

Economic and Social Considerations for the Future of Nuclear Energy in Society

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Report

Analysis of recommendations for stakeholder engagement

Work Package 1

Lead Beneficiary: EIMV

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Analysis of recommendations for stakeholder engagement

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Executive Summary

This report presents a comprehensive analysis of existing recommendations on stakeholder engagement in the nuclear energy sector, covering the entire lifecycle of nuclear facilities—from policy formation to decommissioning. Conducted as part of Task 1.3 of the ECOSENS project, the review critically examines 55 international and EURATOM-funded documents to identify cross-cutting principles, engagement gaps, and best practices for inclusive decision-making.

The review used a systematic scoping procedure focused on reports from EURATOM research projects and international organisations such as IAEA, OECD-NEA, and others. A specially designed data collection template enabled uniform analysis across thematic domains which included decommissioning, environmental remediation, emergency preparedness and recovery, nuclear policy and governance, radiation protection and radioactive waste management. Stakeholders were categorised using the Quintuple Helix model (research, economy, environment, civil society/media, political institutions), and the emphasis was placed on interactive participation forms rather than one-way communication.

Across all domains, the following universal principles and actions are recommended:

- **Early and Continuous Engagement**: Initiate stakeholder involvement from the outset and maintain it throughout project lifecycles.
- **Varied Forms of Participation**: Employ deliberative dialogues, partnerships, and two-way consultations tailored to context and stakeholder groups.
- **Trust and Transparency**: Ensure independent assessments of safety and investment decisions, and communicate clearly about objectives, risks, and outcomes.
- **Supportive Infrastructure**: Provide financial, legal, and educational means to empower meaningful stakeholder involvement.
- **Adaptable Governance**: Review and revise national legislative and administrative frameworks to enable effective public participation.
- **Monitoring and Responsiveness**: Continuously track public perceptions and concerns to inform and adjust engagement strategies.

This synthesis underscores the evolving expectations and responsibilities in stakeholder engagement within nuclear governance. The findings provide a strategic foundation for the ECOSENS project's subsequent activities, including survey development, case studies in different participatory countries and recommendations for future stakeholders' engagement in nuclear sector. It also offers valuable insights for policymakers, regulators, and practitioners aiming to foster inclusive, legitimate, and resilient nuclear decision-making processes.

1. Introduction

The first subtask of Task 1.3 of the ECOSENS project is an analysis of current *recommendations for stakeholder*[1] *engagement* in energy policies and sustainability assessments for nuclear energy, throughout the entire life cycle of nuclear facilities. It aims at providing a general overview, as well as identifying crosscutting principles and gaps (domains with less attention to stakeholder participation). The outcomes from this analysis will inform the next task, i.e. the online survey and case studies.

Several studies, originating in research and civil society, have addressed the legal requirements for stakeholder involvement and their implementation, focusing for example on the Aarhus Convention, EURATOM Basic Safety Standards, or the Nuclear Safety Directive (e.g. Perko et al., 2020; Zeleznik et al., 2019; Mraz and Lorenz, 2016; Ferraro, 2018)[2].

Notwithstanding the large scholarly literature on public participation and stakeholder engagement in the nuclear field and beyond, our focus of analysis is limited here to recommendations created in an international policy arena, either directly by international organisations, or through international, EURATOM-funded, collaborative research projects. However, we will discuss the findings against the background of the wider literatures on good governance of complex issues (e.g. Renn, 2005).

This analysis is expected to enhance the understanding of the opportunities and contexts facilitating the integration of insights and knowledge from technical and SSH disciplines, and from scientific and non-scientific stakeholders, and meaningful participation in decision-making.

2. Methodology

2.1 Scoping procedure

A database has been assembled consisting of recommendations regarding stakeholder engagement in the nuclear field in total 55 documents. After the first review, 5 documents were found out of scope as they did not focus on stakeholder engagement and were not further analysed (Appendix 5.1).

For this purpose, reports and documents on stakeholder engagement from selected EURATOM funded projects and from international organisations (IAEA, OECD-NEA, Nuclear Transparency Watch) were be screened and analysed. The objective is to focus on stakeholder engagement recommendations regarding phases or aspects that can be situated at any place in the life cycle of nuclear facilities, from establishing nuclear energy policies through to decommissioning of facilities.

The choice was made to focus on these documents as they aggregate insights from several countries, are on practical experiences and case studies (especially in case of EURATOM projects), and have potentially wider impacts and outreach.

Systematic searches of published documents have been conducted through consulting the online databases of the IAEA, OECD-NEA and Nuclear Transparency Watch (NTW) using the keywords

[1] See Glossary for a description of key concepts in M3: Methodology for assessment of the uptake of recommendations on stakeholder engagement and interdisciplinary collaborations in nuclear R&D and decision-making

[2] All references are given in milestone report M3.

"stakeholder involvement". Additionally, relevant publications from the following international projects were considered: RISCOM, COWAM I, COWAM II, Cowam In Practice (CIP), ARGONA, IPPA, InSOTEC, MODERN2020, PLATENSO, EAGLE, HONEST, CONFIDENCE, TERRITORIES, SHAMISEN, SHAMISEN-SINGS and ENGAGE.

Screening of the documents was done according to the following steps:

1. Read introduction and conclusion, focusing on recommendations being made, advice given, or guidelines provided regarding stakeholder engagement.

2. Search the document for recommendations regarding stakeholder engagement using the keywords such as 'recommend*', 'advis*', 'guide*', 'should'.

3. If references are made to other documents in the project/by the organisation on which the recommendation is based – and which are not yet included in the database of documents to be screened, this document should be added to the database and screened.

Stakeholders in focus

Stakeholders were identified and grouped drawing on the Quintuple Helix model, which is particularly relevant for ECOSENS as it is deemed to provide a "framework for transdisciplinary (and interdisciplinary) analysis of sustainable development and social ecology" (Carayannis and Campbell, 2010, pp.62; cited in Carayannis et al., 2012).

The Quintuple Helix Model emphasises the interconnections between knowledge, innovation and the natural environment. The five helices include (adapted from Carayannis et al., 2012):

1. the research (SSH and non-SSH) and education system, e.g. universities, higher education systems, research centres and schools;
2. the economic system, e.g. nuclear industry, other relevant industry (e.g. energy distribution), firms, services and banks;
3. the natural environment, e.g. environmental NGOs;
4. the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
5. the political system, e.g. regulator, government agencies, politicians.

Form of participation

Participation can take different forms, involving uni- or multi-directional interactions; being institutional or citizen-led; having lower or higher influence on agenda-setting and decision making. It can range from providing information, through to gathering information, dialogue, to collaboration or partnering. Each form may have its own merit depending on the context in which it is used (Turcanu et al., 2020).

The focus in the analysis of recommendations was on the interactive forms of participation, further referred to as "engagement", that go beyond simple one-way interactions (i.e. information provision), are supportive of mutual learning among stakeholders, and have the potential for higher impact on nuclear decision-making.

Inclusion criteria

- the document makes references to the involvement of stakeholders;

- the document is a report of the IAEA, OECD NEA or NTW, or of a EURATOM funded project (see list above); or it is a review of documents pertaining to the former categories;
- the document speaks to a form of participation that goes beyond information provision.

Exclusion criteria

- the document does not refer to nuclear energy (in general, or a particular phase in the life cycle of a nuclear installation) ;
- the document does not satisfy the inclusion criteria, e.g. it only concerns communication.

Limitations

In the subtask we focus on recommendations formulated in the nuclear field. The review uses systematic searches of the online databases of the IAEA, the OECD-NEA and NTW using the keywords "stakeholder involvement", but recommendations formulated in the context of EURATOM projects will be identified largely based on the extensive knowledge available in the consortium as regards reports and projects addressing the research question.

2.2 Data collection template

For the analyses of the documents the data template was developed (Appendix 5.2). It includes first information about the coder, document (all data), the related publisher and similar. The second part deals with the content analyses, like which domain is covered, step in the policy formation and related stakeholders addressed. In addition, underlying principles or values, objectives, forms of participation responsible to act and how to implement are given. There is also option to add additional information.

3 Analyses of collected data

The results of analyses are presented in Appendix 5.3. Here, only summary findings are provided divided in six fields: decommissioning, environmental remediation, emergency preparedness, response and post-accident recovery, nuclear policy and related issues, radiation protection and radioactive waste management (RWM). Based on the findings from the individual fields, also general recommendations are derived which are valid for all fields.

3.1 Decommissioning

For decommissioning only three documents have been analysed. Two documents were produced under IAEA and one under NEA, but all in period between 2005 and 2010.

In the documents the underlying values are openness, transparency, clarity towards all stakeholders and early engagement. Because of changes in society's decision-making environment and heightened public sensitivity to all matters connected with environmental protection, nuclear power, radioactivity, and especially radioactive waste, any decision regarding whether, when and how to implement waste management solutions will typically require thorough public examination and the involvement of many relevant stakeholders. Decommissioning also includes additional aspects which are of interest to a wider range of stakeholders. The way in which local communities, the public in general, and a wide range of

other parties are engaged in dialogue about decommissioning of nuclear facilities is likely to become an increasingly important issue as the scale of the activity grows. The key to good stakeholder management is to maximize and develop the positive aspects and minimize the impact of the negative aspects, without undermining any group's confidence in the process.

Some important recommendations are related to implementer: establishing the confidence of the stakeholders and commitment of the management staff, development of operating policies around openness, transparency and stakeholder relations, access to knowledge of stakeholder engagement theory and process, either in-house or via contractual arrangements, ability to listen and communicate with stakeholders in non-technical language, honest attempt to engage with stakeholders at the beginning of the planning process, and to focus on the balance of cost and risk.

It is important to keep in mind that at any phase in the project, the community can call for a 'change of course' if they are dissatisfied with the site's cleanup process. This possibility may also concern far-off stakeholders who may feel impacted by the decommissioning project (e.g. shareholders who might feel adversely affected by high cleanup costs). In addition, at the site closure, the site will have to be turned over, often to the community. It is therefore important to get community buy-in throughout the cleanup process, so that there are no unexpected complaints at the end that would prevent this change of control from going through smoothly.

3.2 Environmental remediation

Four documents focused specifically on stakeholder participation in environmental remediation processes. They addressed various contexts, such as Uranium mining, NORM, post-accident recovery, or formulated recommendations with wider applicability. Two of these were published by IAEA, and two by OECD-NEA.

Stakeholders are generally viewed as "actors" having a *"specific interest (formally articulated or not) in the development of the project"* (IAEA-2014a).

Overall, values mentioned range include holistic approach, empowerment (helping people to take control over their lives), long term approaches conducive to sustainable development, right to be involved of affected people ("*democratic and moral right"*, IAEA 2014a), need to *"be sensitive"* to people's concerns (OECD-NEA, 2004); early engagement ; and joint problem solving (IAEA 2014a).

The objective of engagement is often linked to efficiency of the process (e.g. by bringing in specific knowledge), effectiveness, e.g. by obtaining support and acceptance of the project ("*prevent halt of the project"*, obtaining "social license" or optimising social and economic benefits (OECD-NEA 2023), or ensuring that solutions take into account social considerations (IAEA 2014b); consensus building, e.g. by "working toward common goals" – IAEA 2014a, or achieving "solutions that satisfy all parties", 2014b). In some cases, stakeholder involvement is seen to "prevent fear driven reactions" (IAEA-2014a) or "prevent difficulties in implementing technically sound remediation solutions" (2014a). Rationales like the latter reflect a broader misalignment between stakeholder involvement as a means to gain acceptance of what is considered to be a technically optimal solution and its potential role to contribute to better and more holistic solutions.

Various forms of involvement and related participatory methods to organise this in practice are mentioned, although the actual impact on actual decisions is less clear, particularly on the background of more instrumental rationales for involvement. The focus is often directed towards information, education and communication. Forms of involvement with potentially higher impact on decisions include for instance collaboration with civil society and community-based organisation or indigenous communities; or partnerships with host communities).

Recommendations formulated address points such as early engagement throughout the process; providing appropriate means to support participation (IAEA 2014a); providing financial support for stakeholders' participation in monitoring (OECD-NEA, 2004), establishing formal arrangements to ensure that involvement of affected people is "part of decision-making" (IAEA-2014 b); supporting and amplifying local, national and voluntary efforts (OECD-NEA 2004); collaboration with community-based organisations, companies, civil society and governments to create development plans (OECD-NEA 2022), or "cooperation among industry, federal and local governments, indigenous communities, local communities, and education and research" (OECD-NEA 2022) in adopting a policy framework that co-ordinates the specific project with a long-term vision.

In one document, cooperation with social science and humanities is specifically mentioned (IAEA 2014a), albeit the relevance is "to be determined."

3.3 Nuclear emergencies and post-accident recovery

A total of 4 identified documents presented recommendations for stakeholder engagement in the context of nuclear emergency preparedness and response. One document was authored by the OECD-NEA, while the three other projects reported on European projects (ENGAGE, SHAMISEN, CONFIDENCE).

None of the documents provide a general stakeholder definitions, but most seem to focus on a broad understanding of stakeholders, with actors in all five Helixes being mentioned and/or targeted. In the report from the CONFIDENCE project, emphasis is put mostly on universities and research centres, government agencies and public authorities.

In terms of values, the importance of early engagement in highlighted by the OECD NEA and in the confidence report, with the former also emphasizing the importance of specificity (adapted to local situation), flexibility and inclusivity. The report from the ENGAGE project puts focus on the significance of participation, motivation and commitment of all parties involved in order to improve emergency preparedness and response.

As reasons for engaging with stakeholders, the OECD NEA document mentioned how stakeholder engagement should not be perceived as an end in itself, but rather as a tool available to radiological protection professionals to enhance decision-making processes. In the SHAMISEN report, emphasis is put inter alia on how engagement with stakeholders should increase radiation knowledge among populations, without raising unnecessary concerns, but reference is also made to how affected populations have a right to participate in decisions that might affect them, and how engagement can lead to more effective and efficient risk management. In the ENGAGE report, it is mentioned how stakeholder engagement can foster decision-making processes in preparedness to and recovery from nuclear and radiological emergencies. Finally, the CONFIDENCE report mentions how stakeholder engagement contributes to identifying and addressing the issues and uncertainties arising in the

preparedness and management of the transition phase, and the report also aims to explore how to facilitate the incorporation of stakeholders' expertise, points of view and interests in the decision-making processes.

The OECD NEA report recommends as best practices for engaging with stakeholders the frequent engagement with the media and public, the inviting of media to the facility, the establishment of local information committees that include elected officials and activist groups, the development of pre-crafted messages that can address stakeholder issues in identified situations and scenarios, and the recruitment of expertise for future stakeholder involvement activities. Also, an all-hazards approach is recommended to engage stakeholders, in order to facilitate co-ordination and the sharing of experience and resources among all related emergency management activities. Finally, risk communications should be improved among radiological protection professionals and stakeholders (this is also in line with some of the recommendations made in the ENGAGE project). The SHAMISEN project argues that in EP&R, it is important to be transparent about the objectives and expected outcomes of all programmes and studies so that they are clear to the population. Also, the importance of rapid, transparent and coherent information in order to avoid misinformation and unnecessary anxiety are mentioned. In the ENGAGE report, the following recommendations are made: Provide repeated education / training on the basics of radiation and radiation protection culture to enhance efficiency and inclusiveness of all groups (NGOs, general public and journalists); Experts and other stakeholders should interact and cooperate through open networks. With a particular focus on EP&R in Spain, the report identifies –besides the above mentioned recommendations- room for improvement in terms of a better definition of the role of relevant authorities and stakeholders in EP&R, reducing the gap between theory and practice by working together on emergency plans and simplifying them, addressing the lack of 'continuity' of work performed at the local authority level due to rotation and possible changes that occur every four years (after political elections), addressing lack of motivation among some professional stakeholders to put efforts in EP&R due to plans to reduce nuclear power plants in Spain. Also, messages to the general public should also be concise and to the point, using reliable information channels. Finally, in the CONFIDENCE project, it was remarked how it is necessary to maintain an active network of stakeholders to assay the process of national dialogue and to be prepared for possible future nuclear emergencies.

3.4 Nuclear field

The majority of scrutinized nuclear articles addressed key aspects of nuclear energy, such as energy policy. However, a smaller subset developed topics like the Life Cycle of Nuclear Facilities, Generation IV reactors, or the siting of new NPPs. Most articles reflected an early or medium step in policy formation. Concerning stakeholders, some articles did not identify them, but among those that did, Helix 4 was the most frequently mentioned, followed by four and five, then three, and finally one.

Regarding underlying principles or values, various values were mentioned, but three - trust, transparency, and engagement - significantly outweighed others. The next closest included inclusivity, equality, accountability, and fairness. Some values were only mentioned once, yet it is noteworthy that they included flexibility, easily understandable information, credibility, independence, and effectivity.

Concerning objectives, diverse approaches were taken. Many aimed to provide recommendations for a better understanding of the behavioural attitudes of various stakeholders. One article sought to improve policy and decision-making processes in nuclear energy to better align with the needs and expectations

of society. Another focused on effective and understandable multilateral communication between the public and stakeholders. Enhancing public confidence was also an objective, with potential positive outcomes like expediting permit-granting procedures and increasing the acceptability of new power lines.

Recommendations on social, societal, and governance research emphasized aspects related to trust, reliable and independent assessment of nuclear safety during the life-time extension of operating NPPs, upgrading existing national energy concepts, strategies, and policies, as well as the reliable and independent assessment of investments. Communication was highlighted as a means to strengthen independence, confidence, prevent potential conflicts, and contribute to more effective communication by regulatory bodies in nuclear or radiological emergencies. Engaging stakeholders was seen as promoting the benefits of nuclear technology, explaining its risks or complexities, and considering the roles and inputs of all interested parties in the decision-making process.

Various forms of participation were suggested, such as deliberative processes, open dialogue, information sharing, or cooperation with stakeholders. The responsibility to act was attributed to regulatory institutions and authorities to enhance stakeholder engagement. Another article noted that decision-makers at each stage could vary depending on national legislation, regulations, and norms, with the national government usually serving as the primary decision-maker. Local authorities, although significant stakeholders, were often considered decision-makers in a subsequent phase. Responsibility for implementing recommendations was seen as resting with the political system, including decision-making bodies, ministries, regulators, and responsible institutions. Public stakeholders were recognized as influencing the process, and their integration of knowledge with policy and expert input facilitated accountability, transparency, and action for necessary changes. Another report stressed that every organization involved in a nuclear program - government, owner/operator, regulator - has a role in conducting effective stakeholder engagement activities throughout the life cycle of nuclear facilities.

3.5 Radiation protection

In the field of radiation protection, 9 documents have been identified and reviewed, with 5 documents from the period 2001 – 2006 and 4 more recent documents (2016 – 2021). 7 documents were produced in the context of activities of the OECD Nuclear Energy Agency, and 2 documents are the final deliverables of EURATOM funded international projects, namely the EAGLE Project (Enhancing Education Training and Communication Processes for Informed Behaviours and Decision-Making Related to Ionizing Radiation Risk) and the ENGAGE Project (Enhancing Stakeholder Participation in the Governance of Radiological Risks).

The field of radiation protection is broad and crosscuts the application fields in which one has to deal with the radiological risk in one way or another: nuclear energy R&D and policy, emergency preparedness & response, medical applications, Radon and NORM and industrial applications. As a consequence, the ‘type’ of stakeholders referred to in the documents may be either all relevant types or categories, depending on how they are ‘affected’ by the specific situation (citizens, industry & private sector, research, NGOs, political actors, regulators) or typical for the field as such (doctor, patient, … but also resident or inhabitant in the case of indoor Radon, …). In some cases, they are simply identified as ‘beneficiaries of radioprotection’ (with further specification: patients, workers, citizens, …). One

document remains vague about the type of stakeholders envisaged, but it clearly refers to national regulators and 'allied' experts.

Despite the difference between the various application fields (nuclear energy R&D and policy, emergency preparedness & response, medical applications, Radon and NORM and industrial applications), values driving stakeholder engagement refer to the same core values or (ethical) principles: informed consent / the right to co-decide on activities or situations that might negatively affect stakeholders, but also 'better knowledge generation'. In addition, values behind stakeholder engagement specifically mentioned are the care for democracy ('pluralistic, educated and democratic societies'; the need to address 'new developments in society regarding decision making, governance and engagement in radiation protection'; 'inclusiveness'; 'better public engagement'; 'focus on active involvement of stakeholders in the decision making process'; the importance of the act of participation, not only in influencing decisions but also in strengthening civic capacity and social capital; raising awareness of the linkages between public and private interests; developing a sense of justice; developing a sense of community). Other documents refer to specific responsibilities of mandatories (responsibility of institutions; obtaining and maintaining public trust; re-evaluation of current standards on ionising radiation exposure through the review and analysis of late scientific data to ensure level of protection is adequate; 'transparency'; 'trans disciplinarity').

Values and the 'why' of stakeholder engagement are obviously closely interrelated. Most often referred to is the need 'to better understand' the complexity of situations, including also the need to acquire new or better techno-scientific knowledge as the need to develop 'social knowledge' (risk perception, societal expectations and new evolutions, methods of stakeholder engagement). Other documents mention explicitly the improvement of stakeholder engagement as a mean to 'improve decision making' as such, next to the resolution of conflicts (as in post-accident situations) and trust-building in general. More specific, some documents mention the re-evaluation and improvement of the radiological protection system and the regulatory system (in particular the ICRP guidelines). The ENGAGE project mentions the need to understand and to develop recommendations for stakeholder engagement 'for all steps in policy formulations'.

Regarding the policy process caring for radiological protection, the 9 documents more or less focus on the policy step of what could be called 'anticipatory capacity building': agenda setting & problem formulation - focus on improving the method of democratic decision making.

Overall, recommendations with regard to stakeholder engagement in radiological protection don't differ much across the various application fields, in the sense that recommendations formulated in one document may be seen as applicable to other initiatives too: in general, a recognition of the importance of stakeholder engagement and its 'institutionalisation'; the importance of continuous monitoring of public concerns and perceptions; ensuring transparency of decision making; seeing risk communication as a continuous process ('that should evolve in an anticipated manner as society and stakeholders' needs and expectations evolve importance of continuous monitoring'). The ENGAGE report lists 14 recommendations in total but specifies according to the three application fields envisaged: 6 in EPR&R, 5 for Indoor radon and 3 for medical applications. Last but not least, one document states that 'Perhaps the clearest lesson […] is the need to foster mutual trust between the radiation protection community and society as a whole'.

3.6 RWM

In the field of radioactive waste management (RWM) together 18 documents have been reviewed, covering the period of from 2000 to 2023, developed by different organisations (like NEA, IAEA), resulting from the related EU projects (CIP, EURAD, bibliographical overview in EURATOM Research Framework Programmes), civil society associations (like NTW, Joint Project) and individual country specific workshops (like Finland).

In general, the analysed documents all reflect new approaches to the stakeholders' engagement in RWM after a period of failed site selection processes for RW repositories across the Europe, and broader, in 1990-ties. Some typical values in relation to stakeholders engagement, stated in reviewed documents, include principles like assurance of fairness, legitimacy, openness, accountability, effectiveness and coherence in the process, basic pillars of Aarhus convention (access to information, public participation and justice), empowerment of all stakeholders, in particular host municipalities, and provision of resources (which enable stakeholders to actively participate, including financial and knowledge resources). Dialogue and stakeholder involvement have become a central part of the radioactive waste management processes organised by responsible early and in iterative way for any new RWM facility.

Recommendations in the reviewed documents include issues related to decision-making process which should be designed to include a clear stepwise decision-making process identifying phases, milestones which provides sufficient time for the involved actors to ensure fairness of representation and to develop competence, roles for different levels of decision, and rules for assessing readiness to go to the next step, an institution tasked with helping the process move forward while guarding quality, mechanisms for involving the different levels and balancing their input, mechanisms for ratifying and validating decisions, including broad-based democratic expression. The right and opportunity for local citizens to express common concerns at upper decision levels, and to influence the relevant decisions with a specific plan for local engagement should be given (where it is recognised that national legal frameworks give the minimum opportunities that should be available, but RWM is likely to require a higher level). The availability of resources for such activities should be present including financial means and expertise. It is recommended that regular independent assessment of processes should be organised and implemented. Decision making should be performed through iterative processes, providing the flexibility to adapt to contextual changes. National legislative and administrative frameworks should be changed, if needed. Changes may also be needed to allow the adequate support regarding resources to make public participation possible in practice. A fair interplay between national state actors and public/local interests implies that the correct background conditions are developed by each state regarding allocation of resources and support. Also, compensation and benefit programmes for host community should be analysed and used, according to the national conditions and values.

4 General recommendations

Some general findings and recommendations can be seen across all fields which have been analysed. They are the following:

- There is a need for **early engagement of stakeholders throughout the process**: it is recommended to establish formal arrangements to ensure that involvement of affected (or interested) stakeholders is "part of decision-making", also through all steps of project, with

long-term vision. This is a task for governmental actors, however collaboration should be based on the values and expectations of the stakeholders.

- Various **forms of participation** were suggested: deliberative processes, open dialogue, information sharing, or cooperation with stakeholders.
- **Engagement with other groups of stakeholders** is also recommended, like NGOs or media, actively following activities which are related to the project.
- Providing **appropriate means to support participation and engagement** is required, providing financial support for stakeholders' participation in planning and implementation of the project.
- Very important factor presents **trust aspects**, with reliable and independent assessment of nuclear safety and radiation protection for any project. This also includes reliable and independent assessment of investments.
- It is important to be **transparent about the objectives, decisions taken and expected outcomes** of all programmes and studies so that they are clear to the population.
- To be in position to appropriately address the concerns it is important to **continuously monitor** public concerns and perceptions.
- National **legislative and administrative frameworks should be changed**, if needed. Changes may also be needed to allow the adequate support regarding resources to make public participation possible in practice.

There are also other recommendations for particular field of nuclear applications. They are given in the analyses in respected section above. It has to be mentioned also, that the analysed documents were quite different, even if they address the same field of interest.

5 Appendixes

5.1 List of documents

The list of documents used for the review are provided in the table below. Some documents were not analysed as they were out of scope (P1764_web IAEA, P1742_web IAEA, PUB1867_web IAEA, 6116-fsc-workshop-spain, NEA, 6000-evolution-sys-rp).

Number	Title
1.	Selection of decommissioning strategies: Issues and factors. Report by an expert group, IAEA-TECDOC-1478, 2005
2.	Stakeholder Involvement in Decommissioning Nuclear Facilities: International Lessons Learnt, OECD Nuclear Energy Agency, 2007
3.	An Overview of Stakeholder Involvement in Decommissioning. IAEA Nuclear Energy Series. No. NW-T-2.5, IAEA, 2009
4.	Stakeholder Participation in Radiological Decision Making: Processes and Implications. Case Studies for the Third Villigen Workshop (Villigen, Switzerland, 21–23 October 2003), The OECD Nuclear Energy Agency (NEA), 2004
5.	Remediation of Land Contaminated by Radioactive Material Residues. Summary Of An International Conference Organized By The International Atomic Energy Agency, Hosted By The Government Of Kazakhstan And Held In Astana, 18–22 May 2009, IAEA, Proceedings series, 2014
6.	Communication and Stakeholder Involvement in Environmental Remediation Projects. IAEA Nuclear Energy Series. No. NW-T-3.5, IAEA, 2014
7.	Maximising Uranium Mining's Social and Economic Benefits: A Guide for Stakeholders, OECD NEA, 2023
8.	Practices and Experience in Stakeholder Involvement for Post-nuclear Emergency Management, NUCLEAR ENERGY AGENCY, 2011
9.	Recommendations and procedures for preparedness and health surveillance of populations affected by a radiation accident, the SHAMISEN Consortium, 2017
10.	Stakeholder participation in nuclear and radiological emergency preparedness and recovery in Spain: benefits and challenges of working together, Article published in Journal of Radiological Protection regarding the ENGAGE project, 2020
11.	Stakeholder involvement through national panels and surveys to address the issues and uncertainties arising in the preparedness and management of the transition phase, CONFIDENCE project, 2020
12.	Society and Nuclear Energy: Towards a Better Understanding, Nuclear Energy Agency (NEA) and Organisation For Economic Co-Operation And Development (OECD), 2002
13.	Stakeholder involvement in nuclear issues, International Nuclear Safety Group, 2006
14.	Stakeholder Involvement Throughout the Life Cycle of Nuclear Facilities, IAEA NUCLEAR ENERGY SERIES PUBLICATIONS, 2011

15.	Recommendations on Transparency and Public Participation in the Context of Electricity Transmission Lines, Germanwatch, 2013
16.	Scenario 1: "Continuation with present activities and plans for commercial use of nuclear power", PLATENSO project, D4.1, 2014
17.	Scenario 2: "Phasing out nuclear power", PLATENSO project, D4.2, 2015
18.	Forming a research strategy, Scenario 3: A nuclear energy policy scenario based on Generation 4 reactors Proposal for ways to address social, societal and governance issues related to the ALLEGRO project, PLATENSO project, 2016
19.	Communication and Consultation with Interested Parties by the Regulatory Body. General Safety Guide No.GSG-6, International Atomic Energy Agency, 2017
20.	Principles for Effective Engagement, Work Package 5, Leader (UCLan), HoNEST project (History of Nuclear Energy and Society), 2017
21.	NEA Workshop on Stakeholder Involvement in Nuclear Decision Making, NEA no 7302, 2017
22.	Stakeholder Engagement in Nuclear Programmes, IAEA Nuclear Energy Series, No. NG-G-5.1, 2021
23.	Managing Siting Activities for Nuclear Power Plants, IAEA Nuclear Energy Series, No. NG-T-3.7 (Rev. 1), 2022
24.	Better Integration of Radiation Protection in Modern Society, Workshop Proceedings, Villigen, Switzerland, NEA, 2001
25.	Policy Issues in Radiological Protection Decision Making, Summary of the 2nd Villigen Workshop, NEA, 2001
26.	A New Approach to Authorisation in the Field of Radiological Protection (The Road Test Report), The OECD Nuclear Energy Agency (NEA), 2003
27.	Stakeholder Participation in Radiological Decision Making: Processes and Implications. Third Villigen Workshop Villigen, Switzerland 21-23 October 2003, The OECD Nuclear Energy Agency (NEA), 2004
28.	The Process of Regulatory Authorisation. A Report by the CRPPH Expert Group on the Regulatory Application of Authorisation (EGRA). NEA No. 5372, OECD – NUCLEAR ENERGY AGENCY, 2006
29.	Radioprotection Science and Application, OECD NEA, 2016
30.	Communication recommendation related to IR, Project EAGLE Project, 2016
31.	Enhancing Stakeholder Participation in the Governance of Radiological Risks, Findings and recommendations from the ENGAGE project, ENGAGE project, EJP CONCERT, D 9.94, 2020
32.	Towards a Shared Understanding of Radiological Risks: Summary Report of the NEA Stakeholder Involvement Workshop on Risk Communication, NEA, 2021
33.	STAKEHOLDER CONFIDENCE AND RADIOACTIVE WASTE DISPOSAL, Inauguration, First Workshop and Meeting of the NEA Forum on Stakeholder Confidence in the Area of Radioactive Waste Management, NEA, 2000

34.	Stepwise Decision Making in Finland for the Disposal of Spent Nuclear Fuel (Workshop Proceedings, Turku, Finland, 15-16 November 2001), The OECD Nuclear Energy Agency (NEA), 2002
35.	Dealing with Interests, Values and Knowledge in Managing Risk, Workshop Proceedings Brussels, Belgium 18-21 November, 2003
36.	Stakeholder Involvement Techniques. Short Guide and Annotated Bibliography, NEA, 2004
37.	Low and Intermediate Level Waste Repositories: Socioeconomic Aspects and Public Involvement. Proceedings of a workshop held in Vienna, 9–11 November 2005, IAEA-TECDOC-1553, 2007
38.	European-level Guidelines for the Inclusive Governance of Radioactive Waste Management, Project COWAM In Practice (CIP), 2010
39.	Geological Disposal of Radioactive Waste: National Commitment, Local and Regional Involvement. A Collective Statement of the OECD Nuclear Energy Agency Radioactive Waste Management Committee Adopted March 2012. NEA No. 7082, OECD – NUCLEAR ENERGY AGENCY, 2012
40.	Stakeholder Involvement in Decision Making: A Short Guide to Issues, Approaches and Resources, OECD NEA ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT – Nuclear Energy Agency, 2015
41.	Euratom projects, radioactive waste management and public participation: what have we learnt so far? A synthesis of principles, JRC Science and Policy, 2015
42.	Radioactive waste management and public participation in the EU: lessons learnt from the EURATOM Research Framework Programmes, International Journal for Nuclear Power, 2015
43.	The OECD Nuclear Energy Agency's Forum on Stakeholder Confidence, radioactive waste management and public participation. A synthesis of its learnings and guiding principles, Joint Research Centre. European Commission, 2015
44.	Stakeholder involvement in radioactive waste management decision making. Annotated Bibliography. Forum on Stakeholder Confidence (FSC), OECD/NEA, 2015
45.	Transparency in Radioactive Waste Management: A first report from the Nuclear Transparency Watch (NTW) BEPPER (Broad Framework for Effective Public Information and Participation in Environmental Decision-making in Radioactive Waste Management) project, NTW production, 2015
46.	Joint Project 2015 Radioactive waste and spent fuel – transparency and participation in national programmes, Joint Project, 2016
47.	International Conference on Geological Repositories 2016 NEA Conference Synthesis 7-9 December 2016 Paris, France, OECD NEA ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT – Nuclear Energy Agency, 2017
48.	The Forum on Stakeholder Confidence Report on Dialogue in the Long-Term Management of Radioactive Waste, NEA, 2021
49.	Communication and stakeholder involvement in radioactive waste disposal, International Atomic Energy Agency, 2022

50.	Implementation of ROUTES action plan second phase: Transparency in establishment of national radioactive waste facilities: Criteria for good transparency, national case studies and recommendations, WP ROUTES EURAD, D9.17, 2023

5.2 Data Collection Template

For the analyses of the documents the following data were collected in the template:

BIBLIOMETRIC INFORMATION
Information available in the database **1. Coder initials:** **2. Document Author(s):** **3. Document Title:** **4. Publication Year:** **5. Institution (if official document) or project name (full):** **6. Is it a review of recommendations:** Yes/No
CONTENT ANALYSIS
Information to be determined as part of the review process **1. Domain:** uranium mining, siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, general (energy policy development and adoption), other. **2. Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation **3. Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)
Information on: (provide page number and/or relevant quote where available) **4. Underlying principles or values (why?),** e.g. transparency, early engagement; **5. Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **6. Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; **7. Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; **8. How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)
Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

5.3 Reports per field

5.3.1 Decommissioning

BIBLIOMETRIC INFORMATION
Information available in the database 1. **Coder initials: CT** 2. **Document Author(s): IAEA** *3.* **Document Title:** Selection of decommissioning strategies: Issues and factors. *Report by an expert group* 4. **Publication Year: 2005** 5. **Institution (if official document) or project name (full): IAEA, IAEA-TECDOC-1478** 6. **Is it a review of recommendations:** No
CONTENT ANALYSIS
Information to be determined as part of the review process 1. **Domain:** uranium mining, siting (licensing) of new NPPs NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, general (energy policy development and adoption), other. 2. **Step in the policy formation (provide enough details):** planning stage 3. **Stakeholders:** talks about public
Information on: (provide page number and/or relevant quote where available) 4. **Underlying principles or values (why?):** openness, transparency, clarity towards all stakeholders, early engagement; all SH involved in strategy selection 5. **Objectives (with what purpose?):** to have a successful project; to gain public acceptance; because conclusions from a strategy selection process (not involving the public) are potentially open to challenge; reach a reasonable consensus; address relevant issues and concerns; identification and management of social issues. 6. **Form(s) of participation:** public meetings; discussions dialogue. 7. **Who has the responsibility to act (and can influence the uptake of recommendations)** ; 8. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)
Additional information 9. **Final comments:** as with other IAEA docs, sometimes contradictory or fuzzy. Confusing because at some point talks about dialogue with public but then says that a workshop with a panel of experts (!) is a promising way forward.

BIBLIOMETRIC INFORMATION
Information available in the database 1. **Coder initials:** AL

2. **Document Author(s):** not mentioned
3. **Document Title:** Stakeholder Involvement in Decommissioning Nuclear Facilities: International Lessons Learnt
4. **Publication Year:** 2007
5. **Institution (if official document) or project name (full):** OECD Nuclear Energy Agency
6. **Is it a review of recommendations:** Yes

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** decommissioning
2. **Step in the policy formation (provide enough details):**

a. medium: decision of option; late: policy implementation, policy evaluation

3. **Stakeholders:**

a. Helix 2: the economic system; nuclear industry;

b. Helix 3: the natural environment; environmental interest groups;

c. Helix 4: the media-based and culture-based public; media, local communities

d. Helix 5: regulator, (local and national) government agencies, politicians.

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?) three Pillars of Trust – safety, participation and local development

5. Objectives (with what purpose?) gain public trust

6. Form(s) of participation "dialogue and co-operation among regulators, implementers, and local stakeholders as early as practicable" (p.7-8), Partnership arrangements between institutions and local communities

7. Who has the responsibility to act (and can influence the uptake of recommendations) nuclear regulator and local/national authorities

8. How to implement it? Different contexts may require different approaches; flexibility is required

Additional information

9. **Final comments:** /

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title:** An Overview of Stakeholder Involvement in Decommissioning. IAEA Nuclear Energy Series. No. NW-T-2.5.
4. **Publication Year:** 2009
5. **Institution (if official document) or project name (full): IAEA**
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** decommissioning.
2. **Step in the policy formation (provide enough details):**

3. Stakeholders:

Several categorisations of stakeholders are described, based on some other documents. In general the 5 helices are covered. NGOs and pro- or anti-nuclear groups are grouped under „pressure groups". One categorisation of stakeholders that is referred to is: economic, technical, environmental, and social. Some SSH disciplines are mentioned under „social": archeology, history; however, research is only mentioned under „technical".

The categorisation proposed is similar to Pub 1629: implementers, regulators, cooperating or co-interested, affected (eg public, local communities, arecheologists (?), historians (?), media,..).

Future generations also mentioned as a stakeholder.

The group „Others" includes notably facilitators.

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, early engagement;

Because of **changes in society's decision making environment and heightened public sensitivity** to all matters connected with environmental protection, nuclear power, radioactivity, and especially radioactive waste, any decision regarding whether, when and how to implement waste management solutions will typically require thorough public examination and the involvement of many relevant stakeholders. .... Because of the extent of the modifications introduced at a site and because of their implications for waste management activities, the decommissioning of nuclear facilities is fully subject to considerations mentioned above. Decommissioning also includes additional aspects which are of interest to a wider range of stakeholders. The way in which local communities, the public in general, and a wide range of other parties are engaged in dialogue about decommissioning of nuclear facilities is likely to become an increasingly important issue as the scale of the activity grows.

Various reasons for involvement mentioned in connection with various stakeholders, eg plant staff because they have greater knowledge of the plant and its operational history, and because of the cultural changes needed; environmental authorities to pave the way to a **timely and cost effective transition**, pressure groups because they often represent a membership or community of interest that provides them with **legitimacy and an accountability structure.**

Early engagement is mentioned.

The doc also refers and describes the Aarhus Convention.

It is important to keep in mind that at any phase in the project, the **community can call for a 'change of course' if they are dissatisfied** with the site's cleanup process. This possibility may also concern far-off stakeholders who may feel impacted by the decommissioning project (e.g. shareholders who might feel adversely affected by high cleanup costs). In addition, at the site closure, the site will have to be turned over, often to the community. It is therefore important to **get community buy-in throughout the cleanup process**, so that there are **no unexpected complaints at the end that would prevent this change of control from going through smoothly.**

The end of a nuclear facility's mission and its transition to decommissioning can create substantial hardship on nearby communities, particularly in the case of major facilities built at a distance from large metropolitan areas. [..]. Eliminating permanent staff during plant closings can result in significant negative economic effects, although a temporary local economic upturn is possible as specialized contractors, managers and labourers move to the area for lengthy decommissioning activities. Because of these financial impacts, **local community opinion could range from neutral to negative initially**, even if shutdown was announced well in advance.

Native people: native peoples may also have legal rights that need to be taken into account when planning a significant change in site status, e.g. initiating decommissioning.

ARCHAEOLOGISTS, HISTORIANS, MUSEUMS, ARCHIVES: because in recent years, growing awareness has developed of the need to partly preserve industrial sites as cultural heritage. Institutions and opinion groups might express a desire for the preservation of some buildings and components of a decommissioned facility.

Outcomes should be:

— Empowerment of affected individuals and groups;

— Conditions for mutual respect and trust;

— Practical decisions and strategies, flexible and open to revision;

— Recognition as legitimate and fair;

— Feedback on contributions.

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

„Timely stakeholder involvement may **enhance safety and 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. Experience in many countries has shown that transparency can be an extremely effective tool to enhance safety performance.“

Various:

To pave the way to **a timely and cost effective transition**, it is important that the **environmental (non-nuclear) authorities** be involved at an early stage before or during the decommissioning process, for example be involved in the development of site clearance criteria as appropriate and in a timely fashion. It is also important that environmental authorities be consulted on planned uses of the site for new industrial or recreational activities in order to **minimize their approval time**.

Labour unions: to prevent strikes.

Local communities: to reach consensus.

Succesful engagement is expected to:

— Enhance the project’s ability to deliver within time, cost and performance by providing a unified vision of risks, plans and developments.

— Provide improved opportunities for innovation and ideas. Note – this may not happen if the stakeholders are not engaged early enough or have not been convinced

of technology demonstrations/underpinning/R&D/debates [162].

— Provide better identification and mitigation of risks which enables an improved risk management process to be implemented.

— Reduce costly delays to projects by avoiding and effectively resolving conflicts between interested parties.

Many **contested issues can be resolved** if decision makers demonstrate that they function with a sincere consideration for the concerns of others. It is a maxim in public participation that if stakeholders perceive the process to be **fair**, they will be **more likely to accept the results.**

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

Several examples are given from real cases but no recommendation.

A stakeholder engagement process is not a one way street and will provide feedback to the

decommissioning organization on performance, profile and personnel. The decommissioning organization needs to have the mechanisms in place to respond to this with integrity.

An earnest effort must be made to **listen and respond to the concerns of all stakeholders**, thereby requiring informed and empowered facility representation.

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

Not clear.

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

Operational readiness: Key areas for consideration are;

— Top management sign up and involvement: This is seen as a key element in establishing the confidence of the stakeholders and commitment of the management staff [168];

— Development of operating policies around openness, transparency and stakeholder relations; — -- The whole company has to be behind the engagement process, so that if and when stakeholders meet company employees they receive the same message and witness the same open and transparent behaviour;

— Access to knowledge of stakeholder engagement theory and process, either in-house or via contractual arrangements;

— Staff with good 'people skills' with the ability to listen and communicate with stakeholders in non technical language;

— Managers must make an honest attempt to engage participation at the beginning of the planning process, and to focus on the balance of cost and risk

Planning: Ideally early engagement of stakeholders enables them to be involved in the development of the stakeholder management plan. This creates a sense of ownership of the process, which is understood by all the stakeholders and should be widely disseminated. The planning process should also address the financial and legal issues around stakeholder engagement:

who will benefit and what opportunities may arise.

Stakeholder relations: Early analysis of which stakeholders should be involved is essential. Try to ensure that all stakeholders are considered.

Other recomm:

-Openness and transparency

- Develop effective process

-Evaluate

Additional information

9. Final comments: additional points that the coder finds interesting, good to share.

The key to good stakeholder management is to maximize and develop the

positive aspects and minimize the impact of the negative aspects, without undermining any group's confidence in the process.

There are lot of recommendations on who stakeholders are, and what their influence / interest is.

5.3.2 Environmental remediation

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** PM
2. **Document Author(s):** Note by PM – this is a compilation of three case studies by three different authors
3. **Document Title:** Stakeholder Participation in Radiological Decision Making: Processes and Implications. Case Studies for the Third Villigen Workshop (Villigen, Switzerland, 21–23 October 2003)
4. **Publication Year:** 2004
5. **Institution (if official document) or project name (full):** The OECD Nuclear Energy Agency (NEA)
6. **Is it a review of recommendations:** ~~Yes~~/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** uranium mining, , ~~siting (licensing) of new NPPs NPP Life Time Extension, nuclear emergencies and~~ post-accident recovery (incl. environmental remediation), ~~siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, general (energy policy development and adoption),~~ other - *The Rocky Flats Controversy On Radionuclide Soil Action Levels*
2. **Step in the policy formation (provide enough details):** Note by PM – this is different for each of the three case studies (each of which exists in rather very specific context).
3. **Stakeholders:** Note by PM – the 3 case studies each concern different types of stakeholders which are mentioned in specific ways (different groupings than the helixes in the template of this report sheet).

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), Note by PM – different in each of the 3 case studies. The Canadian case mentioned that *Financial support must be made available to cover the costs incurred by local stakeholders in taking part in monitoring activities (*p. 99).The Chernobyl case study mentioned that some *guiding principles* were reported as *still rather abstract* (p. 40), and referred to *the principal themes of the Strategy for Recovery recently produced by the UN (UNDP/UNICEF 2001)* and these *Five key principles underlie the approach recommended in this strategy: 1. An holistic approach; 2. Aim to help individuals take control of their lives; 3. Allocate resources according to need to ensure efficiench; 4. Aim for change that is sustainable and long-term and based on a developmental approach; and 5. International efforts must support and amplify local, national and voluntary efforts (2001, 3) (*p. 53). The Canadian case mentioned, among other, the

principle that *Financial support must be made available to cover the costs incurred by local stakeholders in taking part in monitoring activities(*p. 99).

5. Objectives (with what purpose?), *The NEA Committee on Radiation Protection and Public Health (CRPPH) has explored the details and implications of stakeholder involvement in decision-making processes over several years. The roots of this interest are found in the Committee's 1994 Collective Opinion, Radiation Protection Today and Tomorrow* (p. 3). … The 3rd Villigen Workshop addressed the issues listed on p. 3-4, with the aims *objectives* to Identify *the benefits and pitfalls of stakeholder involvement; ? Identify generically applicable lessons and experience that can be of use to the NEA member countries in their own decision-making processes involving stakeholders; and Identify the policy-level implications of stakeholder participation in radiological protection decision making.*

6. Form(s) of participation, Note by PM – different in each of the 3 case studies;

7. Who has the responsibility to act (and can influence the uptake of recommendations) Note by PM – different in each of the 3 case studies.

8. How to implement it? Note by PM – different in each of the 3 case studies.

Additional information

9. **Final comments: -** the case studies were I. *The Rocky Flats Controversy On Radionuclide Soil Action Levels,* II. *The Canadian Review Process For Uranium Production Projects In Northern Saskatchewan*, and III. *The ETHOS Project For Post-Accident Rehabilitation In The Area Of Belarus Contaminated By The Chernobyl Disaster*

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title:** Remediation of Land Contaminated by Radioactive Material Residues. S*ummary Of An International Conference Organized By The International Atomic Energy Agency, Hosted By The Government Of Kazakhstan And Held In Astana, 18–22 May 2009*
4. **Publication Year: 2014**
5. **Institution (if official document) or project name (full): IAEA**, Proceedings series.
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** remediating areas contaminated by radioactive materials — with **special emphasis on areas affected by former uranium mining and milling activities.**.
2. **Step in the policy formation (provide enough details): ?**
3. **Stakeholders:** special focus on local population, concerned public

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?): because local populations are affected, they must be part of the decision-making process; effective (?) involvement; be sensitive to people's concerns;

5. Objectives (with what purpose: reach solutions that satisfy all parties; choose solutions that take into account social considerations such as maintaining wellbeing of people and securing employment.

6. Form(s) of participation, ?;

7. Who has the responsibility to act (and can influence the uptake of recommendations): ? does not say but refers to formal arrangements;
8. How to implement it? Formal arrangements must be established to ensure that involvement of concerned (affected) public is part of decision-making

Additional information
9. Final comments: based on intro, summary and conclusions

BIBLIOMETRIC INFORMATION

Information available in the database
1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title:** Communication and Stakeholder Involvement in Environmental Remediation Projects. IAEA Nuclear Energy Series. No. NW-T-3.5
4. **Publication Year:** 2014
5. **Institution (if official document) or project name (full): IAEA, International Atomic Energy Agency**
6. **Is it a review of recommendations: N**o

CONTENT ANALYSIS

Information to be determined as part of the review process
1. **Domain:** environmental remediation.
2. **Step in the policy formation (provide enough details):**
   - Not elaborated
3. **Stakeholders:** "actors with a specific interest (formally articulated or not) in the development of the project".

   Stakeholder groups identified: **implementers** of the ER process (Site/facility owners, funding entities, operations staff, managers); **regulators** (Regulators, institutions, local authorities); those **cooperating or directly influencing the ER process** (Local communities, trade unions, waste managers, real estate owners, local enterprises, international parties, contractors, nuclear industry, non-nuclear industry, non-governmental organizations); those **affected or indirectly influencing the ER process** (General public, neighbouring countries, tribal nations, researchers and scientists, teachers and students, universities, tourists, archaeologists, historians, museums, archives, media, health workers, pressure groups, religious or secular groups).

   It is mentioned that the relevance of these stakeholders „in a specific situation needs to be carefully determined."

Information on: (provide page number and/or relevant quote where available)
4. **Underlying principles or values (why?),** e.g. transparency, early engagement;

early engagement
- Empowerment: Affected people **need to feel they have some form of control** over how others affect their environment and well being.
- Democratization: The public and affected people have a **democratic and moral right** to take part in decisions that affect their lives.

- Efficiency: All stakeholders, including the public, have **important knowledge of relevance** to the decision making process and can input a range of issues that might otherwise be overlooked, undervalued or underutilized.
- Success: The public has the capacity to **halt many projects**, so the policy implementer should acknowledge the needs and desires of these people.
- Consensus building: All people involved in a project should be able to work towards common goals if there is a process whereby these **common goals can be identified**.
- A general recommendation is to involve them from a very early point in the process.

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

- Prevent difficulties in in implementing technically sound remediation solutions: *„whilst stakeholder participation itself does not always guarantee success, lack of participation may contribute to difficulties in implementing technically sound remediation solutions.“*
- *Involvement of affected or interested persons can **prevent fear driven reactions**, which potentially damage public response and create **undue expectations or unnecessary anxiety.***
- „solve the problem together“.

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

- Involvement= involvement of key individuals and organizations in strategic decisions in a remediation project. This involvement may be the simple exchange of information described above, or it may lie on a spectrum of deeper involvement. However, in all these cases, a dialogue is an absolute precondition for the various actors to be able to solve the problem together.
- Several levels of involvement are descvribed but not specifically recommended (cf. Health Canada typology);
- „Most of the time, the authorities will be the main information providers and educators for the rest of the stakeholders. As the stakeholders become more involved in the process, their views and opinions will become a more central part of it, in some cases, achieving full partnership in the decision making process“.
- In the chapter on STRATEGIES FOR STAKEHOLDER INVOLVEMENT, three forms are described in detail, which are mostly focused on communication and gathering information: public hearings, focus groups and social media relations

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

Not clearly specified.

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

- providing the appropriate means to involve stakeholders in ER projects is an essential element for the success of these programmes;

Additional information

9. Final comments: the doc is much more detailed on communication than other forms of engagement, although it does provide examples and discusses their advantages and disadvantages.

BIBLIOMETRIC INFORMATION
Information available in the database **1. Coder initials: FA** **2. Document Author(s): OECD NEA**

3. **Document Title: Maximising Uranium Mining's Social and Economic Benefits: A Guide for Stakeholders**
4. **Publication Year: 2023**
5. **Institution (if official document) or project name (full): OECD NEA**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** uranium mining.
2. **Step in the policy formation (provide enough details):**

early: agenda setting (incl. research agenda), problem formulation;

medium: consideration of options, decision of option;

late: policy implementation, policy evaluation.

The document mostly focuses on problem formulation and the recommendation of policy options.

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Here stakeholders are defined as belonging to helix 2, 3, 4 and 5:

p. 16: '*A stakeholder in the context of uranium mining is generally an individual or group that has a specific interest in the industry and the decisions made – whether they be social, economic or environmental, or related to public safety. […]Stakeholders may also be defined as statutory or non-statutory to identify organisations and bodies that are required by national law or policy to be involved in the planning, development or operational activities of a uranium mine, including those that will be affected directly or indirectly by the mine*.'

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** e.g. transparency, early engagement;

Early engagement – Stakeholders engagement aims at responding to stakeholders requirements at all steps of the mine life cycle, from early planning to remediation and land rehabilitation (p.17)

5. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning;

To obtain social license to operate and optimise socio-economic benefits. (p.16)

6. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships;

Surveys, public hearings, interviews and facilitated focus- group meetings, early partnerships with host population.

Moreover: '*As local regulations may differ from international leading practice, it is important for communities to be involved in commenting on regulatory applications when appropriate so that their voices may be heard*' (p.16)

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry; Political actors, e.g., to adopt adequate national uranium mining regulatory system; the uranium mining industry, e.g., to support workforce training and education. **8. How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The document gives key recommendations (see p. 13) but does not give a step-by-step approach for their realisation. The recommendation focuses more on the infrastructural needs (e.g., creation of a relevant curricula in education and research institutions) in broad terms, leaving the choice of a way forward to interested countries.
Additional information ***9.*** **Final comments:** additional points that the coder finds interesting, good to share. Although the document goes to lengths in the introduction on the importance of stakeholders engagement to maximise socio-economic benefits in uranium mining projects, this very same engagement is given little weigh in the formulation of recommendation. All recommendations are directed at maximising economic aspects, while social benefits are also understood in economic terms (e.g. job creation, tax and royalties to fund healthcare). Other key social aspects, such as land use, environmental degradation, cultural loss, or conflicting industrial inspirations (e.g. mining vs traditional activities like agriculture) are here not considered.

5.3.3 EP&R

BIBLIOMETRIC INFORMATION
Information available in the database **1. Coder initials:** LG **2. Document Author(s):** ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD) 3. **Document Title:** Practices and Experience in Stakeholder Involvement for Post-nuclear Emergency Management **4. Publication Year:** 2011 5. **Institution (if official document) or project name (full):** NUCLEAR ENERGY AGENCY **6. Is it a review of recommendations:** Yes/**No**
CONTENT ANALYSIS
Information to be determined as part of the review process **1. Domain:** • uranium mining, • siting (licensing) of new NPPs • NPP Life Time Extension, • nuclear emergencies and post-accident recovery (incl. environmental remediation), • siting (licensing) of waste repositories, • radioactive waste management (storage, treatment & conditioning), • decommissioning, • general (energy policy development and adoption),

- other: ……..

2. Step in the policy formation (provide enough details):

- early: agenda setting (incl. research agenda), problem formulation;

"Preparedness for stakeholder involvement is the top priority. Performing the necessary "due diligence" in the early stages of emergency preparedness, prior to the accident, will vastly improve post-emergency communications. Greater emphasis should be placed on planning for recovery and rehabilitation, or long-term nuclear emergency management, during emergency preparedness activities. " (p. 16)

"It is far better to involve stakeholders in exercises and determine mutually agreeable actions in support of their issues early in the planning process, than to attempt to deal with stakeholders in the midst of a crisis. " (p. 22).

- medium: consideration of options, decision of option;

"Radiological protection professionals should also identify and work with decision makers who must take decisions based upon "societal" input to determine how the profession can best assist them in their decision-making processes. " (p. 8). "Open a long-term dialogue with these decision makers to establish a mutual learning environment that creates a relationship based upon mutual trust" (p. 20)

- late: policy implementation, policy evaluation

"The involvement of a range of governmental and non-governmental stakeholders presents opportunities for better identifying and implementing sustainable approaches to longer-term recovery. " (p. 7)

"Make greater use of the ISO 13 000 Risk Management Standard (ISO, 2002)... to facilitate more effective communication among all stakeholders, in particular for post-nuclear emergency management into recovery and rehabilitation. " (p. 23)

3. **Stakeholders:**

"The multi-disciplinary team approach to planning and addressing these situations would benefit from the clear identification of the roles and responsibilities of the various professionals required (e.g. medical; business; local, regional and national governments/authorities; clerical; education) in particular as they pertain to the long-term recovery and rehabilitation phases of an accident. " (p. 21)

- Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
- Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
- Helix 3: the natural environment, e.g. environmental NGOs;
- Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
- Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?),

Early and frequent engagement

"Planning for stakeholder involvement is a top priority."(p. 16)

"There is a need for organisations to build relationships with their local populations as a

"member of the community", and not to simply leave this to the legal, public relations or other staff, but to involve everyone in the organisation including top management " (p. 17)

Flexible and adaptable:

"Planning for the conduct of management operations during recovery and rehabilitation needs to be flexible and able to adapt to changing conditions over time. Management during the recovery phase also needs to be sufficiently flexible to account for the diverse needs of different affected groups " (p. 16)

"Takes patience, commitment and resources " (p. 13)

Inclusive:

"successful stakeholder involvement projects are as open and inclusive as possible " (p. 15)

Specific

"each stakeholder involvement activity is unique and addresses specific, local situations" (p. 15)

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

The main objective: to identify areas for enhancing stakeholder involvement in post-emergency management.

6. Form(s) of participation

- Inform and educate
- Involve and engage
- Collaborate

7. Who has the responsibility to act (and can influence the uptake of recommendations)

Radiological protection professionals

Stakeholder involvement requires a broad mix of stakeholders, including governmental participation from all levels.

Public-private partnerships can be very effective, but require trust, commitment, resources and political leadership;

8. How to implement it?

Planning should include the appropriate outreach options to address the spectrum of stakeholders involved. To investigate the appropriate use of blogs, social media, webcasts and other electronic means that have become very popular to efficiently inform and involve stakeholders.

Best practices for engaging with stakeholders: (p. 17)

• frequent engagement with the media and public;

• in co-ordination with the licensee, inviting media to the facility;

• establishment of local information committees that include elected officials and activist groups;

• development of pre-crafted messages that can address stakeholder issues in identified situations and scenarios;

• recruiting expertise for future stakeholder involvement activities

Stakeholder involvement in emergency exercises: (p. 19)

To make the stakeholder involvement process in nuclear and radiological emergency response planning more meaningful to stakeholders, workshop it recommend the use of an all-hazards approach to engage stakeholders. This approach facilitates co-ordination and the sharing of experience and resources among all related emergency management activities

- the roles of the stakeholders in the planning process need to be identified and

mutually agreed upon;

- the outcomes of the planning and exercises need to be communicated and discussed with the stakeholders with clear recognition of the latter's contribution; and
- lessons learnt are collected and shared with stakeholders to build interest, involvement and ownership

To improve risk communications among radiological protection professionals and stakeholders: (p. 15)

• people want to know that you care before they care about what you know;

• in stressful situations, people have difficulty hearing, understanding and remembering information;

• people trust those who are willing to acknowledge the importance of uncertainty;

• to address these "truths", it is necessary to focus messages in stressful situations, such as those in emergency situations, to 3 specific points, expressed in 9 seconds and in 27 words or less;

• "message maps", aimed at a 6th-grade level, can be an effective tool to enhance risk communication

Establish a web-based repository for the collection of lessons learnt, best practices, tools and training materials in stakeholder involvement, not only helps avoid repeating mistakes, but also provides stakeholders with the knowledge that such programmes provide value added direction in the formulation and execution of future emergency planning and response programmes.

Additional information

9. **Final comments:**

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** PM
2. **Document Author(s):** Deborah Oughton, Viviana Albani, Francesc Barquinero, Vadim Chumak, Enora Clero, Pascal Crouail, Paola Fattibene, Ausrele Kesminiene, Dominique Laurier, Liudmila Liutsko, Takashi Ohba, Evgenia Ostroumova, Philippe Pirard, Agnès Rogel, Adelaida Sarukhan, Thierry Schneider, Koichi Tanigawa, Evgenia Tomkiv, Luke Vale, Elisabeth Cardis - on behalf of the SHAMISEN Consortium.

3. **Document Title:** Recommendations and procedures for preparedness and health surveillance of populations affected by a radiation accident
4. **Publication Year:** 2017
5. **Institution (if official document) or project name (full):** the SHAMISEN Consortium
6. **Is it a review of recommendations:** **Yes**/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** ~~uranium mining, , siting (licensing) of new NPPs NPP Life Time Extension,~~ nuclear emergencies and post-accident recovery (incl. environmental remediation),~~ siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, general (energy policy development and adoption), other.~~
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation *Preparedness phase*; medium: consideration of options, decision of option; ~~late: policy implementation, policy evaluation,~~ *Communication and Training*
3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media (*media contacts, journalists, journalist associations*); Helix 5: the political system, e.g. regulator, government agencies, politicians (*central government*). Or Other *Health agencies, health professionals, radiation protection experts, Epidemiologists, ethics committees)*

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?):** *The novelty of the recommendations is the holistic approach that can help optimise decision-making processes in case of an emergency situation due to a nuclear accident, and to improve emergency preparedness in advance planning* (source: https://doi.org/10.1016/j.envint.2020.106278);
2. **Objectives (with what purpose?):** *The SHAMISEN Recommendations are a first step that could be further developed regarding more specific issues related to post-accidental recovery, for example, creating guidelines for protocols on dosimetry assessment, health follow-up and launching of epidemiological studies* (source: https://doi.org/10.1016/j.envint.2020.106278);
3. **Form(s) of participation:** *It is important to be transparent about the objectives and expected outcomes of all programmes and studies so that they are clear to the population* (p. 10); *…the need for rapid, transparent and coherent information in order to avoid misinformation and unnecessary anxiety* (p. 15) *Foster participation of stakeholders and communities by engaging them in emergency preparedness* (p. 22);
4. **Who has the responsibility to act (and can influence the uptake of recommendations):** a different set of actors, mainly the political actors (incl. relevant local authorities in areas hosting nuclear installations) and public agencies (health/epidemiologic agencies).
5. **How to implement it?** The SHAMISHEN results/recommendations *are being used for translational work at the local level, including workshops with relevant stakeholders in Spain (Liutsko et al., 2020) and elsewhere (Geysman et al., 2020), and the preparation and realization of new projects that further develop specific issues. … Further work is needed to translate the SHAMISEN Recommendations at local, regional, national and European and international levels, to ensure accident response is no longer mainly based on technological*

factors or in creating common or linked EU digital health registries that could take into account the increased mobility of people across countries (source: https://doi.org/10.1016/j.envint.2020.106278)

Additional information

6. **Final comments:** "*The SHAMISEN project developed a total of 28 recommendations. They include general recommendations, applicable across all phases of an accident, and specific recommendations for each of the three main phases: preparedness, early and intermediate, and long-term recovery. The recommendations are subdivided by topic: health surveillance, epidemiological studies, dose reconstruction, evacuation, and training of and communication with health personnel and other actors involved in liaising with affected populations. Each recommendation is divided into 3 sections - why, how and who - thus providing background and concrete advice as to how each SHAMISEN recommendation should be implemented and by whom.*

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** LG
2. **Document Author(s):** Liutsko et al.
3. **Document Title:** Stakeholder participation in nuclear and radiological emergency preparedness and recovery in Spain: benefits and challenges of working together
4. **Publication Year:** 2020
5. **Institution (if official document) or project name (full):** Article published in Journal of Radiological Protection regarding the ENGAGE project.
6. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),
   - other: ……..
2. **Step in the policy formation (provide enough details):**
   - early: agenda setting (incl. research agenda), problem formulation;
   - medium: consideration of options, decision of option;

     The article refers to different research activities, both at European and national level, which have addressed the development, improvement and application of

     methods (including stakeholder engagement), to strengthen preparedness for post-accident management and recovery. The authors identified a number of challenges and issues to be improved
   - late: policy implementation, policy evaluation
3. **Stakeholders:**

- Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
- Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
- Helix 3: the natural environment, e.g. environmental NGOs;
- Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
- Helix 5: the political system, e.g. regulator, government agencies, politicians.
- Other: First-line responders including the police, military, firefighters and health workers

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, efficiency and inclusiveness of all groups.

"The improvements in emergency preparedness and response mainly depend on the participation, motivation and commitment of all parties involved" (p. N3)

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

Research institutions in different European countries have undertaken efforts to bring together different stakeholders in the framework of international research projects with the aim of fostering decision-making processes in preparedness to and recovery from nuclear and radiological emergencies.

This article shows remaining barriers, examples of good practices in radiation protection, as well as recommendations for improving nuclear and radiological emergency preparedness in Spain. It may be useful for other countries.

6. Form(s) of participation

- The involvement of stakeholders is crucial to improving nuclear and radiological emergency preparedness
- Provide more adequate and transparent communication between different stakeholder
- Provide education / training on the basics of radiation and radiation protection culture to enhance efficiency and inclusiveness of all groups (NGOs, general public and journalists).
- Experts and other stakeholders should interact and cooperate through open networks.

7. Who has the responsibility to act (and can influence the uptake of recommendations)

This study describes the role of different research institutions (such as CIEMAT, UPM and ISGlobal) and the Spanish Society for Radiation Protection (SEPR) in bringing stakeholders in Spain to discuss Emergency preparedness and response (EP&R) to radiological or nuclear accidents. However, the actor responsible or with influence for the implementation of such recommendations is not specified.

8. How to implement it?

- Communication and coordination between relevant actors,
- Participation of the public in the Emergency preparedness and response

- Maintaining public trust in different actors and institutions,
- Ensuring an optimal human health surveillance
- Promote not only the transfer of new knowledge originated by EU and national projects, but also to the establishment of personal interactions between those need to work together in case of an accident.

Challenges and points of improvement for stakeholders' participation in EP&R in Spain:

- Better definition of the role of relevant authorities and stakeholders in case of a nuclear emergency.
- Improve the networking between relevant stakeholders including the general public, NGOs and journalists or mass media agents.
- Provide more adequate and transparent communication between different stakeholder groups to reduce misinformation.
- Prepare communication and provide education / training on the basics of radiation and radiation protection culture to enhance efficiency and inclusiveness of all groups (NGOs, general public and journalists).
- Reduce the gap between theory and practice by working together on emergency plans and simplifying them, with a clear priority for human lives. Priorities should be clear and the documents.
- Shortened to allow timely action in an emergency.
- Address lack of 'continuity' of work performed at the local authority level due to rotation and possible changes that occur every four years (after political elections).
- Consider demotivation of the general public in issues related to EP&R radiation due to the lack of knowledge on radiation and its risks.
- Address lack of motivation among some professional stakeholders to put efforts in EP&R due to plans to reduce nuclear power plants in Spain.
- Training in radiological protection among other professionals involved in emergencies is sufficient in theory, but in practice there is a lack of motivation and resources.

Good practices and benefits of stakeholders' joint work:

- Provide reliable channels of information and alert on possible false sources or misconduct in providing information.
- Concise and clear messages (involving a careful selection of what should be transmitted and how) when working with the public is a good practice.
- Training courses and information addressed to all first responders (firemen, health workers, civil protection, environmental agencies), with 2–3 editions per year, was considered beneficial.

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** RS (CIEMAT)
2. **Document Author(s):** Montero et al.
3. **Document Title:** Stakeholder involvement through national panels and surveys to address the issues and uncertainties arising in the preparedness and management of the transition phase.
4. **Publication Year:** 2020

5. Institution (if official document) or project name (full): CONFIDENCE project
6. Is it a review of recommendations: No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** nuclear emergencies and post-accident recovery (incl. environmental remediation)
2. **Step in the policy formation (provide enough details):** early: agenda setting, problem formulation. The paper tries a participative methodology to involve stakeholders regarding the transition phase, in order to demonstrate its utility in the agenda setting.
3. **Stakeholders:**

   Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;

   Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;

   Helix 3: the natural environment, e.g. environmental NGOs;

   Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;

   Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other (public authorities)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?):** early engagement: improving the preparedness and response during the transition phase after a nuclear accident. "Stakeholder engagement is essential in the preparedness, response and recovery phase of a nuclear or radiological emergency" (S113).
2. **Objectives (with what purpose?)**
   - To identify and address the issues and uncertainties arising in the preparedness and management of the transition phase and to explore ways to facilitate the incorporation of stakeholders' expertise, points of view and interests in the decision-making processes (S129)
   - Stakeholder panels: to understand the transition phase (S128);
     - to follow the timeline and the challenges in the decision making process, including the decisions taken in the early phase of the emergency;
     - to identify the critical aspects in the preparedness and response for the recovery;
     - to draft an approach to deal with the uncertainties arisen in the transition phase;
     - to prepare plans for the subsequent recovery, and;
     - to explore how and at what level to engage the stakeholders in the decision-making process.
   - Delphi study: In the first round, the objective was to assess the importance of different issues, objectives, and challenges for recovery in order to prioritise them. (p. 4). The second round aimed at ranking the most relevant issues (S128).

3. Form(s) of participation, e.g. gather information and opinions from stakeholders
4. Who has the responsibility to act (and can influence the uptake of recommendations) Not specified
5. How to implement it? Both panels and Delphi technique could be useful tools to facilitate constructive dialogue and consensus-building amongst diverse stakeholder groups". **"**The participation of various stakeholder in the national panels was perceived as fruitful by the panellists

themselves and conveyed their willingness to continue being involved, reporting the usefulness of the meetings in terms of knowing each other, better identification of roles and coordination and preparedness improvement. Decision-oriented scenario-analysis clearly demonstrated added value and allowed us to identify, evaluate and optimise countermeasure strategies by involving stakeholders" and "it is necessary to maintain an active network of stakeholders to assay the process of national dialogue and to be prepared for possible future nuclear emergencies" (page S113).

Additional information

6. **Final comments:**

Other related documents:

Durand V, Maître M, Croüail P, Schneider T, Sala R, Marques-Nunes P, Paiva I, Monteiro Gil O, Reis M, Hilliard C, Tafili V, Twenhöfel C, Van Asselt E, Trueba C, Montero M, Duranova T. 2020. Towards an improved decision-making process to better cope with uncertainties following a nuclear accident. Radioprotection 55 **(**HS1). https://hal.science/hal-03192271/file/0000171080_001.PDF

Governance recommendations: 1) Clarify roles and responsibilities of the different actors involved in the decision-making processto better coordinate their actions in a context of uncertainty 2) Set up a stakeholder network to facilitate the involvement of local actors in the preparedness of emergency response and recovery 3) Develop dynamicapproach to implement more flexible decision-making processes.

Montero M, Sala R, Trueba C, Croüail P, Durand V, Gil OM, Maître M, Nunes PM, Paiva I, Reis M, Schneider T. 2020. Guidelines and recommendations for decision making during the transition phase. CONCERT deliverable D9.24. Available from https://www.

concert-h2020.eu/en/Publications. No longer available!

5.3.4 Nuclear/policy

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** AL
2. **Document Author(s):** Nuclear Energy Agency (NEA) and Organisation For Economic Co-Operation And Development (OECD)
3. **Document Title:** Society and Nuclear Energy: Towards a Better Understanding
4. **Publication Year:** 2002
5. **Institution (if official document) or project name (full):** Nuclear Energy Agency (NEA) and Organisation For Economic Co-Operation And Development (OECD)
6. **Is it a review of recommendations:** Yes

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** while the report covers generic issues related to society and nuclear energy, there seems to be a main focus on risk and risk perception and public opinion
2. **Step in the policy formation (provide enough details):** medium; decision making process
3. **Stakeholders:** the report does not focus on specific stakeholders but takes them all into account

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), democracy and democratic legitimacy; the importance of trust between lay people and scientists; inclusivity; social equality; transparency

5. Objectives (with what purpose?), "The main objective of the project is to offer some findings and recommendations, drawn from comprehensive analyses, aiming at a better understanding of behavioural attitudes of various stakeholders towards nuclear energy. The outcome is intended as a means to develop policy and decision-making processes in the field of nuclear energy better adapted to the needs and expectations of society" (p. 9)

6. Form(s) of participation: deliberative processes such as deliberative opinion poll and citizens' panels; mediation groups; future search conferences; consensus building; issue forums; consensus conferences; stakeholder dialogues; stakeholder workshops; opinion polls (surveys); focus group polls; effective and transparent communication between stakeholders and to the public specifically. New ("new" considering it's 2002) approaches to the latter can include online applications,

7. Who has the responsibility to act (and can influence the uptake of recommendations) while the report does not mention responsibility explicitly, it does say it is aimed at policy makers but expected to be of interest for all stakeholders , and further mentions the crucial role of politics

8. How to implement it? There are no clear implementation guidelines mentioned, the report is rather "intended to serve as a basis for further discussions and indepth analyses supporting more robust conclusions and recommendations." (p. 121)

Additional information

9. **Final comments:** This is the first part of a project that also covers case studies that were not included in this report.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** AL
2. **Document Author(s):** International Nuclear Safety Group
3. **Document Title:** Stakeholder Involvement In Nuclear Issues
4. **Publication Year:** 2006
5. **Institution (if official document) or project name (full):** International Nuclear Safety Group
6. **Is it a review of recommendations:** Yes

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** no domain specified; covers all aspects of nuclear energy.
2. **Step in the policy formation (provide enough details):** encompasses all steps in the formation, and stresses that open communication throughout every step is important (see also examples p.20, section 4.3)
3. **Stakeholders:** the report argues that „all stakeholders with an interest in nuclear decisions should be provided with an opportunity for full and effective participation in them".

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), the focus is on transparency to increase public confidence and trust on the one hand, and to increase the safety of every aspect of nuclear issues and the responsibility of nuclear agencies and regulators on the other hand

5. Objectives (with what purpose?) (p. 14)

a. Advocate for open, 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. establish that substantive stakeholder communications contribute to the safe operation of nuclear facilities
c. present major attributes of an effective communication programme
d. discuss ways and means for the efficient and rational involvement of stakeholders

6. Form(s) of participation, Open dialogue, informing the public as much as possible through open communication, and provide the public with the ability to respond and ask questions, to inspire discussion and deliberation

7. Who has the responsibility to act (and can influence the uptake of recommendations) The document targets **"**those who are planning, designing, constructing, operating, decommissioning or regulating nuclear facilities, or managing nuclear facility licensing processes." (p. 14, section 1.4). Additionally, they recommend that regulatory institutions and authorities establish procedures and that OECD/NEA committees remain involved in improving stakeholder involvement (p 25, section 6)

8. How to implement it?

a. established communication mechanisms and venues for discussions (p. 15)
b. two-way interaction where people try to listen and understand
c. education on nuclear issues, covering both risks and benefits, as early as possible
d. transparency and timely and open communication on all aspects of nuclear issues: both the good and the bad, which will increase credibility and public confidence and trust

Additional information

9. **Final comments:** /

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: LG**
2. **Document Author(s):** INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
3. **Document Title:** Stakeholder Involvement Throughout the Life Cycle of Nuclear Facilities
4. **Publication Year:** 2011
5. **Institution (if official document) or project name (full):** IAEA NUCLEAR ENERGY SERIES PUBLICATIONS
6. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,

- general (energy policy development and adoption),
- other: Life Cycle of Nuclear Facilities

2. Step in the policy formation (provide enough details):

- early: agenda setting (incl. research agenda), problem formulation;
- medium: consideration of options, decision of option;
- late: policy implementation, policy evaluation

3. **Stakeholders:**

- Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
- Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
- Helix 3: the natural environment, e.g. environmental NGOs;
- Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
- Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, early engagement;

- Flexible and varied according to different national laws, norms, and cultures. "Given the key steps of decision making processes on national and organizational levels, a stakeholder involvement plan should be developed in consideration of relevant norms and standards" (p. 4)
- Always consider national differences when involving stakeholders.
- Exhibit accountability:

  Accountability cycle should ensure that all parties communicate their activities clearly and concisely, thereby avoiding accusations of secrecy and developing trust. It also refers to the importance of following up with clear feedback to those involved as to how and why their contributions have or have not influenced the outcome.
- Recognize the purpose of stakeholder involvement

  "The purpose of involvement is to enable all stakeholders to make known their views and to work together to ensure that these views are addressed/considered."

  "This involvement should take place throughout the development and implementation of a nuclear programme. It should be regular and frequent, not only when there is a problem or concern, in order to engender trust and confidence amongst all stakeholders, including national and international communities."
- Understand stakeholder issues and concerns from the beginning

  An effective stakeholder involvement process include an appropriate strategy and a plan, which requires a comprehensive approach to stakeholder identification and understanding of the concerns affecting them.

  "Having identified concerns and sensitivities among the various stakeholder groups and how those groups may impact the programme or facility development in question, there is then a need, within decision making processes, to clearly assign responsibilities and roles for stakeholder involvement in these processes. This should include explanations

of what decisions are required and how stakeholders can influence them, and if not, why not".

- Build trust

  Trust is built on various attributes such as reliability, accountability and fairness, as well as knowledge about risks, perceived credibility of the responsible organisation and the reviewing agency, among others. An inclusive approach to stakeholder participation from the beginning of the planning process is also crucial. Although this trust can be quickly shattered by unexpected events, it can be reinforced by demonstrating technical competence and by demonstrating technical competence and adherence to high standards in both performance and reporting.
- Practice openness and transparency

  Openness and transparency is the opposite of the "decide, announce, defend" communication model of the past, which has been replaced in most countries by "engage, interact and cooperate". However, one of the challenges of this principle is the tension between the goal of transparency with stakeholders and restrictions on information disclosure.
- Recognize the evolving role of and methods for stakeholder involvement

  Open and accessible means of stakeholder involvement have been developed for existing nuclear programmes as well in waste management facilities. Any future programmes for new reactors or facilities should follow this trend. It is also vital that engagement with young people as an important part of any stakeholder engagement process is also vital. Consider that modern media such as social media and the internet may end up being more influential than traditional forms of print or audio-visual communication.

5. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning;

"This report demonstrates the importance of stakeholder involvement throughout the life cycle of all nuclear facilities; including operating reactors, temporary spent fuel storage facilities and final radioactive waste repositories" (p. 1)

"This report explains how involving stakeholders in decision making processes, even for those stakeholder groups that do not have a direct role in making those decisions, can enhance public confidence in the application of nuclear science and technology. In addition, this report presents general guidance on stakeholder involvement" (p. 1)

"Recommendations regarding design and implementation of an open and transparent stakeholder involvement programme are not provided as rigid templates but rather as frameworks in which specific local and national strategies can be developed, taking cultural and sociological factors into consideration". (p. 3)

6. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships;

"It is important to emphasize the different levels of engagement that should be considered for stakeholder involvement. The spectrum ranges from: remaining passive with no engagement; to monitoring stakeholders views; informing; consulting; involving through working directly with stakeholders to ensure their concerns are understood; to collaboration where stakeholders are full partners in finding mutually agreed solutions. In a stakeholder involvement strategy and plan, it is quite feasible that all of these levels might be used for

different stakeholder groups."

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

"Exactly who the decision makers are in each stage will vary country to country depending on national legislation, regulations, and norms. However, often the main decision maker in the first phase is the national government, whose task it is to introduce a nuclear power programme and establish a regulatory body. While the last three phases, encompass a number of decision makers, government ministries, the operator/owner operator, and the regulatory body. Even local authorities may, in the second phase, be regarded as a decision maker, though; normally it is rather one of the main stakeholder groups. All of the above mentioned bodies should continually interact with stakeholders and appropriately involve them in the decision making processes" (p. 8)

"Although decision making processes vary considerably by Member State, depending on culture, history and governmental structure, it is nonetheless advisable that all entities primarily responsible for nuclear programmes create plans for stakeholder involvement. There is no one ideal model for stakeholder involvement. The stakeholder involvement strategies and approaches depend on the nature of the nuclear facility, the point in its life cycle, cultural and legal norms and other factors" (p. 21)

8. How to implement it? Steps to be taken to accomplish recommendation

Stakeholder involvement have been divided into four nuclear facility/programme life cycle stages:

1. Introduction of nuclear power programmes or new nuclear facilities;

"A proposal to develop a nuclear power programme or site a nuclear facility will inevitably result in considerable debate, first nationally then locally when specific sites have been identified, but also often with neighbouring countries" (p. 9)

- Communicating benefits and risks
- Siting
- Communication involvement and partnerships
- Inter-organization coordination
- Involvement process and expectations

2. Operation of nuclear facilities;

"Stakeholder involvement and communication on a regular basis during facility operation should include updates on safety levels and other performance related issues; such as power output level or refuelling outage schedules. This can take place via stakeholder groups established as representatives of the community and through responsible authorities. It is important to remember that many facility staff will also be members of the local community" (p. 11)

3. Expansion or extension of nuclear facility operation;

"Decisions of such magnitude often involve extensive consultation by national governments or operators with the full range of stakeholders." (p. 11)

"When communicating the rationale for extended or expanded nuclear facility operation, care should be taken not to present misleading or oversimplified facts, which could

impact the credibility of all stakeholder involvement measures. (p. 12)

4. Planning and implementation of nuclear facility decommissioning:

"The trust and confidence developed between all parties during facility operation needs to be maintained during the decommissioning process". "Local oversight of decommissioning and cleanup activities is now a feature of stakeholder involvement at closed nuclear faciltiy sites in a growing number of Member States, and there is an abundance of experience providing best practice evaluation" (p. 12)

National agencies, facility operators and waste owners should maintain open and constructive communication with different groups of communities affected by the decommissioning of nuclear facilities, such as Nuclear Legacy Advisory Forum (NuLeAF, UK), Association of Municipalities in Areas with Nuclear Power Plants (AMAC, Spain), Energy Communities Alliance (ECA, USA) and Group of European Municipalities with Nuclear Facilities (GMF, Europe).

Steps that should be common to implementing stakeholder involvement programmes:

— Develop a strategy for stakeholder involvement;
- A clear goal for the programme;
- Well-defined and measurable objectives for achieving the goal;
- Identification of the issues to be addressed and an indication of priorities.

— Develop plans for implementing this strategy;
- Identify and prioritize stakeholder groups to be considered;
    - Government leaders — local and national
    - News media
    - Academic/researchers
    - Medical and health professionals
    - Special and public interest groups, consumer groups, other non-governmental organizations
    - Citizens
    - Employees and suppliers
    - Informal opinion makers
- Identify the issues and means of engagement that are considered most important for each stakeholder group;

  "Wherever possible, messages should be consistent and part of a regular programme" (p. 17)
- Identify the tools and approaches that will be used;
- Design an evaluation component;
- Assign ownership of plan elements;
- Allocate sufficient resources to accomplish the actions;
- Identify the competencies that will be needed by those who will be responsible and how these competencies will be developed and ensured.

— Ensure that the capacity to effectively implement these plans are is available;

— Implement these plans;

— Continually monitor the effectiveness of these actions and look for ways to improve

"Stakeholder involvement should be an integral part of the management of nuclear facilities/programmes from their conception through final closure and decommissioning.

Thus, implementation of the plan described in Section 3.3 will need to include mechanisms to continually monitor the effectiveness of the programme and make changes and improvements based upon the results of this evaluation". (p. 20)
Additional information ***9.*** **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION
Information available in the database **1. Coder initials: RS (CIEMAT)** **2. Document Author(s):** Katja Rottmann **3. Document Title:** Recommendations on Transparency and Public Participation in the Context of Electricity Transmission Lines **4. Publication Year:** 2013 **5. Institution (if official document) or project name (full):** Germanwatch **6. Is it a review of recommendations:** No
CONTENT ANALYSIS
Information to be determined as part of the review process **1. Domain:** • uranium mining, • siting (licensing) of new NPPs • NPP Life Time Extension, • nuclear emergencies and post-accident recovery (incl. environmental remediation), • siting (licensing) of waste repositories, • radioactive waste management (storage, treatment & conditioning), • decommissioning, • general (energy policy development and adoption), • other: power grid **2. Step in the policy formation (provide enough details):** • early: agenda setting (incl. research agenda), problem formulation; • medium: consideration of options, decision of option; • late: policy implementation, policy evaluation *3.* **Stakeholders:** All the relevant stakeholders (NGOs, TSOs, public authorities, local citizen action groups) should be willing to have a positive attitude and work together construc-tively. The public participation process needs to be taken serious by both the de-cision-makers and those who take part in it. • Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; • Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; • Helix 3: the natural environment, e.g. environmental NGOs; • Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; • Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)
Recommendation/s: public participation in the context of power grids.

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?) Transparency, early engagement (room to manoeuvre), publicity of the participation process, fairness and inclusiveness, continuous dialogue and feedback to create mutual trust, professional organization of public participation.

5. Objectives (with what purpose?): A better and earlier involvement of the public may help to speed up permit granting procedures. A well-designed public participation may help to increase the acceptability of new power lines.

6. Form(s) of participation: inform, consult or cooperate (depending on the objective of each process).

7. Who has the responsibility to act (and can influence the uptake of recommendations) Mainly TSOs (transmission system operators) and public authorities.

8. How to implement it?

Transparency:

- Make information easily accessible, whenever possible on the Internet, and iden-tify other suitable communication channels.
- Spread information proactively, for example, in newspapers, social media, and so on.
- Make the process transparent: provide an overview, announce consultations, events and so on well in advance (at least four to six weeks prior to the event).
- Provide transparency about the matter at hand: status of the project, costs (to whom), benefits (to whom), design choices, involved actors, and environmental, economic and health impacts.
- Provide full information on grid projects (full application with maps and tables, background studies, etc.) as well as understandable and comprehensive summa-ries, including maps and pictures.
- Provide differentiated information: different stakeholder groups have different in-formation needs which should be addressed using different formats (short sum-maries but also full documentation for those who are interested).
- Provide full information about public participation in the context of the project: what kind of participation is foreseen, when can stakeholders become involved, what are the results of participation, what difference will participating make, why should one participate and what can be achieved by it?

Early involvement:

- Involve stakeholders and the broader public at the earliest stage possible when their arguments can still be taken into account.
- Communicate clearly the room for manoeuvre. In which aspects can contributions be taken into account? Where exactly is there still room for flexibility? Which decisions have already been taken – and by whom?
- Communicate clearly what can no longer be influenced so as to avoid raising false expectations.
- Develop strategies on how to gather feedback from the public on general ques-tions where public outreach may be difficult.

Publicity:

- Make sure that the results of meetings of permanent working groups or expert meetings are made available to the broader public, for example, by putting presen-tations and minutes on the Internet and providing information about who took part in these discussions.

- Make sure that meetings held to address the broader public are announced well in advance and consider opportunities to broadcast these events via web stream.

Fairness and inclusiveness:

- Make sure that all actors participate with an open mind and are willing to take the process and all partners involved seriously.
- Consult an independent moderator/facilitator if conflicts have already arisen.
- Stakeholder mapping.
- Enable the participation of all actors concerned, for example, by using a dedicated concept.

Continuous dialogue:

- Set up additional meetings or hearings beyond the legal framework, which often does not foresee a dialogue between the actors concerned.
- Make use of different tools and formats that enable a continuous dialogue between different stakeholders.
- Consider setting up permanent working groups or similar structures (e.g. a series of stakeholder workshops) that enable a depended exchange of different views.
- Give feedback to stakeholders to show that all arguments and comments have been considered carefully before taking the final decision. Explain which points have been addressed and how, and which have not been addressed, and why.
- When organizing formal hearings or events, consider holding follow-up events where discussions can be continued and feedback given to participants, whether their arguments have been taken into account or not.

Professional organization7planning:

- Plan sufficient resources (personnel, time) for public participation.
- Develop a concept of public participation that specifies the aim, procedure, tools and timeline of the envisaged public participation and make this information accessible.

Germanwatch has developed a five-step approach, which shall help to implement these general recommendations and can be used at various planning stages and in different contexts.

- Step 1: Analyse the starting situation.
- Step 2: Develop a tailored concept for transparency and public participation.
- Step3: Implement the identified measures.
- Step 4: Communicate results.
- Step 5: Monitor and evaluate the process.
- Additional tool: permanent steering group.

Additional information

9. **Final comments:** Very interesting and comprehensive document.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s): Andrej Klemenc, Nadja Železnik, Milena Marega**
3. **Document Title: Scenario 1: "Continuation with present activities and plans for commercial use of nuclear power"**
4. **Publication Year: 2014**

5. **Institution (if official document) or project name (full): PLATENSO project, D4.1**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** uranium mining, siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other:

general (energy policy development and adoption),

2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

The deliverable is addressing one of the three possible nuclear development scenarios in different Central and East European countries (Bulg, Cz, H, Lit, Pol, Slovakia, Slovenia, Rom)– Scenario 1 based on continuation of the current situation with reactors in operation and reactors planned to be built in respective countries.

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement; The scenario provide description of external conditions, description of situation and plans in relevant countries, analyses of social, societal and governmental challenges in the countries and from those derived important topics in the field which will need to be investigated in future to support the scenario in question., p.5
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **The objective of report is to develop recommendations on social, societal and governance research to implement scenario 1 with continuation on nuclear operation.**

   In developing of recommendations also societal and governance priorities are stressed, like Enhanced trust of general public, Enhanced trust in energy planning institutions and processes, Enhanced trust in the top political decision makers, providing in-time and adequate solution to RAW, assurance of reliable and independent assessment of nuclear safety in life-time extension of operating NPPs (when relevant); upgrading of existing national energy concepts, strategies and policies to address the issue of possible scenarios of strategic development of energy policy at EU level, assurance of reliable and independent assessment of economics of investment and financial models of investment and More inclusive governance in planning of the nuclear activities. (p. 14-15)

3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; Report is not devoted to forms of participation, but provides general recommendations for political system.

4. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry; According to report is political system (decision making bodies, ministries, regulators, responsible institutions.

5. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The report also points out resources (financial, human) for implementation of scenarion 1 as one the important topics for its fulfilment. However, it also stresses ther are lack of resources for implementation of social, societal and governance research: "From the investigation of national situation in CEE (for example, results from project NEWLANCER) it can be seen that the funds for research in the nuclear energy programs is quite limited. The investments are focused in solving technical needs, and rarely in public relation campaigns, when necessary.", p.52

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

Main recommendations (p6/7):

In order to provide support to continuation of existing plans and activities in the field of commercial use of nuclear energy, main research activities related to social, societal and governance research thus need to be focused on:

a) Development of geopolitical relations between the Western countries and the Russia with a particular focus on development of EU- Russia relations in energy field and their impact on Scenario 1 for individual PLATENSO countries.

b) Relevance of expected development of EU energy and nuclear policy and legislation for Scenario 1, taking into account different scenarios of development of EU policy and legislation.

c) Economics of investments in and financing models for different types of commercial nuclear activities within the context of liberalised and deregulated energy markets, including adequacy of a "strike price" financial model for CEE economies.

d) The development of energy policy and the main policy challenges for Scenario 1 in PLATENSO countries and their interference with key national development priorities and EU developments in the field of energy policy and nuclear safety.

e) The origins and the driving forces of "nuclear consensus" in CEE societies and related discourses, as well as institutional practices and their sustainability under changed social, economy and political frameworks.

f) Investigation of implementations of public participations related to nuclear energy, mainly during the decision making process (policy, strategies, programs and plans), but supporting also all different phases of development for scenario 1.

g) Investigation of the communication approaches to support national conditions and to fulfil Aarhus convention in all three pillars (Access to Information, Public Participation in Decision- Making and Access to Justice in Environmental Matters) for continuation of nuclear use.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** Milena Marega, Andrej Klemenc, Nadja Železnik,
3. **Document Title: Scenario 2: "Phasing out nuclear power"**
4. **Publication Year: 2015**
5. **Institution (if official document) or project name (full): PLATENSO project, D4.2**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** uranium mining, siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other:

   general (energy policy development and adoption),

2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

   The deliverable is addressing scenario 2 – phasing out nuclear power in Bulgaria, Czech Republic, Lithuania and Slovenia, considering the major technical and socio-economic differences between these countries and taking into account relevant social,

   societal and governmental issues in this context.

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement; The scenario provides a description of external conditions, a description of the current situation and plans in the relevant countries, analyses of the social, societal and governmental challenges and from these derives important topics in the field which would need to be investigated in future to support the scenario in question. (p. 5)
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **The objective of report is to develop recommendations on social, societal and governance research to implement scenario 2 with phase out of nuclear energy use.**
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; Report is not devoted to forms of participation, but provides general recommendations for political system. However it considered also societal and governance issues: "The governance of nuclear phase out is therefore not only a technical issue on whether and how is feasible to assure affordable, competitive and environmentally benign energy services in a country but it also requires adequate capacities for management of wider social conflict involving citizen's groups and social institutions with different and opposing views and normative statements that are bound to different paradigms on how to ensure fairness and welfare for society and well-being to an individual.", p.31

4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; According to report responsibility for fulfilling recommendation is political system (decision making bodies, ministries, regulators, responsible institutions).
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The report also points out resources (financial, human) for implementation of scenarion 1 as one the important topics for its fulfilment. However, it also stresses there are lack of resources for implementation of social, societal and governance research: "In fact, the specific country development should be focused on designing the broader picture of nuclear phase out in order to satisfy the factors described. Besides the purely technical challenges to phase out, the topics presented above should also be addressed. This requires, in addition to technical experts, many other researchers and specialists, for example psychologists, sociologists, political scientists, communicators, economists and others.", p.50

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

Main recommendations (p5/6):

Within Scenario 2 we provide a description of the research activities that are, in our opinion, needed for successful phase-out of nuclear power in the selected countries. At the very least the following issues should be taken into account in this regard:

a) Safety issues should be defined, analysed and solved, from the process of decommissioning itself, to radioactive waste repositories (closing NPP could cause emigration of the personnel, the problem of HLW and even LILW disposal is still not yet solved);

b) Maintenance of an adequate supply of electricity from other sources, and the process of transition to them; this is by and large influenced by developments regarding RES and EE targets, state aids rules, further integration of electricity markets and new rules on cross-border transmission grid operators within the EU. To what extent – if at all – the ACTA treaty – if approved – might influence decision making on energy options in the EU would only be possible to analyse when the document is made public, therefore Scenario2 only takes into account the possible influence that ACTA might.

c) Covering the costs of phasing out nuclear power, especially in the context of the economic crisis and the relatively weak economies of the countries in question.

d) Duration of the process especially in the countries with small surplus (or lack of it) of electricity supply from domestic sources. While in the short term it is possible to compensate for the nuclear generation capacities with reserve capacities, increased imports of electricity and placing restrictions on the largest electricity consumers, without involving excessive economy burdens, is much more complicated in the long term for such countries. Therefore a set of complex policies and measures need to be prepared and deployed.

e) Wider socio-economic consequences in the countries; especially the consequences as regards development in those regions where commercial nuclear reactors are situated.

Scenario 2 entails a presumption that traditional regional development models based, on

state patronage and aid, cannot effectively and efficiently cope with regional development challenges resulting from nuclear phase out.

f) Public support for phase out is absolutely necessary but is very hard to achieve, especially in countries that not only rely heavily on the electricity and financial revenues generated from the NPP(s) and where generation of nuclear energy is also a matter of national pride and where the alternatives are at present predominately considered as opportunities that only benefit others. Phasing out cannot be achieved by governmental decrees or purely legislative means but needs capacities to develop, discuss and in an inclusive way decide on an energy policy that entails scenarios for a well-planned phase out.

g) Environmentally benign and socially sound phasing out of nuclear energy is only possible in the medium term and given the dominant economy and social structures as well as current attitudes to nuclear power in CEE countries, should rather be seen as a long term process.

h) Especially in countries that operate only one reactor and depends on one specific type of reactor, it may be that a phase-out could be triggered by a severe accident in a reactor of a similar type elsewhere. Such countries should therefore prepare plans for phasing out even if at present the commercial use of nuclear energy commands a high level of support from the public.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** LG
2. **Document Author(s):** Kjell Andersson
3. **Document Title:** Forming a research strategy, Scenario 3: A nuclear energy policy scenario based on Generation 4 reactors Proposal for ways to address social, societal and governance issues related to the ALLEGRO project
4. **Publication Year:** 2016
5. **Institution (if official document) or project name (full):** PLATENSO project.

Project co-funded by the European Commission under the Seventh Euratom Framework Programme for Nuclear Research and Training Activities (2007-2011)

6. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),
   - other: … Generation IV reactors.

2. Step in the policy formation (provide enough details):

- early: agenda setting (incl. research agenda), problem formulation;

"For the development of Gen IV and siting of of Gen IV facilities, local and regional authorities will need resources to be able to form their own opinions and to understand how coming installations can affect e.g. planning for infrastructure, etc. Potential "Gen IV countries" can include this in their planning already at an early stage." (p. 13)

- medium: consideration of options, decision of option;
- late: policy implementation, policy evaluation

3. **Stakeholders:**

- Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
- Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
- Helix 3: the natural environment, e.g. environmental NGOs;
- Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
- Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. openness, transparency, dialogue, trust, innovative.

"Without broad social acceptance the likelihood of Gen IV realization is small and acceptance cannot be reached by authority but with openness, transparency and dialogue" (p. 10).

"The research should be "problem driven" and relevant for the development of Gen IV reactors. At the same time the independence of academic research from various interests is critical for trust and at the core of its identity". (p. 17)

"The approach in PLATENSO countries involved in Gen IV development for involving stakeholders should not be restricted to following EUA procedures and international conventions only in a strictly formal way but be more ambitious addressing the issues in innovative ways needed to reach a high level of awareness and clarity" (p. 14)

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

The objective of PLATENSO is to provide a proposal towards establishing the legal base for a European Entity on Socio-Economic matters linked to nuclear technology and to develop recommendations for research strategies to enhance the capabilities of research with respect to governance, social and societal aspects of nuclear energy

6. Form(s) of participation (p. 10).

Developing research programmes in cooperation with stakeholders.

"Investigation on how local and regional participation can be organized" (p. 19)

"A number of networking activities are carried through as a major step toward actual foundation of the strategies in PLATENSO countries." (p. 2)

7. Who has the responsibility to act (and can influence the uptake of recommendations)

In each country a PLATENSO partner takes responsibility for building a network

of research institutions in its respective country.

8. How to implement it?

In order to provide support to a robust and high quality decision making process, research activities, other preparations and activities related to social, societal and governance issues need to include:

On the EU and national levels:

1. Enhanced research about the social, societal or governance issues related to different energy futures with more or less nuclear energy as part of a sustainable energy system in order to have a robust justification for the development of Gen IV.

2. Consideration of knowledge in economics of investments and in financing models for different types of commercial nuclear activities within the context of liberalised and deregulated energy markets.

3. Consideration of expected development of EU energy and nuclear policy and legislation.

4. Investigation of the communication approaches to support national conditions and to fulfil Aarhus convention in all three pillars (Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters) for continuation of nuclear use.

For the local and regional levels:

5. Research about regional and local effects such as labour force and employment, infrastructure, property values, tourism, image, etc. This can partly be done generically but needs to become concrete for potential localities for Gen IV facilities.

6. Investigation on how funding can be organized in such a way that local and regional authorities can get sufficient information for their decision making while still remaining autonomous actors. Investigation on how local and regional participation can be organized.

7. Enhancement of legislation aimed to support the position of local communities within the decision making process.

8. Encouragement and support to local and regional actors for interaction with their colleagues in other countries.

Governance policies to keep it all together:

9. Research on reasons for resistance and challenges to stakeholder involvement such as:

- Lack of trust in government bodies
- Lack of government interest
- Regulators are often seen as proponents of nuclear power
- Sometimes stakeholders don't want to participate

Detailed analysis should be done of what the obstacles are and how they can be overcome. Such an analysis should include all phases of decision making, address when and how e.g. regulators and NGOs can participate, clarify the links between informal processes (such as the RISCOM process and partnerships) and the "real decision making" by governments, local authorities and courts and help to be more pragmatic. Institutionalization of participatory processes should be considered in the research.

10. Identification of principles and concrete solutions as to how effectiveness and robustness of decision making processes with different modes of public participation can be secured whilst taking political realities, such as short election cycles, as compared to the time frames Gen IV development into account.
11. Research on how participation processes can be tailored to specific situations such as phase of decision making, aim of participation, institutional prerequisites, cultural characteristics, etc.).

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title:** Communication and Consultation with Interested Parties by the Regulatory Body. General Safety Guide No.GSG-6
4. **Publication Year: 2017**
5. **Institution (if official document) or project name (full):** International Atomic Energy Agency
6. **Is it a review of recommendations:** Partly (refers to requirements for communication and consultation from various safety standards documents for various fields, eg radwaste, decommissioning, …)

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** general.
2. **Step in the policy formation (provide enough details:**

- Involve "when appropriate" interested parties in decision-making

3. Stakeholders: various named dependong on fields (eg emergency, etc) unspecified; "interested parties regarding nuclear and radiation safety matters"

Groups defined: i) public (general and people living in the vicinity of a facility or activity, community leaders); ii) local liaison groups or committees; iii) interest groups: non-governmental organizations such as labour unions, consumer groups, environmental groups and anti-nuclear groups.; iv) news and social media; v) Governmental authorities and decision makers; vi) professional vi) International organizations and national regulatory bodies; vii) staff of the regulatory body

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, early engagement;

-growing societal awareness of the need for transparency and openness, and the participation of interested parties, in matters relating to nuclear and radiation safety. , e.g. to gain public trust, facilitate social learning;

- Members of the public usually have incomplete knowledge and a great deal of uncertainty regarding any issue involving nuclear and radiation safety because of the complexity of the topic. Such incomplete knowledge and uncertainty influence the public's perception of the radiation risk associated with nuclear energy, radioactive waste and the use of radiation sources.

-The public rightly expects to have access to reliable, comprehensive and easily understandable (plain, unambiguous and jargon-free) information about safety and regulatory issues in order to

form opinions and make fully informed decisions. The **public also expects to have fair and reasonable opportunities to provide their views and to influence regulatory decision making processes**.

- Refers to Principle 2 of IAEA Safety Standards Series No. SF-1, Fundamental Safety Principles [1], states in para. 3.10 that, among other aspects: "The regulatory body must: ... [..] Consult parties in the vicinity, the public and other interested parties, as ***appropriate, in an open and inclusive process****."*

- Underlying principles for **communication with, and involvement** of, interested parties in decision-making (difficult to separate communication from involvement): **Accountability** (**key contributor to safety culture, but also to increase confidence of interested parties**); Credibility and Legitimacy (more related to transparent and open communication);

  Quality in performance of regulatory functions ("*The knowledge of interested parties (e.g. the local residents' knowledge of the local environment; different social factors, values and meanings) can inform how issues are framed. This will allow the regulatory body to better understand — and, therefore better consider — the concerns of interested parties as it performs its regulatory functions.");* enable the regulatory body to demonstrate that its Independency.
- Regulatory body should be committed to transparency and openness
- When necessary, the regulatory body should ensure that interested parties are involved at the **earliest opportunity** ;
- The regulator should **respect** interested parties and **behave fairly in interactions** with them.
- „5.16. The effective participation of interested parties (through dialogue, consultation, collaboration, or a combination thereof) is essential for **furthering understanding of the issues by both sides and clarifying the issues in question**."

5. Objectives (with what purpose):

- Communication and consultation are **strategic instruments** that **support**

the regulatory body in performing its regulatory functions.

- **Demonstrate independency**
- Increase confidence
- Quality in performance
- Early engagement serves to identify potential conflict situations, prevent the likelihood that not all important aspects have been considered, It makes it possible for interested parties to influence the regulatory process and to share their perspectives at a stage when such perspectives may be more easily incorporated into that process.
- The interaction of interested parties with the regulatory body should enable **well informed decisions** to be made and the **best possible outcomes to be achieved.**

- The public also expects to have fair and reasonable opportunities to provide their views and to influence regulatory decision making processes. They enable the regulatory body to make informed decisions and to **develop awareness of safety among interested parties**, thereby **promoting safety culture**. The establishment of regular communication and consultation with interested parties will contribute to **more effective communication by the regulatory body in a possible nuclear or radiological emergency**.
-
  - If, on the other hand, the decision making process is close to the final stage, participation should be oriented more toward supporting decision making by clarifying the remaining options.

6. Form(s) of participation:

- Large degree of flexibility in interpreting "consultation" and "involvement": the regulatory body should adapt its methods for communication and consultation to the **objectives and the expected interested parties**, and in accordance with a graded approach (risk based). The methods should be used in accordance with national circumstances, and with the **concerns and interests** of interested parties.
- Consultation: it is specified in some places that this should make it possible to influence the regulatory process; but most of the document focuses on gathering views and stakeholder knowledge through 2-way communication in order to consider / include those knowledge and views.
- There is a special section "Provisions for participation" – there several forms are mentioned: dialogue, consultation and collaboration.

5.22. In some cases, to increase the effectiveness of communication, a **dialogue** should be established between the regulatory body and interested parties [5].

5.26. In accordance with national legal and regulatory provisions, such as those relating to the licensing process [27] or the development and implementation of protection strategies for existing exposure situations [3], the regulatory body should **consult with interested parties**. In addition, the regulatory body should also consider asking for input on other issues such as complex or major topics (e.g. when drafting legislation or regulations).

5.35. To explore potential solutions to regulatory issues, such as the development of regulations, policies and guidance, **a collaborative process may be implemented** to directly involve different interested parties. In this way, involved interested parties are active participants in developing a regulatory process with a focus on finding common ground.

7. Who has the responsibility to act (and can influence the uptake of recommendations)

Regulator

How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

2.7. The regulatory body should communicate the arrangements for informing and involving interested parties to the interested parties.

2.8. The outcomes of communication and consultation with interested parties should be documented and made available to the interested parties.

2.11. Consultation with interested parties should be an integral part of the regulatory process. Interested parties should be regarded as an asset that can contribute knowledge to that process.

2.13. Within its budget, the regulatory body should allocate appropriate resources to support communication and consultation with interested parties

2.14 The regulatory body should establish and implement appropriate

arrangements for communication and consultation in order to: [...] Establish meaningful two-way interactions with interested parties to ensure that they have fair and reasonable opportunities to **provide their views**.

2.16. The regulatory body should continuously improve communication and consultation by taking into consideration other experience at the national and international levels, feedback from the interested parties, and results of evaluations of the communication and consultation activities conducted.

2.17. All interested parties should be given appropriate access to the information concerning safety held by the regulatory body. The regulatory body should facilitate **and encourage public awareness and participation by making such information widely available**. While some sensitive information cannot be disclosed (e.g. information concerning nuclear security, proprietary information), any restriction on information should be kept to a minimum and fully justified on the basis of national legislative criteria.

2.18. The regulatory body should ensure that **information on access to administrative and judicial review procedures is made available** to any interested party [22].

4 steps are defined (no distinction between communication and consultation)

- 4.35. For effective communication and consultation, specific and adapted

methods and organizational approaches should be employed in accordance with:

— The legal and regulatory requirements;

— The goals for informing and involving interested parties;

— The nature of the interested parties to be targeted and their concerns and

expectations;

— The topics and the issues involved.

The regulatory body should strongly encourage effective participation **when**

appropriate, including, when necessary, by government representatives and

local elected officials. The provisions for participation by interested parties

should be clearly explained as early as possible. Interested parties with different

viewpoints should be given opportunities to participate in the communication

and consultation process.

5.19. **The participation process should include discussions on the form and the**

structure of the decision making process and the regulatory process, as much as

on their technical and scientific contents. Enough time for proper participation

should be allowed for.

Additional information

9. Final comments: additional points that the coder finds interesting, good to share.

Refers to various safety standards and the requirements for communication and consultation for various fields (eg radwaste management, decommissioning.

Focuses on safety

The document seems to be built on a previous communication document with the word "consultation" added a later time and interpreted flexibly

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** LG
2. **Document Author(s):** Charnley-Parry et al.
3. **Document Title:** D 5.1 – Principles for Effective Engagement Work Package 5 Leader (UCLan)
4. **Publication Year:** 2017
5. **Institution (if official document) or project name (full):** HoNEST project (History of Nuclear Energy and Society)
6. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),
   - other: based on the historical experiences of various European countries

2. **Step in the policy formation (provide enough details):**
   - early: agenda setting (incl. research agenda), problem formulation;
   - medium: consideration of options, decision of option;
   - late: policy implementation, policy evaluation

"Engagement at different stages of developing policy" (p. 14)

3. **Stakeholders:**
   - Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
   - Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
   - Helix 3: the natural environment, e.g. environmental NGOs;
   - Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
   - Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?)** The authors have sought to understand the principles and values that are required in order to ensure that engagement is fair, equitable, and ultimately effective, whether this be through impacting policy or practice (p. 44).

   The principles proposed aim to be reflective of wider processes of effective governance, which encompass themes such as equity, respect, reciprocity, and opportunity.

2. **Objectives (with what purpose?)**

   Based on a review of the academic, governmental and industrial literature, the objective is to identify a number of core principles that reflect effective engagement and to provide guidance on future engagement practices and programmes, among both nuclear stakeholders and those in other technological fields

3. **Form(s) of participation** (p. 10).

   Public participation is based on the notion of democracy, and the mitigation of conflict and promotion of trust, acceptability and decision legitimacy.

   "Effective engagement requires dialogue at its centre, whereby an understanding of people's circumstances, needs and priorities, as well as their applicable experience and assets, is attained" (p. 8)

   Two-way communication is valued, likewise public trust be developed through demonstration of respect and being open and transparent respect to challenges faced and actions taken, utilising clear, consistent and concise information and those local communities be listened to and actively engaged.

4. **Who has the responsibility to act (and can influence the uptake of recommendations)**

   "Public stakeholders are involved in and are able to influence the process, the resulting integration of knowledges (public, policy, expert) facilitates accountability, transparency and action regarding necessary change" (p. 16)

   The document reviewed shows a representation of the efforts made by governments and industry organisations to engage with public stakeholders about nuclear.

   "it is clear that systems of energy governance leading to political influence has been significant in regards to the degree to which governments have engaged with their citizens. Whilst in some countries this has been minimal and has led to widespread public mistrust in both government and industry bodies, in others it has been more comprehensive, based on a commitment to democracy and building relationships with public stakeholders" (p. 35).

5. **How to implement it?**
   - "***Timely engagement (p. 40)***
     Engage with stakeholders 'up-stream' and prior to key decision-making periods to legitimise engagement and stakeholder input
   - ***Dialogue-based engagement***

     Information provision and expert-tostakeholder communication alone is often inappropriate and insufficient. A dialogue based approach enables both parties to explore issues and decisions, and also understand stakeholder values and priorities.
   - ***Wide and objective engagement"***

Engage with a range of stakeholders and understand the positions and needs of various stakeholders, absent of bias or subjectivity.

- ***"Open and transparent procedures (p. 41)***

  If processes of engagement are limited, if dialogue is restricted, or if those involved are unwilling to discuss important issues, constructive outcomes and shared learning are less likely to occur"
- ***"Context dependency (P. 42)***

  Engagement structure and content should be in part determined by stakeholders, so as to validate topics under discussion and to address issues of greatest concern for all parties. Understanding the specific context of each community or group facilitates more effective engagement and decision-making.
- ***Extra-political engagement***

  The impacts of infrastructure decisions often exceed political timescales and terms of office, and affect local stakeholders to a greater degree than those in decision making positions. It is recommended that stakeholder engagement is not excessively influenced by political timescales and the intentions of changing political parties.
- ***Procedural justice"***

  Fair, inclusive, accessible and well-conducted procedures can be as important as decision outcomes themselves.
- ***"Access to engagement processes (p. 43)***

  All social groups and interest-based organisations should have the opportunity to participate in processes of engagement, as a range of views and knowledge are necessary for effective and legitimate decision-making.
- ***Access to information and individuals***

  Without access to the full range of information to make informed decisions, or access to officials, experts and decision makers to ask questions, engage in deliberation or voice concerns, engagement will not meet the demands of democracy or social justice
- ***Reciprocity***

  All parties involved in processes of engagement must benefit in a tangible and legitimate way.

Additional information

6. **Final comments:**

The principles for effective engagement sits within a broader discussion on energy governance, and how this should be both conceptualised and executed within different cultural and political contexts.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** AL
2. **Document Author(s):** Nuclear Energy Agency (NEA) and Organisation For Economic Co-Operation And Development (OECD)
3. **Document Title:** NEA Workshop on Stakeholder Involvement in Nuclear Decision Making

4. **Publication Year:** 2017
5. **Institution (if official document) or project name (full):** OECD/NEA No. 7302
6. **Is it a review of recommendations:** Yes

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** nuclear energy and other areas of radiological application
2. **Step in the policy formation (provide enough details):** medium: decision-making process with regards to nuclear energy (and also other radiological applications)
3. **Stakeholders:** the public (helix 4), businesses (2), economic actors (2), representatives from non-governmental organisations (3?), local, regional and national authorities (5), as well as nuclear regulators. (5)

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** stakeholder involvement in decision making is **"**a fundamental principle of open, democratic societies" (p. 59)
5. **Objectives (with what purpose?)** (p. 3)

a. achieve better-informed and more sustainable choices.

b. increase public awareness, understanding and acceptance of decisions in the nuclear domain

c. building public confidence

6. **Form(s) of participation:** "Involvement may range from a basic low level of providing information, to consultation or higher levels that represent the sharing of a degree of power and influence." (p60.) Furthermore, it stressed the need for sustained engagement, that stakeholder involvement should go beyond sharing of information or consultation, but should be at least a two-way dialogue, that face-to-face interactions are an important complement to "town hall meetings", and that there is need for feedback on the decision making process, e.g. why certain feedback from a stakeholder was not followed.
7. **Who has the responsibility to act (and can influence the uptake of recommendations)** „top-level managers [within organisations], and sometimes political actors to ensure sufficient resources, a strategy, and a plan" (p9)
8. **How to implement it? "**The stakeholder involvement process needs to be adapted to the country-specific context" (p10) but also to the decision-context, e.g. policy, or specific projects and sites.

Additional information

9. **Final comments:/**

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title: Stakeholder Engagement in Nuclear Programmes**
4. **Publication Year: 2021**
5. **Institution (if official document) or project name (full): IAEA, IAEA Nuclear Energy Series , Stakeholder Engagement in Nuclear Programmes No. NG-G-5.1**
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** entire life-cycle.
2. **Step in the policy formation (provide enough details):** medium: consideration of options, decision of option; late: policy implementation, policy evaluation
3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

- *Stakeholders include legislators, media, government agencies and decision makers, the owner/operator, the regulatory body, suppliers, workers, communities near actual or potential sites, neighbouring countries, non-governmental organizations, and the public. The most influential stakeholders and societal opinion leaders will vary across countries and could include national and local government officials, heads of business and industry and leaders of non-governmental organizations. (pp. 1)*

- fig. 1 on page 6 includes also scientific community and universities, alongside local community, business and industry, employees, workers' unions, suppliers, government, NGOs, international community (incl. neighbouring countries)

- SSH: "however, the need to include professionals in social sciences

such as communication, opinion surveys and organizational psychology on the

team is broadly recognized." (pp. 17)

- *„A broad definition of a stakeholder is any group or individual who feels*

affected by an activity, whether physically or emotionally." (pp. 5)

Statutory stakeholders: required by law to be involved in any planning, development

or operation of a nuclear project.

Non-statutory stakeholders — those who have an interest in or will be directly or indirectly impacted.

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?):**

- open dialogue

- key principles: *"building trust, demonstrating accountability, exhibiting open and transparent communication, practising early and frequent consultation and communicating about risks and benefits."* (pp. 4)

- openness and transparency

- keep flexible and open minded about who will need to engaged, at what time and in what way (pp. 5)

- "*involvement needs to take place throughout the development and implementation of a nuclear programme. It has to be regular and frequent, not only when there is a problem or concern*" (pp. 7)

2. **Objectives (with what purpose?):**

- to ensure that objective information supported by science is provided, so that people do not form perceptions of risk based on information not supported by science : *"As a result of the challenges in communicating nuclear projects and in the absence of information sharing, dialogue and consulting, the public will form their opinions, trusting various sources of information (either personal or media), which may not be supported by science, and making an assessment of the perceived risks and possible benefits of nuclear programmes. In such conditions public opinions may not be formed based on facts and may be under the influence of, for example, poor communication or groups with opposing views, thereby jeopardizing confidence building in the project." (pp. 1)*

- Engaging stakeholders is about creating dialogue, including promoting the benefits of nuclear technology and explaining its risks or complexities, and taking into account the roles and inputs of all interested parties in the decision making process. Ultimately, stakeholder engagement is a genuine intention to understand the concerns, perspectives and interests of stakeholders to foster collaborative work. It is more than words and needs to be reflected both in actions and empathetic dialogue." (pp. 4)

- strategic objective along the entire lifespan of nuclear facilities because effective stakeholder engagement is a „crucial element of any programme" (pp. 5) and a „prerequisite *for a sustainable nuclear programme*."

- to strengthen government support *(pp. 6)*

- "Organizations can use their stakeholder engagement programme as an important way of demonstrating their compliance with various requirements and regulations." (pp. 6)

- "to foster a collaborative environment in which stakeholders can share their views, and in which these views are considered "(pp. 6)

- "that the aim of an effective stakeholder engagement programme is not necessarily to gain consensus, but rather for stakeholders to understand the basis for a decision and to have been involved, and thus have greater trust that the decision was appropriate as well as a greater trust in the decision maker." (pp. 7)

- "Increased public participation in decisions can promote a greater degree of understanding of the issues and can help to develop appreciation of the actual risks and benefits of nuclear technologies, such as those found in nuclear energy, compared with the risks and benefits of other energy sources." (pp. 7)

- "public engagement in the overall process can be crucial in building relationships based on confidence and trust, without which progress can be difficult if not impossible". (pp. 7)

- "Through stakeholder engagement, organizations and their stakeholders can work on compromise, sharing information and concerns to address issues before they negatively impact the programme." (pp. 10)

- *"It is important at the site selection stage to develop decision making processes that incorporate comprehensive local stakeholder engagement, to provide for local participation in those aspects of the process that most affect them, and in which they can have some influence on the outcome. The subsequent emergence of plans about which local stakeholders were unaware can cause irreparable damage to relationships and harm hard won trust that has taken months, even years, to build" (pp. 32)*

3. **Form(s) of participation**;

- stakeholder engagement involves partnership and relationship building as well as communication

- open dialogue

- consultation

-the level of interaction varies with regard to the particular stakeholder group concerned

- the final responsibility for decision making lies with the respective authorities and is typically informed by various stakeholder inputs. (pp. 7)

- the document advises to make a stakeholder mapping to identify those to "monitor, keep satisfied, keep informed, engage continuously (Fig. 2).

Appendix: Table 2: prioritisation methodology for stakeholders

- forms of participation differ per stage:

i) strategic decisions: deliberate and planned communication, e.g. national exhibition with electricity sources, lectures or expert panels, media opinion pieces

ii) siting: two-way communication, e.g. advisory councils or committees in the communities considered for siting, educational activities, media briefings, site visits for local communities, invite communities to volunteer their location for potential development

iii) construction: communication, social responsibility programme (address the needs of community, eg improvement of roads, schools, hospitals), tour of construction site;

iv) operation: regular involvement: notification, seminars, science camps, facility tours

v) decommissioning: communication, meetings with local opinion leaders , media releases

The appendix also mentions public opinion research, such as surveys and focus groups

4. **Who has the responsibility to act (and can influence the uptake of recommendations)**:

Shared responsibility of nuclear actors: *"Each organization with a responsibility in a nuclear programme — the government (in the case of a new programme through the nuclear energy programme implementing organization, or NEPIO, if it exists), the*

owner/operator, the regulator — has a role in carrying out effective stakeholder

engagement activities throughout the life cycle of nuclear facilities. These organizations engage with each other while concentrating on their distinct stakeholder engagement concerns. (pp. 2)

5. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

Steps to develop stakeholder engagement are presented in section 3.3.: establish a core communication team, evaluate resources and create a budget, develop a strategy engagement strategy and plan, implement the strategy and plan,

Each organization involved in a nuclear programme will develop its own stakeholder engagement strategy and plans. These can be discussed at an interorganizational level to strengthen coordination, message dissemination and, ultimately, safety and security. For a country introducing nuclear power, a single national stakeholder engagement strategy with its associated implementation plans is typically the starting point before the key nuclear programme organizations are established.

"The key organizations for stakeholder engagement in a nuclear programme are:

— National government;

— Nuclear regulatory body;

— Facility owner/operator." (pp. 25)

Develop long-term partnerships

Additional information

6. Final comments: refers to IAEA Milestone approach, which described stakeholder engagement as one of the 19 infrastructures needs for a new or expanding nuclear programme.

Although it talks repeatedly about engagement, involvement seems to be understood mostly s 2 way communication.

Although it talks the entire life cycle in the beginning of the document, including U mining, it does not mention any specific activity connected to that.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title:** Managing Siting Activities for Nuclear Power Plants
4. **Publication Year: 2022**
5. **Institution (if official document) or project name (full): IAEA,** IAEA Nuclear Energy Series, No. NG-T-3.7 (Rev. 1)
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** siting of new NPPs.
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation. Fully incorporated in the decision making process. Non-statutory SH: medium to late.
3. **Stakeholders:**

   The doc refers to „Statutory stakeholders" (to be involved from phase 1= the site survey stage) and „interested and affected parties" (to be involved starting with phase 2, i.e. the site selection stage).

   Statutory stakeholders are governmental, agency and local representatives; they are considered to be organizations and bodies that are, by law, required to be involved in the planning, development or operational activity (usually government entities).

   In site selection phase: involvement of additional technical, and possibly financial, stakeholders, as well as neighbouring countries if appropriate, in addition to the statutory stakeholders. Associations (such as non-governmental organizations (NGOs)) and the public, whether standalone populations living in the neighbourhood of the future plant or local institutions (communities, counties, districts), as well as all those stakeholders that are not usually linked to the siting/project team by any agreement, could be introduced at this stage to the project; involvement of well trusted organizations (i.e. regulatory authorities for safety and the environment, specific NGOs, etc.); creation of networks. Key stakeholders: decision makers, the public, the media and neighbouring countries. (p. 61).

   In site selection: local advisory group (not clear who is in), regulátory body, neighbouring countries, technical institutions and organizations, NPP manufacturers, competent institutions and/or

   owner/operators and regulatory bodies of countries that are using the same plant in the project.

   Among the „disciplines required for the project" in the *siting and evaluation*, the document mentions: socioeconomics; archaeology and historical monuments; human resources, training and capacity building; stakeholder involvement; community development/sociology; sustainability (p. 20).

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?):** transparency, substantive and frequent involvement of all stakeholders in siting and evaluation processes; "early, substantively and frequently"; open and transparent engagement with key stakeholders, including decision makers, the public, the media and neighbouring countries in the site selection phase.
2. **Objectives (with what purpose?):**

   - *management considerations:* "be better understood" (pp. 16, related to *management considerations*), which should reduce "resistance to the project";

   - *general for siting and site evaluation* "to consult with and include interested and affected individuals in the selection and decision process" (p. 26, *related to siting and site evaluation*); because it "improves the quality and legitimacy of a decision and builds the capacity of all involved to engage in the process. It can enhance trust and understanding among parties." (p. 26); to ensure "effective action" p. 26)

   - *site review*: communicating and obtaining information from stakeholders (p. 40), consultation (of statutory stakeholders?)

- *site selection*: identify SH and **potential membership in advisory group; provide useful inputs to the process**;

-site characterisation: ?

-pre-operational phase

3. Form(s) of participation: (beyond information provision): supposed to become more interactive and inclusive as the project advances.

- for *siting and site evaluation*: **"**dynamic 2-way process ", not just "dictating to the public or informing the public of decisions" (p. 26).

- *site review*: early consultation of statutory stakeholders(?): provide and obtain information

- *site selection*: more interactive: interviews with community members to identify interested and affected SH

- site characterisation: even more interactive; gather input from SH; create local advisory or working groups (not clear who is in)

- -pre-operational phase: only communication

4. Who has the responsibility to act (and can influence the uptake of recommendations): Government to provide full support for stakeholder involvement in siting and evaluation;

Owner/regulator to provide mechanisms for softer controls such as public involvement in the site survey stage (p. 40) .

5. How to implement it?: clarity of purpose, commitment to use the process to inform project actions; adequate funding and staff; appropriate timing in relation to decisions; full government support (providing legitimacy to the process).

Additional information

6. Final comments:

There is special chapter on stakeholder involvement in each chapter describing the different phase of the project.

The document mentions (p. 16, management considerations) that stakeholder involvement is one of the most challenging tasks, as the acceptability of the site is associated with the acceptability of the NPP project and a wide range of issues are likely to be under scrutiny by the public and other stakeholders**.**

The document talks about real and substantive participation at one point, but is very much focused on communication and occasional gathering of information or consultation. Not clear what the impact is on decision making. E.g. not clear how SH participate in ranking the preferred sites. No clear who is in the advisory group.

Refers often to Stakeholder Involvement Throughout the Life Cycle of Nuclear Facilities [21] and INSAG Series No. 20, Stakeholder Involvement in Nuclear Issues [22].

Fun fact: "However, one of the key issues while communicating with interested parties is to ensure that this sharing of information will not increase the land procurement cost."

5.3.5 Radiation protection

BIBLIOMETRIC INFORMATION
Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** NEA/OECD
3. **Document Title: Better Integration of Radiation Protection in Modern Society, Workshop Proceedings, Villigen, Switzerland**
4. **Publication Year: 2001**
5. **Institution (if official document) or project name (full): NEA**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other: radiation protection
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

   This workshop was designed to contribute to the analysis and understanding of the socio-political-economic framework of modern decision making in pluralistic, educated and democratic societies, including an understanding of stakeholder responsibilities. Given our current world, in which developments are driven by forces described by key words like deregulation, globalisation, "information society" and "learning society", this workshop was intended to improve understanding of the role of technical input, and in particular nuclear experience and knowledge, within societal decision-making processes.

   3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement: to address new developments in society regarding decision making, governance and engagement in radiation protection.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; ; It was developed with the following specific objectives:• share recent experience and lessons learned in stakeholder engagement in decision making;• explore new mechanisms for arriving at decisions and policies appropriately acceptable to a diversity of stakeholders;• identify how important cultural, socio-political and economic differences are considered and weighed in decision making; • encourage the identification and acceptance by stakeholders of responsibilities within the decision-making process; and • develop a better understanding of the differences between the role of the expert and that of the decision maker.
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; The papers in workshop address also the need for public participation in different forms, depending on the needs, Still this report is published in 2001 and many different forms have been developed since.

4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; not a focus of document
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The topic is not covered in report.

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

/

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** NEA/OECD
3. **Document Title: Policy Issues in Radiological Protection Decision Making, Summary of the 2nd Villigen Workshop**
4. **Publication Year: 2001**
5. **Institution (if official document) or project name (full): NEA**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other: radiation protection
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

   The summary document from the workshop in Villngen provides the evolution towards a democratisation of knowledge and of decision-making processes in radiation protection: this brief report provides an overview of the key themes emerging from the meeting. Beginning with a closer examination of the emerging expectations of society towards risk policies, it

   then moves on to attempt to provide a more adequate characterisation of thenew context of risk governance. The valuable experience that has already been gained in stakeholder involvement in risk assessment and management is then reviewed before tentative conclusions are drawn in the form of the key features of any attempt to achieve a better integration of radiation protection in society.

   3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement: to address new developments in society regarding decision making, governance and engagement in radiation protection.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **To stress and understand emerging societal expectations towards risk policies, new context of risk governance in society and experience in stakeholder involvement in radiological risk assessment and management.**
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; A unifying theme of the innovative approaches developed is the active involvement of stakeholders, but they cover a wide variety of radiation protection situations and range from society-wide priority setting, through industry-wide openness to societal concerns, to local-level responses to specific problems.
4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; not a focus of document
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The topic is not covered in report.

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

Page 21-22:

- *Perhaps the clearest lesson to emerge from the workshop is the need to foster mutual trust between the radiation protection community and society as a whole. This can be done in a variety of ways, but in each case the challenge for public authorities and experts is to identify the obstacles that stand in the way of mutual trust and to develop means of overcoming them.*

• There is no single blueprint for achieving this objective, and those involved must be sensitive to individual circumstances and develop context-specific approaches.

• Despite the need for context-specificity, certain principles must guide the development of innovative approaches including open-ness, inclusiveness, and a focus on developing procedures in common so that even if there is ultimately an agreement to disagree, all outcomes will merit respect.

• A significant challenge in developing such new approaches is the clarification of roles. There is frequently confusion about the respective roles of experts and political actors with regard to advice and decision making. Political actors can, for example, act as if scientific advice constitutes an instruction to decide in a particular way, while experts can sometimes encourage this perception. A strict

separation is probably impossible and certainly undesirable given the range of decisions at all levels that require to be made on radiation protection issues, but more open and inclusive procedures will call for a greater awareness of roles and responsibilities.

• As significant as this last challenge is, some assistance can be derived from a proper understanding of the nature of scientific rationality. Insofar as it is kept in mind that science produces knowledge and not certainty, it is easier to see where advice ends and where a political decision begins. At the point of decision, there is an implicit acceptance to act as if knowledge were certain, with all that this implies for risk and responsibility. For example, where stakeholders are directly involved in decision making, this can help to focus attention on the responsibility that is the concomitant of participatory rights.

• The fact that the point of decision constitutes such a decisive step in "converting" uncertain knowledge to an apparent certainty highlights the need for any innovative approach to radiation protection to adopt an explicitly learning orientation. Any engagement with stake-holders cannot be a once-and-for-all exercise but must envisage a future in which circumstances will change, whether in terms of the state of scientific knowledge or of societal attitudes and expectations.

• Nor is the need for a learning orientation confined to the possibility, indeed the probability, of change. It must be integral to any inclusive arrangement from the outset because it is fundamental to achieving the key objective with which this final summary began: mutual trust. In other words if an approach to radiation protection which involves stakeholders is to fulfil its potential, it must be established in such a way as to encourage mutual learning where all concerned are able to learn from their interactions. This new information must then be factored into ongoing development of common solutions that enjoy general approval.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** PM
2. **Document Author(s):** R.V. Osborne and F.J. Turvey (consultants to NEA)
3. **Document Title:** A New Approach to Authorisation in the Field of Radiological Protection (The Road Test Report)
4. **Publication Year:** 2003
5. **Institution (if official document) or project name (full):** The OECD Nuclear Energy Agency (NEA)
6. **Is it a review of recommendations:** Yes/**No**

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain: *radiological protection, i.e.*** ~~uranium mining, , siting (licensing) of new NPPs NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning~~, general ~~(energy policy development and adoption),~~ *or* other.
2. **Step in the policy formation (provide enough details):** Note by PM – this is not really clear, as the cases evaluated vis-à-vis a need for intensive stakeholder engagement (in order to support radiological protection) were not clearly specified in order to know which phases of policy formulation and implementation they concerned.
3. **Stakeholders:** Note by PM – I have not found stakeholders specified in any way in this publication allowing to identify relevant "helixes". The authors scored a lot of different cases (incl., for ex., radon in homes, cosmic rays etc.) in order make a ranking on the principle *the higher the score the stronger is the signal to the regulator that stakeholder input should be sought* (p. 59).

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?)** Note by PM – I have not found any other principles mentioned than *principles of radiological protection.*

5. Objectives (with what purpose?): *...to ensure that consensus on directions for improvement is reached among radiation protection experts from national regulatory authorities, and that this consensus is taken into account during the development of new approaches and international recommendations* (p. 3)

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or ~~create partnerships;~~

7. Who has the responsibility to act (and can influence the uptake of recommendations):

National-level regulators (*The outcome of the optimisation is an authorisation by the regulator of the particular exposure being considered, subject to whatever regulatory control appears to be appropriate on the basis of the optimisation of protection* (p. 39)) and *international agencies* (*Recommendations on those items 1-10 inclusive might be considered to be within the remit of* ***international agencies*** p. 38))

8. How to implement it?

Additional information

9. **Final comments:** This report is a review of the [road] testing of *1) characterisation of sources and exposures in order to facilitate the identification and social acceptance of possible radiological protection actions, and 2) a coherent process of authorisation of all justified exposures*

(p. 7). Note by PM – I do not find particularly relevant for the ECOSENS project, even though there are interlinks (i.e. case 6.4.1. for ex.).

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** PM
2. **Document Author(s):** Note by PM – this is mostly a compilation of selected workshop's participants' contributions/presentations/texts
3. **Document Title:** Stakeholder Participation in Radiological Decision Making: Processes and Implications. Third Villigen Workshop Villigen, Switzerland 21-23 October 2003
4. **Publication Year:** 2004
5. **Institution (if official document) or project name (full):** The OECD Nuclear Energy Agency (NEA)
6. **Is it a review of recommendations:** ~~Yes/No~~ Note by PM - texts by some of the workshop's participants in this 'proceedings' contain some parts which in fact review recommendations prepared earlier

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** ***radiological decisionmaking*** ~~uranium mining, , siting (licensing) of new NPPs NPP Life Time Extension, nuclear emergencies and post accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning~~, general ~~(energy policy development and adoption)~~, other.
2. **Step in the policy formation (provide enough details):** ~~early: agenda setting (incl. research agenda), problem formulation~~; medium: consideration of options, decision of option; ~~late: policy implementation, policy evaluation~~
3. **Stakeholders:** Note by PM – the contributions/presentations of various authors compiled in this workshop's proceedings concerned different types of stakeholders. Some are mentioned for ex. in the Table 2 on p. 32, but this structure does not correspond with the helixes referred here.

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** Note by PM – not really principles, but there are *Criteria characterising Inclusive Risk Governance* listed in the Table 2 on p. 57 that were an outcome of an event reported by Gilles Hériard-Dubreuil.

5. **Objectives (with what purpose?),** *The NEA Committee on Radiation Protection and Public Health (CRPPH) has explored the details and implications of stakeholder involvement in decision-making processes over several years. The roots of this interest are found in the Committee's 1994 Collective Opinion, Radiation Protection Today and Tomorrow* (p. 3). … The 3rd Villigen Workshop addressed the issues listed on p. 3-4, with the aims *objectives* to *Identify the benefits and pitfalls of stakeholder involvement; ? Identify generically applicable lessons and experience that can be of use to the NEA member countries in their own decision-making processes involving stakeholders; and Identify the policy-level implications of stakeholder participation in radiological protection decision making.*

6. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships **into Radiological Decision Making**;

7. Who has the responsibility to act (and can influence the uptake of recommendations) ~~e.g., nuclear regulator, waste management agency,~~ a ministry/ies and other public authorities responsible for Radiological Decision Making;
8. How to implement it? Note by PM – different contributions/presentations might have different opinions about this.

Additional information
9. **Final comments:** *The workshop ended with an interactive round table discussion, aimed at summarising the key issues and concepts, and providing information for the workshop's policy-level summary report. This summary report* was *published separately by the NEA* (p. 4).

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s):**
3. **Document Title:** The Process of Regulatory Authorisation. A Report by the CRPPH Expert Group on the Regulatory Application of Authorisation (EGRA). NEA No. 5372
4. **Publication Year:** 2006
5. **Institution (if official document) or project name (full):** OECD – NUCLEAR ENERGY AGENCY
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** general (radiation protection).
2. **Step in the policy formation (provide enough details):**

Early, but especially in the optimisation phase:

- Characterisation and screening, e.g; source identification, agreeing on **cases requiring stakeholder involvement**;

- Definition of the methodology of screening, specifically in defining a **threshold** in the score of the characterisation procedure that will trigger a detailed analysis and optimisation and, even more important, **at which threshold of the score the procedure should best foresee stakeholder participation**.

Optimisation: While in the previous steps stakeholders are involved at national level (industry organisations, consumer associations, NGOs), the optimisation process must involve the stakeholders affected by the specific situation being considered.

3. Stakeholders:

Quotes ICRP (2004): „parties who have interests in and concern about a situation". See also above.

Information on: (provide page number and/or relevant quote where available)
4. Underlying principles or values (why?), e.g. transparency, early engagement;

"Stakeholder involvement is the effort to look at public participation in environmental decision-framing and decision-aiding processes along the lines of the "popular-pragmatistic" model. "

Pragmatistic is understood with ref. to Beierle (2002) as the model that "stresses the importance of the act of participation, not only in influencing decisions but also in strengthening civic capacity and social capital". Popular is understood with ref. to Laird (1999): "makes people more aware of the linkages between public and private interests, helps them develop a sense of justice, and is a critical part of the process of developing a sense of community".

"Involving in the decision-aiding process those who are affected, so that they gain more control."

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

"Proven means to achieve the ***incorporation of values into decisions****, the* ***improvement of the substantive quality of decisions****, the* ***resolution of conflicts*** *among competing interests, the*

building of trust *in institutions as well as the* ***education and information*** *the workers and the public.*

Also **reinforces the safety culture** and introduces the **necessary flexibility in the management of the radiological risk** that is needed to achieve **more effective and sustainable decisions".**

"The list of benefits gained from the involvement of stakeholders, derived from the work done within the CRPPH, can be summarised as follows:

Responds to shifts in societal attitudes to science, industry and government.

Offers possibility of resolving tensions between economic and social concerns.

Helps to prevent disputes and conflicts where it is deployed ex-ante.

Helps to resolve disputes and conflicts where it is deployed ex-post.

Increases the substantive quality and sustainability of decisions.

Builds trust in institutions.

Educates and informs the public."

Practical experience has shown that stakeholder involvement is often the essential key to **obtaining societal (and hence, political) acceptance of the results of decisions**.

"*the involvement of local stakeholders must be seen has a continuing process with the aim, for the regulatory authority, of demonstrating to all involved parties the* ***compliance of the authorised exposure with the objectives of the process****, and to build trust in institutions. In this context, sociologists see public participation in risk and environmental related problems as a valid tool and an opportunity to* ***improve relationships among people and partnerships in the local communities****".*

"A mutual learning process must be foreseen that is inherent to the trust and consensus building processes."

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

Not specified.

"Most situations do not need extensive consultation and participation (see Appendix B), ***in many cases the characteristics of the source and exposure are such that no concern at all arises, or concerns involve only a restricted number of people in the affected workplace****. In such cases, the long standing procedures are still valid."*

"It should be noted, however, that in some cases stakeholders will not wish to accept the source or exposure situation, and that for them the "optimised solution" is for the exposure-causing situation should not be authorised. Under these circumstances, governments will have to decide whether it is best to go forward or not."

7. Who has the responsibility to act (and can influence the uptake of recommendations)

Regulatory authority (Focus on regulatory authorisation*): "Adopting a stepwise decision-making approach, dividing analysis of major decisions into steps, providing feedback after each step, and allowing legal recourse by the affected people if commitments are not kept."*

8. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

- Involving in the decision-aiding process those who are affected, so that they gain more control.
- Adopting a stepwise decision-making approach, dividing analysis of major decisions into steps, providing feedback after each step, and allowing legal recourse by the affected people if commitments are not kept.

Clear aims and objectives will aid in planning a dialogue process and, as well, criteria must be developed for evaluating the process with the people who will be participating. Although it is clear that the decider is responsible for making the final decision, arriving at this stage will require the clear definition of roles between regulators and stakeholders, and these should be well established from the beginning of all the phases of the decision-framing and decision-making processes.

Building and maintaining trust must be considered of primary importance by regulators and institutions.

Additional information

9. Final comments:

*There can be an **inherent conflict between the requirements of fair representation**, i.e. equal opportunity to participate and influence both processes and outcomes for anyone who feels potentially affected, and **competent participation**, i.e. construction of the most valid, from both social and technical point of views, understandings and agreements possible. A mutual learning process must be foreseen that is inherent to the trust and consensus building processes.*

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: FA**
2. **Document Author(s): OECD NEA**
3. **Document Title: Radioprotection Science and Application**
4. **Publication Year: 2016**
5. **Institution (if official document) or project name (full): OECD NEA**
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** other (radioprotection)

2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation

To some extent, the document touches upon both early and late stages of policy formation as it reconsiders the state of the art in radioprotection science to reformulate the problem. Through this process the report seeks to re-evaluate current policies or guidelines on radioprotection (ICRP guidelines)

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Stakeholders are here defined as beneficiaries of radioprotection: patients, workers, and citizens (p.43). Therefore this categorisation would fall within Helix 2 e.g. workers in the nuclear industry) and Helix 4 (e.g., local communities)

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** e.g. transparency, early engagement;

To re-evaluate current standards on ionising radiation exposure through the review and analysis of late scientific data to ensure level of protection is adequate.

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

To ensure that the current regulatory consensus expressed through international guidelines (ICRP) is a robust regulatory approach.

'The overarching objective of the radiological protection system is to contribute to an appropriate level of protection against the harmful effects of radiation exposure, without unjustifiably limiting the desired results from the human activity causing exposure.' (p.7)

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

Having stakeholders clean some areas post Fukushima accident: '*Parents, teachers and municipal employees teamed together in several locations, often advised by private experts from Tokyo having local connections, in order to clean schools and school playgrounds significantly so that children could play outdoors in seasonal clothing and use swimming pools, instead of being covered in long clothing or confined indoors with the windows shut*'. (p. 46)

Gather opinions from stakeholders and create partnerships with experts: '*Through a long stakeholder engagement process, members of the local population expressed their concerns (which often reflected their social role and activities as farmers, ranchers, mothers, children, etc.), and together with experts developed models of local lifestyles for which realistic dose estimates could be made*'. (p. 46)

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

There is no clear indication as of who has the responsibility to implement stakeholder engagement. However, there is hint that this responsibility is bound to the industry or experts

in charge of the technical project at stake (e.g. decontamination of a site, could it be after an accident or at the end of operations of an industrial infrastructure)

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

This quote sums it up:

'*in terms of the science and the values influencing radiological protection decisions, the following aspects seem to be very important in achieving accepted and sustainable decisions:*

- articulation of decision drivers of diverse types (physical, medical and social);

- transparency of the decision process, which includes a strong participative component;

- balance of decision drivers, i.e. coherence with both scientific knowledge and expressed social values;

- communication of knowledge and uncertainties;

- communication of decision rationale.' (p.46-47)

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

On making parents and teachers clean schools and playground post Fukushima: seeing this as 'stakeholders engagement' brings up serious ontological and ethical issues that should be addressed in discussions among ECOSENS partners.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** LG
2. **Document Author(s):** Perko, Železnik, Mays, Diaconu, Kralj & Koron
3. **Document Title:** Communication recommendation related to IR
4. **Publication Year:** 2016
5. **Institution (if official document) or project name (full):** Project EAGLE Project (Enhancing Education Training and Communication Processes for Informed Behaviors and Decision-Making Related to Ionizing Radiation Risk) co-funded by the European Commission under the Seventh Euratom Framework Programme for Nuclear Research &Training Activities

1. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),

- other: Ionizing Radiation Risk

2. Step in the policy formation (provide enough details):

- early: agenda setting (incl. research agenda), problem formulation;

  "Early engagement of relevant stakeholders should be a formal part of the early planning of any activity related to ionizing radiation" (p.15)
- medium: consideration of options, decision of option;
- late: policy implementation, policy evaluation

3. **Stakeholders:**

EAGLE project provide some recommendations for improved communication on ionizing radiation from different perspective, involving those who provide most of the information (like professionals, regulatory authorities, nuclear expert organisations, medicine representatives, nuclear power industry, ….), journalists (from classical media to the social media experts)

- Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Technical specialists
- Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
- Helix 3: the natural environment, e.g. environmental NGOs;
- Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
- Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?),

-The principles of transparency, trans-disciplinarily and inclusiveness:

"Mutual learning and transparency among all stakeholders, including scientists and lay people, is vital. A technocratic approach, where 'experts know best and can decide for the people who do not understand the technical issues' should be switched to a socio-centric communication based on public participation with which the gaps between experts and stakeholders can be bridged" (p.15)

"A trans-disciplinary approach in risk communication (collaboration with natural science, social sciences and humanities) is important in order to develop appropriate, responsible and value based risk communication" (p.15)

- Communication should be seen as an important form of stakeholder engagement

- Converging values and differences between different stakeholder groups should be identified
- Stakeholder engagement has to be an integral part of a decision-making.

5. Objectives (with what purpose?),

"The EAGLE project aimed specifically at coordinating the information and communication strategies related to ionising radiation for the general public, in order to get a better understanding of the effects of ionising radiation"

It is important to improve public knowledge by providing relevant and timely information in an understandable way. This process should be continuous.

6. **Form(s) of participation:**

Risk communication should be an important form of Stakeholder engagement, based on dialogue and two-way communication rather than a simple provision of information. Communication has to be more than just an education and/or marketing process. It should be part of a real engagement with the public for a mutual understanding of reasons, benefits and risks, no matter what IR application is approached. Communication about IR should correctly balance the benefits and risks, and its content should be adapted to the target audience.

7. **Who has the responsibility to act (and can influence the uptake of recommendations)**

Institutional sources, scientists, mass media, and all relevant decision makers

8. **How to implement it?**

Recommendations related to communication with members of general public and informed civil society in order to support informed decision-making about IR (p.14, 15):

- The EUROBAROMETER survey should continue to address questions regarding the use of ionizing radiations and their potential risks in order to capture current population's needs, changes and trends in the people perceptions.
- Availability of information for the whole population, at any time, using a large diversity of means and opportunities for the education and training should be a priority of the sources' communication program.
- Build confidence and maintain it (during normal situation and during crisis), based on professionalism, transparency and honesty.
- Knowledge-based society requires involvement of citizens at a large scale, including local communities, teachers, students, mothers, volunteers, etc.
- Continuous collaboration of mass media with institutional sources and scientists
- In order to better focus ionizing radiation research, interactions with, and experience exchange among platforms and projects, are essential.
- An analysis of the opinion of the different stakeholder groups might help to reveal the differences regarding the concerns and demands coming from different segments.
- The analyses of previous stakeholders' experiences and lessons learned related to ionizing radiation applications as well as health protection campaigns should be considered before developing the communication and stakeholder involvement activities
- Integrating economic and social concerns into decision making process can be accomplished by forming partnerships with impacted communities or stakeholders and taking time to learn about community quality of life and environmental justice concerns.

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** C. Turcanu, B. Abelshausen, R. Geysmans , M. Van Oudheusden, G. Meskens (SCK•CEN), C. Schieber, T. Schneider (CEPN), N. Zeleznik (EIMV), C. Pölzl-Viol (BfS),

3. **Document Title: Enhancing Stakeholder Participation in the Governance of Radiological Risks, Findings and recommendations from the ENGAGE project**
4. **Publication Year: 2020**
5. **Institution (if official document) or project name (full): ENGAGE project, EJP CONCERT, D 9.94**
6. **Is it a review of recommendations: Yes**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other: **Radiation protection in EPR&R, medicine, Indoor radon**
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

   The deliverable is addressing recommendations for stakeholder engagements in EPR&R, medical applications and indor raddon exposures for all steps in policy formulations.

   3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement; The document is a summary from several investigations performed in ENGAGE project and is devoted to the stakeholder's engagement in emergency preparedness, response and recovery, medical application of ionizing radiation and radon issues. The focus is why, when and how stakeholders are engaged and to develop the guidelines for better engagement for these 3 different fields.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **The objective of report is to develop recommendations on stakeholder engagement in 3 different fields of ionizing radiation (like EPR&R in connection to nuclear energy production, medical applications, and indoor radon exposures).**
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; Recommendations very broadly describe different forms of participation for different stakeholders: from the ones who are responsible, to the ones who are interested or really impacted (like patients, home owners, or potentially impacted by the nuclear accident).
4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; According to report responsibility for fulfilling recommendations is with the responsible authorities (Nuclear, civil protection, national, regional, local, bodies involved in management of emergency and recovery, authorities responsible for elaboration of radon action plans and other involved,

education institutions at different levels (nurses, medical staff, authorities), professionals in medical radiation protection, associations, RP authorities,..

5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The whole report advise the approach to be taken for individual recommentations: in total there are 14 recommendations: 6 in EPR&R, 5 for Indoor radon and 3 for medical applications. For each recommendation there are: why it should be done, how can it be done, and who should implement recommendation. The steps include actions like, awarness raising, organisation of stakeholders to debate and get feedback, sharing lessons learned,organising informal networks, develop tools for involvement, ... However the report does not include resources issues.

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

Main recommendations (p5):



BIBLIOMETRIC INFORMATION
Information available in the database **1. Coder initials: NZ**

2. **Document Author(s):** NEA/OECD
3. **Document Title: Towards a Shared Understanding of Radiological Risks: Summary Report of the NEA Stakeholder Involvement Workshop on Risk Communication**
4. **Publication Year: 2021**
5. **Institution (if official document) or project name (full): NEA**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

10. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other: radiation protection
11. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:
    NEA member countries to share perspectives and document lessons learnt in risk communication, identifying what has been effective and what has been less effective in the different cases. The workshop explored issues from developing and implementing risk communication approaches and learning from non-nuclear sectors to engaging with civil society and younger generations, as well as with the media and various influencers.The report deals with different steps and advice to establish dynamic process from early on.
12. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement: to share perspectives and document lessons learnt in risk communication, identifying what has been effective and what has been less effective in the different cases.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; The workshop stressed that exposure situations can involve a wide array of safety aspects beyond radiation exposure, and that the impacts of such situations, and of the protective actions that have been implemented, may have an impact on the social, economic, health and individual aspects of the lives of individuals who are either directly or indirectly affected. Faced with such complexity, risk communication must address all of these elements in order to identify the best protection options, and for this an atmosphere of trust is essential. It was broadly agreed, however, that the greater risk in risk communication is a lack of communication.
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; Any form which fulfil the needs of stakeholders – see the recommendations below.

4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; it is clear that responsible authorities and institutions should take the responsibility. (p9) „*Dialogue with stakeholders should be an institutional requirement for regulatory authorities.*"
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The goal of risk communication activities is to adress concerned stakeholders to better understand the risks and consequences of potential radiation exposure, and thus enable them to make informed decisions regarding radiological protection options.The approach should be based on step by step approach and should alow flexibility (see point two in the key messages below).

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

(p.9-10) Overall, workshop discussions confirmed the general belief that achieving effective risk communication for a common understanding of radiological risks to address concerns and to engage with stakeholders under different prevailing circumstances can be a complex undertaking.

The key messages reached during the workshop can be summarised as follows:

• Risk communication is a multidimensional, socially and technically complex, resource intensive activity.

• Communicating risk is not a one-step process but a dynamic process that: – needs time to be established in a sustainable way; – should evolve in an anticipated manner as society and stakeholders' needs and expectations evolve. Attempting in advance to identify concerns that stakeholders are likely to have in a given circumstance can facilitate the preparation of risk communication and engagement activities.

• Dialogue with stakeholders should be an institutional requirement for regulatory authorities.

• Non-governmental organisations (NGOs) and local stakeholders have a specific understanding and knowledge of the local context, which can be particularly useful to national, regional and local decision makers.

• Local and long-term engagement is key to obtaining and maintaining trust.

• A simple and visual radiation exposure scale could be a useful tool for communicating radiological risks.

• Messages should be succinct, following, for example, the 3/27/9 rule of 3 messages using 27 words delivered in 9 seconds. These messages should focus on addressing the concerns of the specific audience.

• Efficient and effective radiological risk communication highly depends on: – The way in which the message and communication tools are adapted to meet the audience's needs and address its concerns; – The confidence that recipients have developed for the organisation or individual providing the information; – Experience from past situations.

• Social media is a key tool, in particular when reaching out to younger generations and when identifying concerns in advance. However, monitoring and swift responses are required, which can be resource intensive.

• A multidisciplinary team, including experts in various fields – radiation specialists, engineers, researchers and representatives of the medical community – could help with

communication and engagement activities. These experts should be trained in risk communication techniques.

• A path forward to creating harmonisation and consistency in radiological risk communication could be to first reach international consensus on the objective attribute of the effects of radiation and on the potential subjective inference of radiation risk.

5.3.6 RWM

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** NEA/OECD
3. **Document Title: STAKEHOLDER CONFIDENCE AND RADIOACTIVE WASTE DISPOSAL, Inauguration, First Workshop and Meeting of the NEA Forum on Stakeholder Confidence in the Area of Radioactive Waste Management**
4. **Publication Year: 2000**
5. **Institution (if official document) or project name (full): NEA**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other:
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

The summary document from the workshop in Paris provides the evolution towards more inclusive RWM from very begining and reports about the discussions: five speakers addressed the FSC and gave the views and needs of implementers, regulators, local elected representation, national legislators and administration. The presentations often highlighted the siting of national facilities as a crucial step in any programme where stakeholders are drawn to explore and confront issues and interests. After, in the workshop, five topics were presented and discussed: Topic 1: The Changing Environment for Waste Management Programmes, Topic 2: Trust and the Institutional Framework, Topic 3: Stakeholders and the Public: Who Are They?, Topic 4: Is There a New Dynamics of Dialogue and Decision Making?, Topic 5: Are the Waste Management Institutions Set Up for Achieving Stakeholder Confidence Over the Long Term?. The report describes the new socio and societal environment under which the establishment of RWM facility must be realised. *"Partly due to a sensitivity of the public on all matters connected to protection of the environment, nuclear power, and especially nuclear waste; partly because of the unique nature and required longevity of the proposed disposal concepts; and partly because of the changing societal conditions in the processes of decision making; the decisions whether,*

when and how to implement geologic disposal will need a thorough public examination and involvement of all relevant stakeholders."

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement: to address new developments in society regarding decision making, governance and engagement in RWM.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **To stress and understand emerging societal expectations towards risk policies, new context of risk governance in society and experience in stakeholder involvement in RWM.**
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; Proactive participation of citizens must be assured by the responsible authorities including: (p8-9) – *An increasing societal emphasis on environmental protection enhances the role of the Environmental Impact Assessment as a framework for dialogue. Examine how the EIA is developing as an umbrella process for decision making.,– Explore best organisational behaviour and culture with attention to trust building, programme accessibility, and the recognition of uncertainty without destroying confidence.– Seek ways of consulting and involving broader segments of stakeholders.* **(***p10): The municipality experience illustrates the working of a national system for dialogue in which the disposal concept is reviewed every three years and in which the host municipality is given an explicit role. The municipality decided to adopt an active role in the dialogue. The alternative, a passive approach, was examined and rejected. This stance has gained heightened respect for the political system. An early start to the EIA process in this potential host community was accompanied by a clearly defined decision-making process, a commitment to openness and clarity by all parties, and economic support for competence-building in the municipality. Each partner needs to have a clearly defined and well-communicated role both for the national dialogue and under the EIA framework:– National government puts forward a clear policy and legal framework.– SKB proposes disposal methods and siting.– Safety authorities act as the "people's experts", available throughout the process.– Local stakeholders are qualified to represent and evaluate their current and future needs.*
4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; it is clear that responsible authorities and institutions should take the responsibility for support of stakehoders in establishment of RWM facilities.
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) In several places of the report resources for the stakeholder engagement is mentioned in particular to the local host communities, and in particular during the site selection. Some details are given in Topic 4, where "*K. Andersson presented a framework, developed in the ongoing European Commission RISCOM project, for understanding transparency. To achieve transparency there must be procedures allowing decision makers and the public to verify claims of truth, legitimacy and authenticity. Transparency also implies that the environment of implementers and other stakeholders be sufficiently demanding, and that critical questions be raised from different perspectives.*

Waste management schemes and programmes can be evaluated on their degree of transparency, of public involvement in decision making, on manners of representing the public, and on the style of consensus-building. (p20) „*V. Vanhove (ONDRAF/NIRAS) presented Belgium's revised approach to siting a low- and intermediate-level waste facility. Key factors in the new approach are the clear identification and separation of ethical and technical choices, and the pursuit of partnerships with local municipalities. The extent of trust and reliance placed on the decisions of the participating communities is an outstanding feature of the program, and aroused the curiosity of the group. The impact upon the implementer was clear, as the Communication department of ONDRAF/NIRAS is fostering organisation-wide dialogue on what it means "to dialogue". The new dynamics of dialogue and decision making were characterised in discussion as a shift from the traditional "decide, announce and defend" model, for which the focus was almost exclusively on technical content, to one of "engage, interact and co-operate" for which both technical content and quality of process are of comparable import to a constructive outcome."*

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

(p17-*18)*: *Topic 3: Stakeholders and the Public: Who Are They?*

M. English observed that public participation opportunities for environmental risk decisions have expanded in recent year. These, however, fail to distinguish among different groups in the public, and perpetuate the division between decision-making agencies and citizens. These deficiencies have opened the door for stakeholder involvement.

Broadly speaking, four categories of stakeholders are found: "risk losers", "risk gainers", "risk perpetrators", and "risk managers". These stakeholders are likely to bring not only radically different perspectives to the decision process and its outcomes, but also different abilities to participate. Diffuse and long-term risks represent the hardest case of all for stakeholder involvement. Both losers and gainers are not only numerous and scattered; most are not born yet. And while key present-day perpetrators and managers can sometimes, with difficulty, be identified and engaged in deliberations, the longevity of the risk means that their successors will inherit the consequences of past decisions without having had the opportunity to influence those decisions.

In considering diffuse, long-term environmental risks – especially those with large uncertainties and potentially grave consequences, such as those typified by high-level radioactive waste disposal there is a need to move away from a stakeholder-centred model of environmental decision making and towards a model that:

1. draws upon the concept of collaborative learning, and

2. emphasises the long-term common good.

Emphasis on the long-term common good calls upon people to think of themselves, not simply as self-interested stakeholders, but also as trustees for the well being of other people and the

environment. The decision process should challenge prevailing knowledge and values without being

adversarial. It should be deliberative and iterative, with incremental steps revisited as needed. And it should have as a goal a sustainable future for all, rather than focusing on satisfying the interests of stakeholders who happen to be present. This ideal is far easier to prescribe than to implement. Nevertheless, it should not be abandoned as an ideal.

D. Appel presented a detailed chronology of the Gorleben siting process, showing how great a gap there can be between a legal requirement for public participation, and effective stakeholder access and input. A case analysis shows that in early stages of development of the German waste disposal concept (1960s-70s), public participation was nil and even scientific peer discussion was extremely limited. Participation in deciding to investigate the Gorleben salt dome was formally limited to representatives of selected stakeholder groups: The decision on underground investigation was not open, and so participants had no actual decision latitude. Funding was provided for counter expertise, but this was not sufficient to prepare for the intensive discussion on the results of investigations. The perception of a gap between geological realities and expected outcomes of a safety analysis also contributed, at Gorleben, to loss of confidence. This distrust hit not only the politicians responsible for the decision but, to some extent, the scientific agencies and their representatives as well.

Mr. Appel drew the following lessons from the German experience:

- *Credibility is based on confidence in the responsible institutions. The latter is dependent on long-term behaviour.*
- *It is very difficult, if not impossible, to heal early procedural mistakes affecting the credibility of the entire subsequent process. The only way may be to go back to a point before the mistake was committed.*
- *A comprehensive disposal strategy, related technical concepts and proven siting and assessment methodologies are needed. Changes in strategy, concepts and methodologies must be convincing and must be discussed in detail prior to implementation.*
- *Scientific arguments can be misused as tactical elements in politics. That may reduce not only the politicians' but also the site-selecting scientists' credibility.*
- *Before starting a licensing procedure the discussion about benefits/risks and justification of the project and its alternatives must be initiated. In all phases of the decision making process public participation is essential.*

So far there is no approach, in Germany, to phase-related stakeholder and public participation during decision making on final disposal of radioactive waste. The working group "Methodologies of Disposal Site Selection", therefore, will develop not only a procedure for site selection but also new approaches to public involvement in a stepwise decision making process.

S. Webster chaired the Working Group 3. M. Westerlind presented the current siting debate in Sweden from the perspective of the regulatory bodies.

The group found that the term "stakeholders" could signify different things to different people: it can mean someone with a vested interest or a preconceived view, or simply someone with a role to play in the process. This latter definition allows the regulator, as well as international rganisations, to be considered stakeholders. However the designation of the regulator as a stakeholder is not acceptable in all countries.

It is relatively easy to define a list of stakeholders in the sense of persons or groups having a clear

role or interest in the waste management process. The involvement of any group will vary over time and depend upon the stage in the process: the procedural step defines who the most relevant stakeholders will be. As an example, a Strategic Environmental Assessment (SEA) affects general "policies, plans and projects" and draws in national and/or regional government and, likely, NGOs. An Environmental Impact Assessment (EIA) in contrast bears upon a specific project proposal and implies increasing involvement of local groups and the regulator. EIA is becoming the main legislative instrument assuring public involvement in general in the siting process, and as such should be encouraged and developed. It represents a way of treating radioactive waste siting issues on a par with other environmental projects of a controversial nature.

The Working Group concluded to a majority that the term stakeholder should be understood as somebody with a role to play in the process. The identification of stakeholder groups is less difficult than the definition of interactions among groups and their respective roles, responsibilities and rights.

Stakeholder groups may not be characterised by unitary opinions or needs. Regarding future stakeholders, the opinion was that we can only do what we think is best for them, but there was recognition of the conflicting priorities of leaving a passively safe situation, or, leaving enhanced possibilities of intervention.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: PM**
2. **Document Author(s):** about 20-25 participants of the workshop (mostly from Finland)
3. **Document Title:** Stepwise Decision Making in Finland for the Disposal of Spent Nuclear Fuel (Workshop Proceedings, Turku, Finland, 15-16 November 2001).
4. **Publication Year:** 2002
5. **Institution (if official document) or project name (full):** The OECD Nuclear Energy Agency (NEA)
6. **Is it a review of recommendations:** ~~Yes~~/**No**

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** ~~uranium mining, , siting (licensing) of new NPPs NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation),~~ siting (licensing) of **SNF** waste repositor~~ies~~, ~~radioactive waste management (storage, treatment & conditioning), decommissioning, general (energy policy development and adoption), other~~.
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation
3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-

based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other). *Finnish stakeholders included representatives of the nuclear electric utility (TVO), the company responsible for siting, constructing, and operating the facility (Posiva Oy), national, regional, and local authorities: the Radiation and Nuclear Safety Authority; the Ministry of Trade and Industry; the Ministry of Environment; the Regional Environment Centre; and municipal government (Eurajoki), researchers from the universities and the national technology research centre (VTT), Parliament, and local opposition movements (Lovisa movement, Kivetty Movement). Foreign participants included the members of the NEA group "Forum on Stakeholder Confidence" (FSC) or their representatives and nominees* (p. 21).

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?) Note by PM:** in this workshop proceedings, I could find only indivudual authors' contributions, i.e. not any attempt to generalise anything related/relevant to principles or values. Several of the individual authors listed/mentioned some principles or values explicitly or implicitly. The key principle mentioned in my opinion concerned *The absolute veto authority of any municipality in siting the repository* (p. 128), i.e. that *the municipality is a major stakeholder, and its veto right is a very important element* (p. 13); and also the principle that *differences between risk perception by experts and lay people have to be understood and public concerns need to be taken into account* (p. 13).
2. **Objectives (with what purpose?):** The objective of this document was to compile information and presentations/reports of the *workshop* that *provided the opportunity to present the history leading up to the Decision in Principle* [to site the Finnish SNF final disposal facility]*, and to examine future perspectives with an emphasis on stakeholder involvement* (p. 3).
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, ~~or create partnerships;~~
4. **Who has the responsibility to act (and can influence the uptake of recommendations)** *the company responsible for siting, constructing, and operating the* [SNF final disposal] *facility (Posiva Oy),*
5. **How to implement it? Note by PM:** in this workshop proceedings, I could not find any section/text dedicated to any future implementation of any particular recommendations.

Additional information

6. **Final comments:** this workshop proceedings concerned only Finland whose unique situation/culture was emphasized a few times.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** AL
2. **Document Author(s):** Nuclear Energy Agency (NEA) and Organisation For Economic Co-Operation And Development (OECD)
3. **Document Title:** Dealing with Interests, Values and Knowledge in Managing Risk
4. **Publication Year:** 2003
5. **Institution (if official document) or project name (full):** Workshop Proceedings Brussels, Belgium 18-21 November, 2003
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS
Information to be determined as part of the review process 1. **Domain:** radioactive waste management, risk management. 2. **Step in the policy formation (provide enough details):** the various workshops covered all the different steps in policy *3.* **Stakeholders:** stakeholders from all helixes were covered
Information on: (provide page number and/or relevant quote where available) **4. Underlying principles or values (why?:.** Values or principles were not often explicated, but some overarching topics were fairness and legitimacy. Furthermore on p. 24: a. an interactive approach, a transparent and strictly controlled process, a fair allocation of competence between the actors, the recognition that participation in siting a disposal facility means participation in shaping the region's future, and the assumption that participation means responsibility. **5. Objectives (with what purpose?):** to make decisions that take the interests and values of all involved parties into account, policy acceptance **6. Form(s) of participation:** **a.** public dialogues, and the local partnerships **b.** informing the public and letting them develop their own opinion, taking local knowledge into consideration, integrating public concerns **7. Who has the responsibility to act (and can influence the uptake of recommendations)** Not clear from the text **8. How to implement it? "**different interests and groups should be represented in the local partnerships and their views should be reflected in the outcomes. Processes should be transparent while outcomes should be clear and understandable to all concerned" (p. 20). A clearly defined framework, even for informal procedures
Additional information ***9.*** **Final comments:** the document is an overview of different workshops in which various participants (researchers, media, private citizens,…) presented their ideas, each with their own focus but all somewhat related to better integrate the different values and interests of various stakeholders. The above answers thus reflect/summarize the various presentations and point of views but are not explicitly mentioned as "good practices" or recommendations by the authors.

BIBLIOMETRIC INFORMATION
Information available in the database 1. **Coder initials:** PM 2. **Document Author(s):** NEA / Claire Mays 3. **Document Title:** Stakeholder Involvement Techniques. Short Guide and Annotated Bibliography 4. **Publication Year:** 2004 5. **Institution (if official document) or project name (full): Nuclear Energy Agency (NEA)** 6. **Is it a review of recommendations:** Yes/**No**
CONTENT ANALYSIS
Information to be determined as part of the review process

1. **Domain:** ~~uranium mining, , siting (licensing) of new NPPs NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation~~), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), ~~decommissioning, general (energy policy development and adoption), other.~~
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; ~~late: policy implementation, policy evaluation~~ **Note by PM:** the study states that *The actual implementation phase is beyond the scope of this study, but relevant documents and considerations are signalled* (p. 15).
3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

   Note by PM: the study states that *In RWM, a list of possible stakeholders might include: The general public; demographic groups, (like young people); residents, representatives or elected officials of local communities; national/regional government ministries/departments; regulators; national/local NGOs or CSOs, 9 local pressure groups; trade unions; the media; the scientific research community; implementing organisations; the nuclear industry; contractors; waste producers; international organisations* (p. 14),

   .

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?) -** *Together with **openness**, **accountability**, **effectiveness** and **coherence**, **participation** today is recognised as one of the five "principles of good governance* (p. 13). **Note by PM:** I have found just one footnote mentioning values (no. 2 on p. 13) - *At the 5th Regular Meeting of the FSC in June 2004, a topical session will address "Decision-making processes at the strategic choice stage: How different stakeholders are involved, **and which values are taken into account**"*... I.e. it looks like this study was published prior to the relevant related discussion about underlying values.
2. **Objectives (with what purpose?) -** At the close of the Forum on Stakeholder Confidence's (FSC) topical session „on Stakeholder involvement tools: Criteria for choice and evaluation" (a part of the 4th regular FSC meeting held in Paris in May 2003), *it was agreed that the FSC would prepare a short guide on stakeholder involvement techniques* (p. 3).
3. **Form(s) of participation – Note by PM:** I assume this study is about all the potential forms of stakeholder involvement (which is not explicitly stated, but seems to be implicitly clear from this study).
4. **Who has the responsibility to act (and can influence the uptake of recommendations) Note by PM:** this was not explicitly mentioned, but instead this study contains this text: *This publication is intended for a general readership of persons considering stakeholder involvement* (p. 15).
5. **How to implement it - Note by PM:** on p. 29 – 34, this publication lists and shortly describes techniques of implementation relevant to this study.

Additional information

6. **Final comments:** as this study was written by Claire, she might have a look whether I analysed the content of this study correctly.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s): IAEA**
3. **Document Title:** Low and Intermediate Level Waste Repositories: Socioeconomic Aspects and Public Involvement. *Proceedings of a workshop held in Vienna, 9–11 November 2005*.
1. **Publication Year:** 2007
2. **Institution (if official document) or project name (full):** IAEA, IAEA-TECDOC-1553
3. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** radioactive waste management.
2. **Step in the policy formation (provide enough details):** early (?): "from planning phase"; medium: facility location, site characterization, design concepts, performance objectives; late: monitoring methods, routes for delivery, community incentive programmes
3. **Stakeholders:** „The audiences for public involvement activities may include representatives from **local communities**, administrative units (e.g. national, regional and local), **government** officials, **indigenous peoples** where appropriate, regulatory agencies, community and public interest groups, **environmental organizations**, **industry** and trade groups, the **scientific community** and the **news media**. Communities along transport routes may also indicate interest. Significant levels of interest may exist at **regional and national** levels throughout the project development phase. Interest may also extend to **neighbouring countries**, [..]") (pp. 1).

   On p. 5 it talks about „The general public, politicians, regulatory authorities, regional leaders, business owners, host community leaders, professionals, educators, local and regional work force, non-government organizations, bordering country populations", [technical]academic institutions, developer organizations, regulatory authorities, mas media.

   all helices, but SSH not mentioned explicitly

   stakeholders are those „interested".

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?):** inclusive approach from the beginning of the planning process; provide opportunity to express views and access to information on how comment have been considered and addressed
5. **Objectives (with what purpose?):** gain public trust (e.g. in the responsible organisation and reviewing agencies), which in turn is expected to increase public acceptance and project approval.

   "Establishing trust can be enhanced when an inclusive approach to public involvement is adopted from the beginning of the planning process to help ensure that all those who wish to take part in the process have an opportunity to express their views, and have access to information on how public comments have been considered and addressed" (pp. 1).
6. **Form(s) of participation:** "In addition to information dissemination and education, public involvement must include opportunities for the public and the local and regional government entities

to be a part of the decision making progress for the waste management facility. Facility location, site characterization, design concepts, performance objectives, monitoring methods, routes for delivery, community incentive programmes are all topics for stakeholder input and involvement" (pp. 5)

7. **Who has the responsibility to act (and can influence the uptake of recommendations):** not clear, but it is framed in the context of creating trust in the responsible organisation and reviewing agencies
8. **How to implement it?** According to established processes to make public decisions.

Additional information

9. **Final comments:** based on review of summary and conclusions from the workshop (not each individual paper presented at the workshop).

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** SL
2. **Document Author(s):** G. Hériard Dubreuil; S. Gadbois; T. Schneider; C. Mays.
3. **Document Title:** European-level Guidelines for the Inclusive Governance of Radioactive Waste Management
4. **Publication Year:** 2010
5. **Institution (if official document) or project name (full):** Project COWAM In Practice (CIP) Jointly funded by the European Commission (contract FI6W-036455) and institutions in the five participating countries
6. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),
   - other: ……..

2. **Step in the policy formation (provide enough details):**
   - early: agenda setting (incl. research agenda), problem formulation;
   - medium: consideration of options, decision of option;
   - late: policy implementation, policy evaluation

3. **Stakeholders:** Mentions specially local stakeholders.
   - Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Technical specialists
   - Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
   - Helix 3: the natural environment, e.g. environmental NGOs;
   - Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;

- Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?),

To help prepare the way for more inclusive governance of RWM in Europe.

5. Objectives (with what purpose?),

CIP, a cooperative research process led in five countries, is a three-year experiment aimed at developing democratic culture in the context of RWM. The CIP process was based on:

- Multi-stakeholder cooperation, with specialist support.
- Reframing RWM issues.
- Working out new strategic positions (especially by local players).
- Self-reflection on frameworks and processes to foster joint action.

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

The participation of local stakeholders in RWM decision making does not take place in a vacuum. The local level is inevitably impacted by the decisions taken at other governance levels. Integrating with issues, players and forums (formal and informal) at the other governance levels (region, State) is therefore a key condition for local engagement to be meaningful and sustainable.

Multi-level governance is facilitated when the decision-making process is designed

to include: (p. 10).

- A clear stepwise decision-making process identifying phases, milestones, roles for different levels of decision, and rules for assessing readiness to go to the next step.
- An institution tasked with helping the process move forward while guarding quality.
- Mechanisms for involving the different levels and balancing their input.
- Mechanisms for ratifying and validating decisions, including broad-based democratic expression. The right and opportunity for local players to express common concerns at upper decision levels, and to influence the relevant decisions.
- A pragmatic plan for local engagement (legal frameworks give the minimum opportunities that should be available, but RWM is likely to require a higher level).
- Support for the engagement of local communities (e.g. through financial engagement packages).
- Legal and financial means to develop adapted local structures (e.g. Local Committees) that will help organize local participatory democracy.
- Classical routes of communication provided by representative democracy (Mayors, Members of Parliament …) but also interaction between the local participatory process and the regional and national decision making processes.
- The ability to find recourse if decisions are taken unfairly.
- Regular independent assessment of processes.

7. Who has the responsibility to act (and can influence the uptake of recommendations)

Government and policymakers, including a broad range of stakeholders, especially local ones.

8. How to implement it?

Developing Local Democracy

- Capacity to assess whether it is justified and desirable to site a RWM facility in a particular territorial context.
- Arrangements for multi-level governance: how national, regional, and local decision processes fit together, and the possibility for local players to influence other levels.
- Quality of local democracy: how the diverse local players work together to address RWM issues.
- Development of the necessary skills and know-how for follow-up. Integration of RWM activities into a broader sustainable development project for the territory.

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: CT**
2. **Document Author(s):**
3. **Document Title:** Geological Disposal of Radioactive Waste: National Commitment, Local and Regional Involvement. A Collective Statement of the OECD Nuclear Energy Agency Radioactive Waste Management Committee Adopted March 2012. NEA No. 7082
4. **Publication Year:** 2012
5. **Institution (if official document) or project name (full):** OECD – NUCLEAR ENERGY AGENCY
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** radwaste management
2. **Step in the policy formation (provide enough details):**

Early: from the planning phase.

3. Stakeholders:

„Any person, group or organisation with a role to play or an interest in the process of deciding about radioactive waste management. In this statement, "stakeholder" and "actor" are often used interchangeably."

Some categories are named in Table at pp. 16: policy makers, safety authorities, scientific experts and consultants, implementers, potential host communities, elected local or regional representatives, waste generators.

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, early engagement;

Dialogue and stakeholder involvement have become a central part of the waste management process. A trend can be seen in OECD countries towards implementing forms of public involvement that require new or enhanced dialogue among all parties concerned. As parties to this dialogue, regional and local political players and civil society [..] are developing their competence to play this role, and are entering into partnerships, often on an equal footing, with the management institutions, so that both technical and societal questions can be addressed in a manner conducive to confidence (NEA, 2010a). As counterparts, radioactive waste management institutions have been embracing a broader, ***more realistic view of learning and decision making in society****. Waste*

*management organisations and regulators have lucidly analysed the **discomfort of public rejection** connected to former technocratic or "top-down" approaches to implementing waste management solutions (NEA, 2000).*

Implementing a stepwise approach that provides sufficient time for the involved actors to ensure

fairness (e.g. of representation) and to **develop competence**.

Openness: Being active in providing information about decisions, policies and questions related to safety. Openness is also a matter of being prepared to answer questions, to discuss and to exchange views with the public or organisations.

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

*"Moving from the national to the local dimension inevitably requires the pre-existence of a national **framework for decision making that is widely supported**, and adhered to, by the relevant actors."*

The long term acceptance of the waste management facility.

Building and maintaining shared societal confidence in waste management arrangements requires sustained commitment and dialogue.

The decision-making process can furthermore be designed to try to restore trust where the trust relationship has been damaged. Approaches include: i) involving in the decisions those who are affected, so that they gain more control, and/or ii) dividing major decisions into relevant steps, providing feedback after each step and allowing the affected people to halt the procedure if they lose trust in the "trustees".

"Participatory approaches may deliver potential positive effects of several types: substantive improvements to decisions, procedural improvements (such as better integration of a wider information base) and contextual effects (for example reinforcement of democracy and of confidence in institutional players). Broad participation today may also compensate, to some degree, for the unavoidable absence of future generations in current reflections or negotiations".

"early consultations with local communities before final decisions on facilities, sites and concepts are rendered".

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

In the field of radioactive waste management, NEA countries are moving away from a traditional "decide, announce and defend" model, for which the focus was almost exclusively on technical content, to one of "engage, interact and co-operate", for which both technical content and quality of process are of comparable import to a constructive outcome

"Involving stakeholders rests on providing information and may include, by increasing degrees, consultation, active participation and shared decision authority."

"**The long-term acceptance** of any waste management facility will depend upon a solid, durable relationship between the local communities and the waste management installation. Building such a relationship is promoted by designing and implementing installations in ways that reflect the values

and interests of local communities. "The partnership approach is a method for achieving collaboration between waste management institutions and local communities. Partnership

arrangements seek to ensure both fairness (e.g. inclusiveness) and competence (informed decision making)." Collaboration can take place through a variety of **partnership organisations** (e.g. NGOs,

local government associations, units within or around local/regional governments).

7. Who has the responsibility to act (and can influence the uptake of recommendations)

Not very clear, but implementers are names as having a role in cooperating with local communities and interacting with safety authorities and policy makers.

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

- Decision making should be performed through **iterative processes**, providing the flexibility to adapt to contextual changes, e.g. by implementing a stepwise approach that provides sufficient time for the involved actors to ensure **fairness of representation** and to develop competence. Competence will grow notably through discussing and exchanging on research and its independent assessment.
- **Social learning** should be facilitated, e.g. by **promoting interactions** between various stakeholders and specialists.
- Public involvement in decision-making processes should be facilitated, e.g. by **promoting constructive and high-quality communication** between individuals with different knowledge, beliefs, interests, values and world views.

"The partnership approach is a method for achieving collaboration between waste management institutions and local communities. Partnership arrangements seek to ensure both fairness (e.g. inclusiveness) and competence (informed decision making)."

The decision-making process can furthermore be designed to try to restore trust where the trust relationship has been damaged. Approaches include: i) involving in the decisions those who are affected, so that they gain more control, and/or ii) dividing major decisions into relevant steps, providing feedback after each step and allowing the affected people to halt the procedure if they lose trust in the "trustees".

Additional information

9. Final comments:

Community benefits include empowering measures, such as financial resources to pay the expenses of collaboration and to hire the communities' own experts, and socio-economic benefits aimed at making host communities better off. All benefits can be adjusted to the needs of the host community and have the potential to contribute as well to the sustainable development of the region..

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: RG**
2. **Document Author(s): OECD NEA FSC**
3. **Document Title:** Stakeholder Involvement in Decision Making: A Short Guide to Issues, Approaches and Resources
4. **Publication Year: 2015**
5. **Institution (if official document) or project name (full):** OECD NEA ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT – Nuclear Energy Agency
6. **Is it a review of recommendations:** A guideline document, but with references to other source materials and guidance on how to use these

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** Radioactive Waste Management, but also applies more generally
2. **Step in the policy formation (provide enough details:**

Different phases: early, medium and late ("Involvement may take different forms at different phases")

3. **Stakeholders:** Not really specified, as broad definition of stakeholders is employed.

-"any actor – institution, group or individual – with an interest or a role to play in a societal decision-making process"

-"When considering which stakeholders to engage, at a minimum the planner should identify institutions, groups or individual groups towards whom the organisation has legal, financial or operational responsibilities; institutions, groups or individuals who are affected by the organisation's operations; and, finally, institutions, groups or individuals who are likely to influence the organisation's performance."

In practice, the document implicitly however seems to refer to stakeholders mostly in a sense of citizens (using e.g. also terms such as 'public engagement' when talking about stakeholder participation.

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** e.g. transparency, early engagement;

A statutory requirement (reference e.g. to Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, ESPOO and Aarhus) and a benefit.

-"Stakeholder involvement approaches should not be viewed as convenient tools for public relations, image building or winning acceptance for a decision taken behind closed doors."

-"Conveners should carefully consider not only the effects sought, but also the dominant rationales underlying the decision to involve stakeholders (for instance, legitimacy, effectiveness, efficiency or representation). This is a way to clarify goals and to avoid – both inside and outside the organisation – miscommunication and disappointment."

Also, the three rationales of stakeholder involvement (instrumental, substantive, normative) are presented and discussed.

5. **Objectives (with what purpose):**

A range of objectives/effects can be recognized, which the document distinguishing between substantive, procedural and contextual effects:

-" Substantive effects include: better, more acceptable choices from the environmental, economic and technical points of view."

-"Procedural effects include: better use of information; better conflict management; and increased legitimacy of the decision-making process."

-"Contextual effects include: better information to stakeholders and/or the public; improvement of strategic capacity of decision makers; reinforcement of democratic practices; and

increased confidence in institutional players."

The document also recognizes potential disadvantages of stakeholder engagement

:-"Potential drawbacks of public participation in decision making may include: conflict, delay, and/or resource demand."

6. Form(s) of participation:

A broad spectrum of stakeholder engagement levels are recognized, including one-way communication (an adapted from of the levels of engagement as used by Health Canada in 2000). Which level to use or aim for, depends also on the risk involved. If this is 'simple', elaborate involvement might not be needed. The document however tends to see more potential for 'win-win' situations in case of 'higher' levels of involvement.:

-"Different levels of stakeholder participation or involvement are offered through different approaches. One simple approach may be to transmit information to a passive stakeholder audience. At the other end of the scale, an approach may significantly empower stakeholders within the decision-making process. There is a clear trend towards higher levels of engagement by organisations seeking win-win outcomes with a greater diversity of stakeholders."

-"Involvement may take different forms at different phases and could include sharing information, consulting, dialoguing or deliberating on decisions."

7. Who has the responsibility to act (and can influence the uptake of recommendations)

Here, the emphasis seems to be put on the 'planners' or 'organisations' who have a responsibility to make/implement a decision. Who this is, is not really specified.

-"How much involvement the organisation will – or wishes to – offer must be clearly defined. This should be communicated to potential stakeholders at the outset of the initiative."

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

The document describes various steps in stakeholder engagement, going from planning, to execution and evaluation.

-"The approach that will be suitable for a particular situation will depend on the stakeholders that are engaged, and the aims and objectives of the consultation. Planners of stakeholder involvement will need to consider these aspects and decide on the most appropriate approach to use. In order to achieve this, the organisation must develop selection criteria. The same criteria may serve at a later stage to evaluate the involvement initiative. The appropriate level of involvement is a fundamental criterion, and should be carefully set and communicated to potential participants. Other types of criteria include desired effects and goals, as well as constraints."

Additional information

9. Final comments: additional points that the coder finds interesting, good to share.

The document contains references to and provides guidance on using various resources (handbooks, toolboxes, case studies). References are e.g. made to previous OECD NEA documents, tools

developed by the US DOE for implementing stakeholder participation, or online platforms for selecting stakeholder involvement approaches (e.g. developed by IPPA and Involve)

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: MM**
2. **Document Author(s):** Ferraro, G. and Martell, M.
3. **Document Title:** Euratom projects, radioactive waste management and public participation: what have we learnt so far? A synthesis of principles
4. **Publication Year:** 2015
5. **Institution (if official document) or project name (full): JRC Science and Policy**
6. **Is it a review of recommendations:** Yes

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** radioactive waste management
2. **Step in the policy formation (provide enough details):** all steps in policy formation defined as policy formulation, policy design, implementation process (including decision-making), resources allocation (capacity building for participation, regional policy, etc)
3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Defines national and local stakeholders (mostly helix 2, 3, 4 and 5).

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),**

The paper defines a set of general principles for a more participatory approach to RWM

5. **Objectives (with what purpose?),**

To improve RWM in EU countries

6. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships;

Formal vs. informal participation (p. 15), local partnership (p. 20)

7. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry;

National governments and RWMOs

8. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

"national legislative and administrative frameworks should be changed. Changes may also be needed to allow the adequate support in terms of resources to make public participation possible in practice. A fair interplay between national state actors and public/local interests implies that the correct background conditions are developed by each state in terms of allocation of resources and support,

creation of expertise and supportive structures. Only in this way can inclusive decision-making processes be put in practice“ (p.25)

Additional information

9. **Final comments:**

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: MM**
2. **Document Author(s):** Ferraro, G. and Martell, M.
3. **Document Title:** Radioactive waste management and public participation in the EU: lessons learnt from the EURATOM Research Framework Programmes
4. **Publication Year:** 2015
5. **Institution (if official document) or project name (full):** International Journal for Nuclear Power
6. **Is it a review of recommendations:** Yes

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** radioactive waste management
2. **Step in the policy formation (provide enough details):** all steps in policy formation defined as policy formulation, policy design, implementation process (including decision-making), resources allocation (capacity building for participation, regional policy, etc)
3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Defines national and local stakeholders (mostly helix 2, 3, 4 and 5).

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?),

The paper synthesises the major principles emphasised by the EURATOM projects addressing public participatin in RWM.

5. Objectives (with what purpose?),

Provide lessons learnt from research to be applied to policy making

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

Local partnerships; Upstream (during the formation and definition of national laws and regulations) and downstream (in the implementation of regulations and execution of projects). “Public and local involvement may also take different forms according to the stage of RWM in which a country is at a given moment”.

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

National governments and RWMOs

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

"National legislative and administrative frameworks should be changed. Changes may also be needed to allow the adequate support regarding resources to make public participation possible in practice. A fair interplay between national state actors and public/local interests implies that the correct background conditions are developed by each state regarding allocation of resources and support […]".

Additional information

9. **Final comments:**

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: LG**
2. **Document Author(s):** Brans, Ferraro & von Estorff
3. **Document Title:** The OECD Nuclear Energy Agency's Forum on Stakeholder Confidence, radioactive waste management and public participation. A synthesis of its learnings and guiding principles
4. **Publication Year:** 2015
5. **Institution (if official document) or project name (full):** Joint Research Centre. European Commission.
6. **Is it a review of recommendations:** Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),
   - other: ……..
2. **Step in the policy formation (provide enough details):**
   - early: agenda setting (incl. research agenda), problem formulation;
   - medium: consideration of options, decision of option;
   - late: policy implementation, policy evaluation

   "These factors referred to by the FSC can be linked to the input, process and output legitimacy of policy-making. For policy to be (perceived as) legitimate by the public, not only the policy itself but also the policy-making process needs to be (perceived as) legitimate". (p. 3)

The key drivers developed by the FSC (Forum on Stakeholder Confidence) such as governmental commitment, enhanced citizen participation and a balanced decision-making process, are very compatible with the governance and public policy literature.

"Citizen participation and empowerment have been identified as key ingredients to the formulation of national policies as well as to their successful implementation in regional and local contexts." (p. 12)

3. **Stakeholders:**

- Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
- Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; "*Waste Management Organisations (WMOs)"*
- Helix 3: the natural environment, e.g. environmental NGOs;
- Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
- Helix 5: the political system, e.g. regulator, government agencies, politicians. Other: *safety authorities, municipalities and local communities, elected representatives, technical experts*

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?) (p. 8)

Openness: refers to an attitude that includes a willingness to listen, to change and to adapt.

Transparency: refers to the process of making actions visible and enabling people to access and understand information. Transparency should be embedded in three levels of decision-making: process, structure and behaviour.

"This means that plans and procedures should be visible, clear roles and responsibilities must be assigned, and individuals and institutions must be open, transparent and willing to involve others (NEA, 2013c)."

Technical competence

Procedural equity

"When these confidence factors are present in everyday practice, public trust can be built" (p. 3)

"The FSC stresses early involvement of stakeholders" (NEA, 2015). (p. 12)

"However, whereas early and intensive involvement of the relevant stakeholders is often desirable from the perspective of the initiator, stakeholders themselves may desire, expect or be entitled to a particular level of involvement. Preliminary discussion, contact with or observation of target stakeholder groups, as well as review of statutory requirements, can help determine the appropriate level" (NEA, 2004b). (P. 12)

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

The main objective is achieving confidence, trust and consent of stakeholders in Radioactive Waste Management issues.

"The 'Energy – Transparency Centre of Knowledge' (E-TRACK) is a joint initiative agreed between the Directorate-General for Energy (DG ENER) and the Joint Research Centre (JRC)

of the European Commission (EC) for the promotion and enhancement of public participation in the implementation of energy policies". This report (E-TRACK project on RWM) offers a review of the major works developed by the Forum on Stakeholder Confidence (FSC) of the Nuclear Energy Agency (NEA) on the existing state-of-the-art in public participation in RWM.

6. Form(s) of participation

Involving regional and local stakeholders starts with providing information and may include, (by increasing degrees), consultation, active participation and shared decision authority. Local communities should play a driving role in developing and overseeing their own solutions with significant assistance from regulatory and decommissioning authorities and industry proponents. This includes planning and implementation when siting agreement is reached.

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

"Trustworthy Radioactive Waste Management institutions have to be the committed 'driver' of the policy processes, allowing for enhanced citizen participation and empowerment." (p. 10)

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

The authors distinguish four levels at which these factors can be translated into practice:

Levels	Key drivers
Roles and structures	• National commitment • RWM policy framework • RWM organisation as committed driver • Citizens' participation and empowerment
Decision-making process	• Balanced process • Facilitating (social) learning • Allowing added value for host communities
RWM institutions	• Demonstrate confidence factors
RWM facilities	• Design • Community oversight and stewardship

Some of the information presented in Table 2: Key drivers for public trust in RWM

- First, at the level of the roles and structures, there should be a firm national commitment combined with a clear and widely supported policy framework. Trustworthy RWM institutions have to be the committed driver of the policy processes, allowing for enhanced citizen participation and empowerment.

  "Public involvement in decision-making processes should be facilitated, e.g. by promoting constructive and high-quality communication between individuals with different knowledge, beliefs, interests, values, and worldviews". (NEA, 2004a)

  Different techniques are available to facilitate citizen participation and empowerment. It include public hearings, deliberative polling, citizen advisory groups, scenario workshops and consensus conferences (p. 12)

- Second, the decision-making process should balance values that are sometimes competing and conflictual, such as participation, fairness, transparency, flexibility and accountability. The process needs to facilitate (social) learning, and allow for added value for the communities concerned.

  "The decision-making process should be organised so that communities can express their issues and concerns. These issues need to be addressed so that tailor-made benefit packages and community oversight schemes with host and neighbouring communities can be designed that bring added value to the community". (p. 14)
- Third, individuals and institutions involved in RWM must demonstrate competence, transparency and the willingness to listen to and involve others.
- Fourth, local waste management facilities need to demonstrate core values such as robustness, flexibility, transparency and added value. Additionally, they should allow for community oversight and stewardship.
- "Local communities see oversight and monitoring of the facility as an important means to follow up on health and environmental issues. Apart from monitoring health impacts, monitoring socio-economic variables, like property values or economic development, can also be considered important by local stakeholders. In practice, Local Information Committees play an important role in such monitoring. These local committees can foster learning and confidence, and can feed information to the community. It is nonetheless crucial to institutionalise such monitoring, i.e. provide the necessary resources and a legal framework (NEA, 2013b)" (p.16)

  Local communities in different countries have different viewpoints regarding the level of involvement of local stakeholders in monitoring and the actor that is responsible for interpreting monitoring results. (p. 16)

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** MM
2. **Document Author(s):** OECD/NEA
3. **Document Title:** Stakeholder involvement in radioactive waste management decision making. Annotated Bibliography. Forum on Stakeholder Confidence (FSC)
4. **Publication Year:** 2015
5. **Institution (if official document) or project name (full): OECD/NEA**
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** radioactive waste management (storage, treatment & conditioning)
2. **Step in the policy formation (provide enough details):** all steps in policy formation
3. **Stakeholders:** not specified

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** e.g. transparency, early engagement;

The different publications contain different principles. In page 13 one publication mentioned lists 7 behavioural principles that organisations should respect: competence, commitment, consistency, fairness, respect, caring, and empathy.

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

The report aims to facilitate the sharing of international experience in addressing the societal dimension of RWM.

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

Depends on the specific resource listed. Not specified in this report.

7. Who has the responsibility to act (and can influence the uptake of recommendations)

n/a

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

n/a

Additional information

Final comments:

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** Johan Swahn (MKG), Nadja Železnik (REC), Philip Kearney (NTW and CiviQ), Vanessa Liston (CiviQ), Gilles Heriard-Dubreuil (Mutadis), Jan Haverkamp (NTW), Patricia Lorenz (NTW)
3. **Document Title: Transparency in Radioactive Waste Management: A first report from the Nuclear Transparency Watch (NTW) BEPPER (Broad Framework for Effective Public Information and Participation in Environmental Decision-making in Radioactive Waste Management) project**
4. **Publication Year: 2015**
5. **Institution (if official document) or project name (full): NTW production**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other:
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

   The report provides innovative thinking on transparency in the area of radioactive waste management (RWM) in the form of processes for public information and communication and public participation and engagement in decision-making. It stress the importance of 3+1

pillars (3 as in Aarhus convention, 1 additional pillar is effective access to resources. This are valid for very early stage of RWM: from policy establishment on.

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement; The report provides 4 pillars concept for any RWM activities, as early as possible in the process, and additionally presents two approaches to effective transparency: the NTW BEPPER key components such as Principles, Practices, Resources and Innovations, and NTW BEPPER levels as a tool for evaluating transparency in RWM with number of levels for implementation of four BEPPER pillars where higher levels correspond to more advanced implementation and consequently reflect degrees of effective implementation of transparency.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **The objective of report is to provide possible approach to evaluate effectiveness of transparency governance as it is agreed by Civil Society actors in RWM in order to improve safety, decision making and build confidence.**

   Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships; The report include levels to assess effective public participation and categorise involvement from no participation (Level PP1), information provision only (Level PP2), written requests only (Level PP4), written requests and meetings (Level PP4) to Level PP7: The existence of a public participation process where questions, issues and comments raised or made in the consultation process are taken into due account, Level PP8: The existence of innovative consultation processes to facilitate the taking due account of input in the public participation.

3. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry; According to report responsibility for fulfilling the conditions is with Waste Management Organisation and with authorities responsible for RWM (from the government, ministries, regulators).

4. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) All levels are also commented and gives details what is meant and how to fulfil it.

Additional information

5. **Final comments:** additional points that the coder finds interesting, good to share.

Levels for effective PP (p.23-26)

Level PP1: No access to public participation in RWM

For completeness sake, in a similar manner as for the levels for access to information, Level PP1 applies when there is no public participation in the RWM field. This is certainly the case in some countries in the world.

Level PP2: Public participation in RWM in the form of information-only distribution of material and/or information-only meetings

In some countries informing about plans for siting or implementation of projects is regarded as constituting sufficient public participation. This can be done by distribution of information or by having information meetings. When information meetings are held the audience can sometimes ask questions, but these are answered at the meeting and not noted as an input into the decision-making process.

Level PP3: Public participation in the form of requests for written questions, issues and comments, but with no response

In order for public participation to be effective it is necessary not only to inform about a project, but also to obtain questions, issues or comments from civil society. The request for such input in a consultation process can be restricted to written input only. At this level the response from the consultation process is only noted and not acknowledged with documentation of the questions, issues and comments raised and how they are answered.

Supplementary issue PP1: Public participation early in the decision-making process

For public participation to be effective it is necessary to carry out consultation processes early in the decision-making process. If public participation starts late in the decision-making process many decisions may already have been made and the possibility for civil society actually to influence choices to be made will be much more limited.

Supplementary issue PP2: Proactive efforts to increase public participation

For more effective public participation it is necessary for the RWM organisations also proactively to seek out stakeholders that may be interested to make inputs into the decision-making process.

Supplementary issue PP3: Availability of Internet consultation

For more effective public participation the possibility to provide input to a consultation process using the Internet may be used in addition to allowing written input. The use of Internet questionnaires may make it easier to provide input, but it is important that such questionnaires are developed for open input and without bias in the formulation of questions or statements.

Level PP4: Public participation in the form of requests for written questions, issues and comments and also with public meetings, but with no response

This level is similar to level PP3 in that questions, issues or comments that are raised or made in writing or given during a public meeting are not acknowledged with a documentation of the questions, issues and comments raised or made and how they are answered or handled. However, the addition of public meetings to the possibility of written input improves the public participation in that it gives the public present an insight also into how other participants see the issues.

Supplementary issue PP4: Openness, enough time and fairly moderated public meetings

In order for public meetings to be an effective instrument for public participation the meetings have to be open to all. In addition enough time has to be allotted to receiving input, apart from time used to inform the participants. The public meetings should also be fairly moderated so as to encourage input from the public. A moderator independent from the RWM decision-making body should be used if circumstances indicate that this would be beneficial.

Supplementary issue PP5: Local, national and international consultation meetings

In order for public participation to be effective it is not enough to have consultation meetings only in the local communities directly affected by RWM siting or RWM projects. RWM siting and RWM projects are of national interest and to have local consultation meetings only restricts national participation. In addition in many cases the national consultation meetings will be a possibility for international consultation and national consultation processes should be open to this. International consultation should of course also be carried out according to the Espoo Convention.

Level PP5: Public participation in the form of requests for written questions, issues and comments, and with the input documented and responded to

This level is similar to level PP3 but differs in one important way. The input from the written consultation is also acknowledged in that it is documented and a response is given to each question, issue or comment raised or made. For effective public participation the documented consultation process output is given due account in the further development of the RWM project and in the environmental impact statement for the project.

Level PP6: Public participation in the form of requests for written questions, issues and comments and also with public meetings, and with the input documented and responded to

This level is similar to level PP4 but differs in one important way. The input from the written consultation and public meetings is also acknowledged in that it is documented and a response is given to each question, issue or comment raised or made. For effective public participation the documented consultation process output is given due account in the further development of the RWM project and in the environmental impact statement for the project.

Level PP7: The existence of a public participation process where questions, issues and comments raised or made in the consultation process are taken into due account

Effective public participation is not reached unless the questions, issues and comments that are provided during consultation are taken into due account. A public participation process where it is ensured that input is taken into due account is vital for effective decision-making.

Supplementary issue PP6: Public participation is carried out continuously during the different phases of decision-making in RWM

For public participation to be effective it has to be carried out continuously during the different phases of decision-making in RWM, i.e., during RWM national programme development including formation of governance and financing, conceptualisation, reference design, siting, licensing, construction, operation, closure and post-closure.

Supplementary issue PP7: Public participation is widespread in the RWM governance system

In order for public participation to be effective it has to be widespread within the whole RWM governance system. Public participation is not only important in siting processes or in consultation before decision-making on RWM projects, but also for example in developing RWM legislation and financial systems for RWM. It is not only the implementer of RWM projects but also other RWM decision-making bodies that should carry out public participation processes.

Supplementary issue PP8: Existence of an independent entity to organise consultation processes and development of environmental impact statements

In order to have effective public participation it may be favourable to have independent entities that carry out public participation processes and that, for example, develop environmental assessment statements.

Level PP8: The existence of innovative consultation processes to facilitate the taking due account of input in the public participation

There are innovative consultation processes that facilitate the taking due account of questions, issues and comments raised or made in the consultation process.

Providing information from Waste Management Organisations is a legal obligation because it supports better quality decision making.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** Gabriele Mraz, Austrian Institute of Ecology, Patricia Lorenz, FOE Europe
3. **Document Title: Joint Project 2015 Radioactive waste and spent fuel – transparency and participation in national programmes**
4. **Publication Year: 2016**
5. **Institution (if official document) or project name (full): Joint Project**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other:
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

The report conducted an evaluation of national programmes that were available until June 2016 with a focus on concepts for public participation and transparency and their implementation in the countries. The aim was to identify the Member states´ approaches and comparing them to the recommendations of international good practice of transparency and participation, to present inconsistencies and develop recommendations for improvement of the implementation of Art. 10 of the Waste Directive. The report present different steps, depending on the country.

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations,

Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement; The report provides information about fulfilment of the requirements from Waste Directive (EURATOM 2011) on preparation of national programmes on the management of spent fuel and radioactive waste and notify them to the European Commission, submittion of a national report to the European Commission on time (2015 first one) and implementation of a Strategic Environmental Assessment procedure (SEA) as required in Directive 2001/42/EC "on the Environmental Impact Assessment of certain plans and programmes".
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **The objective of report is to provide evaluation of fulfilment related to the Waste directive (national programmes, transparency and implementation of SEA process)**
3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; The report include also partly public participation in relation to published national reports on safety of RWM, including transparency. Basically the public participation in Joint Project Countries (Cz, A, Rom, Bulg, Pol, Hungary) is rather limited and focused on potential host communities.
4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; According to requirements, the responsibility is with responsible ministries and implementing orgaisations.
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The topic is not covered in report, however the documents identify theissues to be fulfiled (given in additional information).

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

First conclusions for anti-nuclear work concerning national programmes (p. 17-18)

These experiences of the first year when actual waste management programmes were available leave a lot to be desired. While it is an important step that transparency and public participation are now mandatory elements in Directive 2011/70/Euratom, the actual implementations have many deficiencies. The most important of these are listed below:

Complete publishing of national programmes

All national programmes and national reports should be published by the EC on a publically available website. It is not understandable why some countries hold back on their national programmes – especially as much information is already available through the national reports in the frame of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Inventory lists are not a sensitive information and therefore should not be allowed to be redacted from the publically available national programme.

Mandatory SEA

A SEA is mandatory for management programmes under Directive 2011/70/Euratom. This is not only in line with Directive 2011/42/EC but also with recent views of DG environment. Many EU countries conduct a SEA, but some try to bypass it. DG Energy seems not to be completely in line with DG Environment in this aspect.

A SEA should be conducted when the draft of the national programme is available and before it is sent to EC.

SEA Scoping Phase

Although Directive 2001/42/EC does not require public participation in the scoping phase, some EU member states allow for public comments. Because experiences with SEAs show that the scope of the SEA is not always as clear as it would seem (e.g. are NORM14 wastes included? are beyond-design basis accidents in waste management facilities included?). Therefore, public participation should as start as early as possible, meaning in the scoping phase.

Mandatory transboundary SEA

Transboundary public participation in the SEA should be mandatory. A national waste management programme can have various impacts on other countries, e.g. through accidents in interim storages, leakages in deep geological repositories, transport routes to and from reprocessing etc.

Mandatory SEA for relevant changes in the national programme

For every relevant change in the national programme a new SEA should be conducted. In most SEA legislations it is not defined what a relevant change is – this should be defined in advance because it is foreseeable that in the next years important decisions will be made in the member stated, e.g. if the option of a regional disposal has to be given up.

Enlarge definition of "the public"

When public participation is concerned, the meaning of "public" seems often to be restricted to local municipalities that will or should want to host a site for nuclear waste.

This is not sufficient because spent fuel and radioactive waste management can have adverse impacts also on people living outside the site communities and in neighboring countries.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: RG**
2. **Document Author(s): OECD NEA FSC**
3. **Document Title: International Conference on Geological Repositories 2016 NEA Conference Synthesis 7-9 December 2016 Paris, France**
4. **Publication Year: 2017**
5. **Institution (if official document) or project name (full):** OECD NEA ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT – Nuclear Energy Agency
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** Radioactive Waste Management
2. **Step in the policy formation (provide enough details):** not clearly specified, but in general the emphasis seems to be put on the siting of geological repositories (hence the idea of geological disposal is already developed)

3. Stakeholders: "public stakeholder communities", mostly understood as local communities which are (considering the) hosting future geological repositories.

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, early engagement;

References seem to be made to mostly instrumental and substantive rationales, with an emphasis in practical terms on information provision.

5. Objectives (with what purpose):

The conference of which the document presents the proceedings, was inter alia focused on 'engagement, with one of the proceedings chapter particularly focused on stakeholder engagement in geological disposal projects. The purpose of this engagement is very topic-focused: "successful and safe realisation of geological disposal"

In some instances, the objective seems quite instrumental: "Public fear of radiation risks remains an important factor to be addressed in the safe management of radioactive wastes. Community engagement can help to allay fears through explaining radiation risks and provision of supporting information sufficient for people to draw their own conclusions – i.e. through explanation more than persuasion. Education has a role to play, including contributing to school programmes, which may be best supported from the regulatory side to avoid a potential perception of manipulation."

However, also the substantive value of engagement is alluded to: "Local communities have extensive knowledge and understanding of the local environment. This is particularly true in the context of First Nation and Métis communities, whose culture is close to the land and is founded on inherent respect for the natural environment. Drawing on the knowledge and understanding of local communities both strengthens safety analyses and encourages engagement and participation."

6. Form(s) of participation: An evolution over time seems to be alluded to: "stakeholder involvement has evolved from consultation, through dialogue, to engagement and partnership"

It is mentioned how public expectations have also increased over time, with successful engagement currently often being characterized by the forging of partnerships.

Overall, the emphasis in the discussed experiences seems however to be on communication and information provision:

"the US Nuclear Regulatory Commission (NRC) to shift its engagement strategy. A dedicated multidisciplinary outreach team was employed to help tailor information to each audience, including provision of fact sheets for frequently asked questions. Greater care is now taken over the way that information is presented, including greater use of graphics, a focus on plain language and inclusion of glossaries. Explicit communication plans are now also prepared, which include definition of the key messages and identification of the target audience. Understanding the audience, in terms of their concerns and the way in which they prefer to access information, is an important part of the process. Social media played an important role in the way in which news of the recent incidents at the WIPP facility became public. This highlights that informal social media, including instant messaging and posting, is an increasingly important component of communication. Engagement strategies therefore need to encompass social media, which also provides a powerful tool for reaching out to stakeholders. All programmes also need to plan to rapidly respond and disseminate official information in the event of adverse news and/or misinformation breaking over social media."

7. Who has the responsibility to act (and can influence the uptake of recommendations)



Not explicitly stated

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

Additional information

9. Final comments: additional points that the coder finds interesting, good to share.

/

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** MM
2. **Document Author(s):** OECD/NEA
3. **Document Title:** The Forum on Stakeholder Confidence Report on Dialogue in the Long-Term Management of Radioactive Waste, NEA
4. **Publication Year:** 2021
5. **Institution (if official document) or project name (full): NEA**
6. **Is it a review of recommendations:** No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:** radioactive waste management (storage, treatment & conditioning)
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option

In particular, it addresses the dialogue between potential host communities and RWMOs at different stages of the RWM proces, prior siting, during siting and once a site is selected, in different countries.

3. Stakeholders: specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

As the report includes the analysis of dialogue for 14 countries, differents stakeholders are considered but mostly focused on helix 3, helix 4 and helix 5. A specific section is considered for each country which involved youth, women, migrants, indigenous communities, or any other especific group.

Information on: (provide page number and/or relevant quote where available)

4. Underlying principles or values (why?), e.g. transparency, early engagement;

Participation, openness, transparency (p.29; 42; 50; 51; 89)

Fairness, transparency, early and iterative participation, institutional integration (p. 99)

Sustainability (p.29)

Added value approaches (p. 37, 39)

Partnership with communities (p.104)

5. Objectives (with what purpose?), e.g. to gain public trust, facilitate social learning;

Gather and catalogue the various approaches FSC member use to establish an effective way to foster a robust dialogue with their local, regional and national stakeholders (p.13) Key elements reviewed in 14 countries include:

- introduction to the national waste management programmes (current status);
- involvement of organisations at the national and regional levels;
- involvement of specific groups (e.g., youth, women, migrants);
- practical implementation of communication;
- added value approaches;
- markers and memory preservation;
- lessons learnt over the last years.

6. Form(s) of participation, e.g. gather information and opinions from stakeholders, or create partnerships;

This report focuses on "effective dialogue" as an approach of collaboration or partnership between the institutional actors and the affected communities, essentially involving public participation in the decision-making process and mutual learning. The concept of "dialogue" in the field of RWM could be theorised in terms of co-production of knowledge between publics and experts (p.14).

7. Who has the responsibility to act (and can influence the uptake of recommendations) e.g., nuclear regulator, waste management agency, a ministry;

In most countries, the responsible governmental department and/ or the radioactive waste management agency. "It remains to be seen whether the dialogue processes influence the key decisions in RWM or these remain in the control of the RWM institutions and/or the government" (p.20).

8. How to implement it? Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken)

Develop dialogue at an early stage and maintain and open and transparent process that enables continuous dialogue among all parties and builds on mutual trust (p. 23).

Additional information

Final comments: Countries considered. Belgium, Canada, the Czech Republic, France, Germany, Hungary, Italy, Japan, Russia, Spain, Sweden, Switzerland, the United Kingdom and the United States.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials:** SL
2. **Document Author(s):** International Atomic Energy Agency
3. **Document Title:** Communication and stakeholder involvement in radioactive waste disposal
4. **Publication Year:** 2022
5. **Institution (if official document) or project name (full):** International Atomic Energy Agency

6. Is it a review of recommendations: Yes/No

CONTENT ANALYSIS

Information to be determined as part of the review process

1. **Domain:**
   - uranium mining,
   - siting (licensing) of new NPPs
   - NPP Life Time Extension,
   - nuclear emergencies and post-accident recovery (incl. environmental remediation),
   - siting (licensing) of waste repositories,
   - radioactive waste management (storage, treatment & conditioning),
   - decommissioning,
   - general (energy policy development and adoption),
   - other: ……..

2. **Step in the policy formation (provide enough details):**
   - early: agenda setting (incl. research agenda), problem formulation;
   - medium: consideration of options, decision of option;
   - late: policy implementation, policy evaluation

3. **Stakeholders:**
   - Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools;
   - Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks;
   - Helix 3: the natural environment, e.g. environmental NGOs;
   - Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media;
   - Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Recommendation/s: ……..

Information on: (provide page number and/or relevant quote where available)

4. **Underlying principles or values (why?),** e.g. transparency, early engagement;

   Guidance on communication and stakeholder involvement (p. 2).

5. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning;
   - The main objective: to provide practical guidance on communication and stakeholder involvement associated with radioactive waste disposal for interested Member States, especially those embarking on, re-launching or revising a disposal programme. (p. 2).
   - Two associated objectives:
     - To revisit the broad principles, responsibilities and phases widely recognized as providing a robust framework for communication and stakeholder involvement in a disposal development and implementation process.
     - To collect, analyse and group lessons learned from both progress made and difficulties encountered in national programmes, to illustrate how practical implementation could be designed in response to specific challenges. (p. 2).

6. **Form(s) of participation** (p. 10).
   - National

- Inform and educate
- Consult and gather views and information
- Involve and engage

- Regional and local
  - Collaborate
- Local
  - Partner

7. Who has the responsibility to act (and can influence the uptake of recommendations)

The radioactive waste producers, waste management organizations, the government and regulatory authorities will all have a significant role to play. (p. 14).

The principal bodies identified as having specific roles, functions and responsibilities outlined within relevant national legislation regarding both overall waste management and related stakeholder involvement are governments, regulators, operators of disposal facilities and waste producers. In addition, it is common for national programmes to include independent oversight and review through national advisory and consultative bodies together with scientific institutions and learned societies, as well as international peer review and various types of cooperation. (p. 16).

8. How to implement it?

In order to implement national policy for radioactive waste disposal, it is common for the implementing body to develop detailed siting and stakeholder involvement strategies; the involvement of interested stakeholders in developing these can further engender trust.

Once a siting process for a disposal facility has begun, undertaken by the implementing organization, it is usually its responsibility to communicate with stakeholders and manage or commission the necessary involvement processes. These will necessarily evolve as the process proceeds to narrow down the site search. It is becoming more common for some form of community volunteering process to be used in a siting process, and it is therefore important for all relevant technical and societal issues to be discussed as early and as openly as possible so as to allow potentially willing communities to be able to understand and enter the process. There would, however, be a continued involvement of both government and the regulator to offer their particular contributions to the discussion. Development of a partnership approach can allow valuable community input in terms of their concerns and relevant local knowledge (p. 19).

THE BASIC PHASES OF A COMPREHENSIVE STAKEHOLDER INVOLVEMENT PROGRAMME. (p. 22).

- Development of a radioactive waste management policy and establishing the programme framework
  - Establishing the legal framework
  - Developing the institutional framework
  - Financial and human resources
- The siting process
  - Open volunteerism
  - Focused volunteerism
  - Planning the repository siting process
  - Implementing the siting process
  - The ongoing siting process

Construction, operation and post-closure

Additional information

9. **Final comments:** additional points that the coder finds interesting, good to share.

BIBLIOMETRIC INFORMATION

Information available in the database

1. **Coder initials: NZ**
2. **Document Author(s):** Zeleznik N., Swahn J., Daniška M., Haverkamp J., Hooge N.H., de Butler M, Wales C.,
3. **Document Title: Implementation of ROUTES action plan second phase: Transparency in establishment of national radioactive waste facilities: Criteria for good transparency, national case studies and recommendations**
4. **Publication Year: 2023**
5. **Institution (if official document) or project name (full): WP ROUTES EURAD, D9.17**
6. **Is it a review of recommendations: No**

CONTENT ANALYSIS

Information to be determined as part of the review process

Domain: uranium mining, general (energy policy development and adoption),

1. siting (licensing) of new NPPs, NPP Life Time Extension, nuclear emergencies and post-accident recovery (incl. environmental remediation), siting (licensing)of waste repositories, radioactive waste management (storage, treatment & conditioning), decommissioning, other:
2. **Step in the policy formation (provide enough details):** early: agenda setting (incl. research agenda), problem formulation; medium: consideration of options, decision of option; late: policy implementation, policy evaluation:

The deliverable is addressing critera for good transparency from legal framework, national cases in 9 countries and lessons learnt from the views of Civil society actors.

3. **Stakeholders:** specify stakeholders and helix (Helix 1: the research (SSH and non-SSH) and education system e.g. universities, higher education systems, research centres and schools; Helix 2: the economic system, e.g. nuclear industry, other relevant industry, firms, services and banks; Helix 3: the natural environment, e.g. environmental NGOs; Helix 4: the media-based and culture-based public, e.g. local communities, Civil Society Organisations, Local Information Committees, social networks, media; Helix 5: the political system, e.g. regulator, government agencies, politicians. Or Other)

Information on: (provide page number and/or relevant quote where available)

1. **Underlying principles or values (why?),** e.g. transparency, early engagement; The document is providing analyses of criteria from different legal documents dealing with transparency and public participation (international treaties, EU directives, international organisations (NEA, IAEA, NTW,…) and transpositions in national frame), description of national situations on RWM and derived recommendations regarding transparency and public participation.
2. **Objectives (with what purpose?),** e.g. to gain public trust, facilitate social learning; **The objective of report is to learn what could be conditions for good transparency and public participation in different RWM phases.**

3. **Form(s) of participation,** e.g. gather information and opinions from stakeholders, or create partnerships; The report include many different forms of public participation from sharing of information in the effective way, to public participation in the prescribed processes as well in the more deliberative organised actions (like local partnerships, different organised committees, communities for exchange of information) established in the countries. Also, issues related to access to resources (for independent experticse or for building of expertise) are described as one of the criteria.
4. **Who has the responsibility to act (and can influence the uptake of recommendations)** e.g., nuclear regulator, waste management agency, a ministry; According to report responsibility for fulfilling the conditions is with Waste Management Organisation and with authorities responsible for RWM (from the government, ministries, regulators).
5. **How to implement it?** Steps to be taken to accomplish recommendation (e.g. resources to be provided, steps to be taken) The national cases also include decscription of some steps to be able to inplements the actions on RWM.

Additional information

6. **Final comments:** additional points that the coder finds interesting, good to share.

Main recommendations (p34-38):

Providing information from Waste Management Organisations is a legal obligation because it supports better quality decision making. Considering the criteria for T&PP authors recommend:

- involving a wide range of stakeholders early on.

- sharing internationally on T&PP and following the results in the frame of national reports.

- insuring oversight of the RWM process by a pluralistic and independent body.

- maintaining long-term financial resources to engage non-institutional experts – local communities and NGOs - with other interests than project leaders.

- extending procedural deadlines to allow high-quality public participation.