information about nuclear safety issues. Communication should focus on those issues in which interest is high, where there is a need for accurate information and about which decisions are being made.

18. Providing information related to operating experience is the responsibility of both the operator and regulatory organization. Information about events of widespread interest to the public needs to be communicated promptly through the mass media in order to maximize distribution of the information. Providing information using existing professional networks, the Internet and other forums could fulfil part of the information needs of certain stakeholder groups. However, depending on the nature of the event, there is no substitute for direct, face-to-face dialogue to satisfy the need of stakeholders for accurate information in a timely manner.

3.3. CREDIBILITY

19. All operators and regulators should be aware that public confidence is an important prerequisite for the credibility of their statements and acts, and thus for the success of a national nuclear programme. A high level of safety demonstrated continuously over time is necessary to provide the foundation for trust.

Trust needs to become an integral building block of a comprehensive and successful stakeholder communications programme.

20. Brief statements by government representatives or nuclear experts are not adequate to provide credibility on estimates of nuclear risk or on measures to control those risks. More complete information is necessary. But any communication must be factual, timely, complete and understandable. Members of society must be provided with enough clear information to promote meaningful dialogue. The aim should be to provide information that is adequate to gain a basic understanding of the relevant nuclear issues and to enable a reasonable person to come to a reasonable and informed conclusion regarding both risks and benefits. The factual information should include an explanation of measures and means that are available to control and manage any risks. This information should be sufficient to enable the public to consider and suggest alternative approaches to issues of concern and to better understand the approaches that are proposed.

21. Government authorities, regulators and plant operators need to earn their credibility as communicators. A prerequisite for achieving trust is timely, accurate and complete public information on abnormal events, incidents and accidents at nuclear facilities. Equally important is the issuance of periodic, accurate and complete public information concerning plant operations (annual reports, plant shutdowns, as well as maintenance and occupational and nuclear safety performance) and of normal plant releases, radiation surveys, and waste management activities. It should be assumed that some members of the public will be sceptical of such information and may presume that the interests of operators and government officials will prevent them from being fully open and honest. In fact, credibility is very hard to earn and very easy to lose. Responsible parties must feed and nurture their relationship with stakeholders through candour and accuracy at all times.

3.4. RESTRICTIONS

22. Restrictions on information should be limited, although it is acknowledged that sensitive nuclear security information cannot be released to the general public. In general, the public understands the need for such restrictions, so long as they are used properly and not abused. In addition, the nuclear industry and plant owners have a right to withhold information of a proprietary nature. In such cases, it is important to provide general information to the extent possible and to explain the reasons for withholding any details.

Regulatory information, such as final safety evaluation reports or inspection findings, should be made public as soon as possible.

23. Communication should not be restricted by national boundaries and should be made available in different languages, if appropriate, to ensure communication with the affected public. In some cases, nuclear power plants and fuel cycle installations are located near country borders. Experience shows that the consequences of an accidental radioactive release may well affect several countries, both contiguous as well as in the general vicinity. International agreements exist to ensure that members of the public in other countries are kept informed on nuclear and radiation risks and that emergency planning is well coordinated to protect populations in the immediate area as well as in neighbouring countries. For nuclear power plants, the Convention on Nuclear Safety constitutes a useful framework in this regard.

4. PARTICIPATION BY STAKEHOLDERS IN DECISION MAKING PROCESSES

4.1. INCLUDING STAKEHOLDERS

24. Providing constructive participation by stakeholder groups on substantive and controversial issues can be a major administrative and logistical challenge. Cultural bias and preconceived notions can make such participation difficult and time consuming. Nonetheless, this effort should be undertaken as it is based upon a general right of a stakeholder to be informed and to be involved in decisions that affect his or her well-being. Moreover, reasonable issues and concerns that are presented by stakeholders should be factored into decisions.

25. In many countries a variety of venues, mechanisms and procedures for participation have been established for nuclear and non-nuclear related issues. Various methods for the participation of stakeholders should be encouraged and the lessons arising from their use should be shared throughout the international nuclear community.

4.2. IMPORTANCE OF PARTICIPATION AT THE RIGHT TIME

26. When launching a plan for establishing a new nuclear facility, modifying an old one or specifying technical limits to a planned release of radioactivity, it is important to begin stakeholder participation early so that people have a legitimate opportunity to participate in the process and shape the outcome. Meaningful participation by stakeholders requires that such stakeholders be given an opportunity to convey their issues and concerns regarding risk and related questions and to obtain answers. If an answer must be delayed, stakeholders should be provided with a reasonable estimate as to when an answer will be forthcoming. A timely opportunity for affected stakeholders to provide input can expedite the decision making process by ensuring that legitimate concerns are addressed early in the process. This can increase the likelihood of a project's success.

4.3. EXAMPLES OF NUCLEAR ISSUES WITH STAKEHOLDER INTEREST

27. The following are examples of opportunities for stakeholder participation.

- (1) *Debate on the incorporation of nuclear energy in the national energy plan.* Traditionally, governments establish national energy plans that are discussed with the affected industry and considered by the national government. Such plans have a national relevance and the stakeholders are typically informed of the main characteristics. But such an effort may not be sufficient. Some countries have undertaken wide public debates on energy policy, thereby ensuring greater public input into the decision process. Although somewhat controversial within this context, it is worthwhile to consider the national debate on energy that was conducted in France from March to October 2003 [1].
- (2) *Development of legislation defining nuclear regulation.* The process of developing first level nuclear legislation — legislation that provides the statutory authority for regulators or ministries with responsibility for nuclear matters — is well established in most countries. Such legislation is the responsibility of governments and parliaments in which stakeholders are represented. The development of second level nuclear legislation — such as the regulations governing the licensing process or radiation protection regulations — is usually the responsibility of a specific ministerial or regulatory body. The participation of stakeholders

at this level is not well developed or organized in all countries. Stakeholder participation in drafting second level legislation should be encouraged. The development of third level nuclear regulations — mainly safety, radiation, waste and transportation standards — is usually the responsibility of regulatory bodies. In many cases, before being issued, such documents are sent for comment to specific technical bodies, or industry or user associations, but often a procedure does not exist for general stakeholder participation. There is a need to establish an effective mechanism for more public participation in this process. The examples of some developed countries could, in this respect, serve as a reference [2–4].

- (3) *Decision to install a new nuclear power plant, fuel cycle installation or a high level waste repository.* This is a major decision affecting all stakeholders, including national governments. The participation by stakeholders is generally integrated into the basic regulations of many countries, although the details are not always well defined. Experience shows that in democratic societies the construction of a new nuclear power plant, fuel cycle installation or radioactive waste repository is not possible without the active consent of at least the population most directly affected. In Finland, the site selection for a final spent fuel repository was a lengthy process that included participation by Parliament, the local authorities and the public [5]. However, after the process was completed, the decision on the type and site of the repository was approved with a large consensus.
- (4) *Establishment and execution of the emergency plan.* Persons living in the neighbourhood of a nuclear installation would gain greater understanding of any risks if they were given an opportunity to participate in the development of its emergency plan. Local participation should be encouraged for all aspects of emergency response. Because local experts and authorities are the main bearers of the risk and must participate in the implementation of an emergency plan, these stakeholders, in particular, should be encouraged to participate in drafting or commenting on the emergency plan and in verifying that all necessary equipment and services are available. Moreover, they must be encouraged to participate in planning for drills and exercises and in the analysis of lessons learned. After a radiological emergency, whatever the consequences, the affected population is entitled to participate in decisions concerning any long term response or recovery.
- (5) *Controlled releases and radiological surveys of the environment.* Controlled radioactive releases are a major point of social concern and distrust. Environmental radioactivity surveys and the analysis of their

results and expected consequences can serve to give the stakeholders understanding of the radiological impact of the installation on their communities. In most countries the regulatory authorities must inform the affected population on these matters after a release, but in many cases there are no methods to ensure the participation of the affected stakeholders in deliberations before a planned release. Methods should be developed to ensure the formal participation of the local authorities and the public in the controlled release of radioactivity from nuclear installations and in the related radiological surveys. As the environment is the recipient of those controlled releases, public participation is often well regulated nationally and by internationally accepted legal instruments, such as the Aarhus Convention [6].

- (6) *Environmental restoration of old nuclear sites.* There is growing concern with sites that have been polluted by radioactive substances as a result of operations. This refers to any site, abandoned or in use, on which radioactive substances, either natural or artificial, have been or are being used and stored in such a fashion that the site, if hazardous for public health and/or the environment, may be in need of restoration. Of particular interest are research centres and industrial developments, including uranium mines, located close to population centres. Restoration efforts can affect not only the general population, but also the workers at those sites. Moreover, cleanup operations may temporarily increase the level of radiation in the local environment. Most States require the preparation of an environmental impact statement in such cases, which provides a mechanism for stakeholders to participate in decisions that may affect their health. Organizations of individuals participating in the environmental restoration of the site have also been created to provide information on the process and, on occasion, to oversee it. An example is provided by the cleanup of the Hanford site in the USA (<http://www.ecy.wa.gov/programs/nwp/links.html>).
- (7) *Dismantling and closure of nuclear installations.* Dismantling and closing nuclear installations, in particular when there is a release of the site for other applications, is often of concern to local and regional authorities and to the surrounding population. Such concerns are particularly likely if the site contains a large quantity of low level waste. Therefore, stakeholder participation should be pursued in these cases as well. The dismantling of the Spanish Vandellós I nuclear power plant, a natural uranium graphite moderated reactor, is a case in point [7].
- (8) *Management of radioactive waste.* The management of radioactive waste is also a sensitive subject. High level waste and spent fuel elements often remain in place for prolonged periods of time, either in pools or in dry

containers, due to a ban on reprocessing or the absence of a central high level waste repository. The control of such waste is a matter of concern for the local authorities and population. These stakeholders have the right to be informed of issues relating to the storage of such waste and utilities and regulators should be obliged to involve them in any related decision-making process. The OECD/NEA has recently carried out a survey on the subject [8] and the European Union is sponsoring research projects covering European activities [9].¹

- (9) *Transport of radioactive material.* The transport of radioactive material to and from a nuclear installation, mainly irradiated fuel elements, can be a matter of great concern for the public. Such transport is comprehensively regulated, but important details, such as the transportation routes, emergency plans and radiation surveys should be shared with the local authorities and population.
- (10) *Issues related to the security of nuclear sites and material.* Nuclear security is a matter of public concern. Communicating detailed information on security related issues is problematic due to the potentially sensitive or classified nature of the information. However, reasonable efforts should be pursued to make appropriate security related information available to the stakeholders, to the degree possible.

4.4. PROCEDURES FOR PARTICIPATION

28. Effective stakeholder participation in decision making processes requires that appropriate procedures be established. The procedures should contain specific guidance, including a clear definition of the issues to which the procedure applies, a well structured process for decision making, the expected level of involvement, the encouragement of balanced representation of stakeholders, a schedule of venues for participation, and provision of appropriate resources for stakeholder involvement. The procedures must ensure the independence of regulatory decisions, as recommended by INSAG-17, Independence in Regulatory Decision Making [10].

¹ A current project is COWAM II, Improving the Governance of Nuclear Waste Management and Disposal in Europe; see <http://www.cowam.org>.

4.5. TOOLS AND MEANS FOR PARTICIPATION

29. The authority or authorities who must decide upon any socially sensitive nuclear issue have the obligation to inform the public through well established procedures. The members of the public, individually or through recognized organizations, then have the right to present comments and proposals that the decision makers should analyse and consider formally before a decision is finally taken. Public participation in the decision making process should not aim to reach consensus and should not be viewed as a referendum on the issue.

30. Many countries with advanced nuclear programmes have created procedures for meaningful stakeholder involvement, usually on environmentally related issues. The Aarhus Convention [6] and the Barnier law in France² are examples. The Barnier law requires that any large public work, including the construction of a nuclear power plant or a new transmission line, be subject to public debate in accordance with the procedures established by a National Committee for Public Debates. The debates are monitored to ensure that they are well organized, reasonable in content and appropriately limited in scope. In the UK and the USA, public inquiries into nuclear issues are often conducted under the authority of a judge or review board. However, in the UK, a recent inquiry by the House of Lords Select Committee on Science and Technology has concluded that what was done in the past to encourage stakeholder involvement may not be sufficient today.

31. For subjects related to radiation protection, the Villigen Workshops [11–13] organized by the OECD/NEA Committee on Radiation Protection and Public Health have been considering the development of guides for the involvement of stakeholders in the decision making process on matters related to radiation protection. The major conclusion of these workshops is that drafting specific procedures is very complicated due to the variety of situations and the diversity of the stakeholders. Therefore, only general procedures can be commonly agreed upon. Difficulties inherent in this process are the frequent use of emotional reasoning, dogmatism, or the provision of complicated or incomprehensible information on the part of experts.

² Loi n 95-101 du 2 février 1995, Relative au renforcement de la protection de l'environnement (loi BARNIER), NOR: ENVX9400049L.

5. DOCUMENTATION AND FEEDBACK

32. The information exchanged in the participative process should be preserved in a fashion that allows subsequent analysis and feedback. Such documentation can serve to ensure that future transactions on the subject benefit from comprehensive historical review. Practical methods for obtaining feedback on the quality, adequacy and impact of the process should be included so that the system can be improved. The communication of information and the solicitation of feedback should continue throughout the life of the project.

6. CONCLUSIONS AND RECOMMENDATIONS

33. The political, social and economic impacts arising from the use of nuclear energy have generated considerable public concern and debate. Public participation in decisions can promote a greater degree of understanding and can ensure more reasonable appreciation of risks and benefits. It is of utmost importance to provide opportunities for stakeholder involvement and to look for new ways to obtain stakeholder input. Decision making mechanisms may vary considerably by country, depending on culture, history and governmental philosophy. Even taking into account such differences, it is nonetheless recommended that all countries create instruments that enhance stakeholder involvement. The active involvement of stakeholders in nuclear issues can provide a substantial improvement in safety and can enhance the general acceptability of the ultimate decisions made.

34. Although regulatory institutions and authorities in most countries have a legal obligation to inform stakeholders of their activities, that obligation is not always clearly stated or well developed. It is recommended that relevant institutions and authorities establish procedures for meaningful interaction with stakeholders. The IAEA Commission on Safety Standards is invited to consider issuing requirements and safety guides to that end. Likewise, the OECD/NEA Committees should continue to pursue ways to enhance and improve stakeholder involvement.

REFERENCES

- [1] BESSON, J., Une stratégie énergétique pour la France, Débat national sur les Energies, Rapport final, Ministère de l'énergie, Paris (2003); available at <http://www.debat-energie.gouv.fr/>
- [2] NUCLEAR REGULATORY COMMISSION, Citizen's Guide to U.S. Nuclear Regulatory Commission Information, Rep. NUREG/BR-0010, Rev. 4, August 2003, NRC, Washington, DC (2003); available at <http://www.nrc.gov>
- [3] NUCLEAR REGULATORY COMMISSION, Public Involvement in the Nuclear Regulatory Process, Rep. NUREG/BR-0215, Rev. 2, October 2004, NRC, Washington, DC (2004); available at <http://www.nrc.gov>
- [4] NUCLEAR REGULATORY COMMISSION, Effective Risk Communication, The Nuclear Regulatory Commission's Guidelines to External Risk Communication Rep. NUREG/BR-0308, January 2004, NRC, Washington, DC (2004); available at <http://www.nrc.gov>
- [5] OECD NUCLEAR ENERGY AGENCY, Stepwise Decision-making in Finland for the Disposal of Spent Nuclear Fuel (Proc. Workshop Turku, 2001), OECD, Paris (2002); available at <http://www.nea.fr/html/rwm/fsc.html>
- [6] UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE, Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, , UNECE, Geneva (1998); available at <http://europe.eu.int/comm/environment/aarhus/>
- [7] EMPRESA NACIONAL DE RESIDUOS RADIATIVOS, Vandellós I Nuclear Power Plant Decommissioning Report 1998-2003, ENRESA, Madrid (2004); available at <http://www.enresa.es/>
- [8] OECD NUCLEAR ENERGY AGENCY, Stepwise Approach to Decision-making for Long-term Radioactive Waste Management: Experience, Issues and Guiding Principles, Rep. No. 4429, OECD, Paris (2004).
- [9] SWEDISH NUCLEAR POWER INSPECTORATE, Transparency and Public Participation in Radioactive Waste Management, RISCOM II Final Report, Rep. 2004:08, SKI, Stockholm (2003).
- [10] INTERNATIONAL NUCLEAR SAFETY ADVISORY GROUP, Independence in Regulatory Decision Making, INSAG-17, IAEA, Vienna (2003).
- [11] OECD NUCLEAR ENERGY AGENCY, The Societal Aspects of Decision-making in Complex Radiological Situations (Proc. Workshop, Villigen, 1998), OECD, Paris (1998).
- [12] OECD NUCLEAR ENERGY AGENCY, Policy Issues in Radiological Protection Decision-making (Proc. 2nd Workshop, Villigen, 2001), OECD, Paris (2001).
- [13] OECD NUCLEAR ENERGY AGENCY, Stakeholder Participation in Radiological Decision-making: Processes and Implications (Proc. 3rd Workshop, Villigen, 2003), OECD, Paris (2004).

**MEMBERS OF THE
INTERNATIONAL NUCLEAR SAFETY GROUP**

Abagyan, A.A. (in memoriam)

Lauvergeon, A.

Alonso, A.

Matsuura, S.

Birkhofer, A.

Meserve, R. (Chairman)

Echavarri, L.E.

Ronaky, J.

Harbison, S.

Sharma, S.K.

Hill, T.

Tian, Jia Shu

Kang, C.S.

Torgerson, D.F.

Laaksonen, J. (Vice-Chairman)

PUBLICATIONS OF THE INTERNATIONAL NUCLEAR SAFETY GROUP

75-INSAG-1	Summary report on the post-accident review meeting on the Chernobyl accident	1986
75-INSAG-2	Radionuclide source terms from severe accidents to nuclear power plants with light water reactors	1987
75-INSAG-3	Basic safety principles for nuclear power plants	1988
75-INSAG-4	Safety culture	1991
75-INSAG-5	The safety of nuclear power	1992
75-INSAG-6	Probabilistic safety assessment	1992
75-INSAG-7	The Chernobyl accident: Updating of INSAG-1	1993
INSAG-8	A common basis for judging the safety of nuclear power plants built to earlier standards	1995
INSAG-9	Potential exposure in nuclear safety	1995
INSAG-10	Defence in depth in nuclear safety	1996
INSAG-11	The safe management of sources of radiation: Principles and strategies	1999
INSAG-12	Basic safety principles for nuclear power plants 75-INSAG-3 Rev. 1	1999
INSAG-13	Management of operational safety in nuclear power plants	1999
INSAG-14	Safe management of the operating lifetimes of nuclear power plants	1999
INSAG-15	Key practical issues in strengthening safety culture	2002
INSAG-16	Maintaining knowledge, training and infrastructure for research and development in nuclear safety	2003
INSAG-17	Independence in regulatory decision making	2003
INSAG-18	Managing change in the nuclear industry: The effects on safety	2003
INSAG-19	Maintaining the design integrity of nuclear installations throughout their operating life	2003

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA
ISBN 92-0-111206-8
ISSN 1025-2169