

Operating Plan and Guidelines for the Nuclear Energy Agency Committee on Nuclear Regulatory Activities

2017-2022

**NUCLEAR ENERGY AGENCY
COMMITTEE ON NUCLEAR REGULATORY ACTIVITIES**

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Nuclear Regulatory Activities: 2017-2022**

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The mission of the NEA is:

- to assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally sound and economical use of nuclear energy for peaceful purposes;
- to provide authoritative assessments and to forge common understandings on key issues as input to government decisions on nuclear energy policy and to broader OECD analyses in areas such as energy and the sustainable development of low-carbon economies.

Specific areas of competence of the NEA include the safety and regulation of nuclear activities, radioactive waste management and decommissioning, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information. The NEA Data Bank provides nuclear data and computer program services for participating countries.

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COMMITTEE ON NUCLEAR REGULATORY ACTIVITIES

The Nuclear Energy Agency (NEA) Committee on Nuclear Regulatory Activities (CNRA) is responsible for NEA programmes and activities concerning the regulation, licensing and inspection of nuclear installations with regard to both technical and human aspects of nuclear safety. The Committee constitutes a forum for the effective exchange of safety-relevant information and experience among regulatory organisations. To the extent appropriate, the Committee reviews developments which could affect regulatory requirements with the objective of providing members with an understanding of the motivation for new regulatory requirements under consideration and an opportunity to offer suggestions that might improve them and assist in the development of a common understanding among member countries. In particular it reviews regulatory aspects of current safety management strategies and safety management practices and operating experiences at nuclear facilities including, as appropriate, consideration of the interface between safety and security with a view to disseminating lessons learnt. In accordance with *The Strategic Plan of the Nuclear Energy Agency: 2017-2022*, the committee promotes co-operation among member countries to use the feedback from experience to develop measures to ensure high standards of safety, to further enhance efficiency and effectiveness in the regulatory process and to maintain adequate infrastructure and competence in the nuclear safety field.

The committee promotes transparency of nuclear safety work and open public communication. In accordance with the NEA Strategic Plan, the committee oversees work to promote the development of effective and efficient regulation.

The committee focuses on safety issues and corresponding regulatory aspects for existing and new power reactors and other nuclear installations, and the regulatory implications of new designs and new technologies of power reactors and other types of nuclear installations consistent with the interests of the members. Furthermore, it examines any other matters referred to it by the NEA Steering Committee for Nuclear Energy. The work of the committee is collaborative with and supportive of, as appropriate, that of other international organisations for co-operation among regulators and consider, upon request, issues raised by these organisations. The Committee organises its own activities. It may sponsor specialist meetings, senior-level task groups and working groups to further its objectives.

In implementing its programme, the committee establishes co-operative mechanisms with the Committee on the Safety of Nuclear Installations (CSNI) in order to work with that committee on matters of common interest, avoiding unnecessary duplications. The committee also co-operates with the Committee on Radiological Protection and Public Health (CRPPH), the Radioactive Waste Management Committee (RWMC), and other NEA committees and activities on matters of common interest.

Foreword

In line with the 2017-2022 NEA Strategic Plan, the present “Operating Plan and Guidelines of the Nuclear Energy Agency Committee on Nuclear Regulatory Activities: 2017-2022” (hereafter, CNRA Operating Plan and Guidelines) describes the committee’s organisation and priorities, as well as the operating procedures that are to be used by the committee and its working groups so as to fulfil the 2017-2022 CNRA mandate.

Since the issuance of the previous plan in 2011, there has been a significant shift, and many member countries are now constructing new facilities or are in the process of legislative or technical processing for new licences. This shift takes place in an atmosphere in which current operating plants are requesting power uprates and extended licences, and with substantial activity in new licensing and new construction. It is clear that all these activities require similar attention from regulators and operators, and that responsibilities within the regulatory body must be organised to adequately handle them.

In consideration of the 2017-2022 NEA Strategic Plan, the CNRA agreed on the need to update this plan and the associated programme of work elements. In performing its work, the committee decided that, to the extent practical, the report structure should align with the Committee on the Safety of Nuclear Installations (CSNI). Additionally, it should address issues in relation to the main objectives and challenges identified in the 2017-2022 NEA Strategic Plan, taking into account the current environment mentioned above.

The present CNRA Operating Plan and Guidelines was approved by the CNRA in June 2019. It describes the CNRA’s organisation, priorities and operating procedures to be used in fulfilling its mandate. This CNRA Operating Plan and Guidelines reflects the new challenges addressed by the NEA and incorporates objectives, schedules and mandates of the various CNRA working groups. Specific attention is given to ensure that cross-cutting issues are dealt with satisfactorily.

Table of contents

LIST OF ABBREVIATIONS AND ACRONYMS.....	6
1. INTRODUCTION	7
2. CNRA AND CSNI MISSION AND SCOPE	8
3. COMMITTEE ORGANISATION AND RESPONSIBILITIES.....	10
4. SCOPE OF WORK.....	15
5. WORKING METHODS AND PROCEDURES.....	27
6. DOCUMENTATION AND DISSEMINATION.....	32
APPENDIX A: CNRA AND WORKING GROUP MANDATES	36
APPENDIX B: MAPPING OF CHALLENGES AND REGULATORY GOALS WITH WORKING GROUPS	60
APPENDIX C: TEMPLATES.....	63

List of abbreviations and acronyms

CAPS	CNRA Activity Proposal Sheet
CNRA	Committee on Nuclear Regulatory Activities (NEA)
CSNI	Committee on the Safety of Nuclear Installations (NEA)
DI&C	Digital instrumentation and control
EC	European Commission
EU	European Union
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
NEA	Nuclear Energy Agency
OECD	Organisation of Economic Co-operation and Development
WGCS	Working Group on Codes and Standards (NEA)
WGDIC	Working Group on Digital Instrumentation and Control (NEA)
WGHOFF	Working Group on Human and Organisational Factors (NEA)
WGIP	Working Group on Inspection Practices (NEA)
WGOE	Working Group on Operating Experience (NEA)
WGPC	Working Group on Public Communication (NEA)
WPBWR	Working Party on Boiling Water Reactors (NEA)
WGRNR	Working Group on the Regulation of New Reactors (NEA)
WGSAR	Working Group on the Safety of Advanced Reactors (NEA)
WGSC	Working Group on Safety Culture (NEA)

1. Introduction

The Committee on Nuclear Regulatory Activities (CNRA) and the Committee on the Safety of Nuclear Installations (CSNI) are two of the Nuclear Energy Agency (NEA) standing technical committees. These committees have the joint responsibility for the NEA strategic sector, “nuclear safety technology, regulation and the human aspects of safety”.

The NEA Strategic Plan for 2017-2022¹, states that the role of each standing technical committee is “to carry out the NEA Programme of Work efficiently in the sectors of activity, and to develop the basic strengths of the Agency as a key international instrument of co-operation”.

In order to be aligned with the new NEA Strategic Plan, the present CNRA Operating Plan and Guidelines intends to:

- identify the main challenges for nuclear safety in the next five years, and outline the focus areas to properly respond to those challenges;
- ensure appropriate consistency of the objectives, roles and responsibilities of the two committees so as to optimise the use of committee resources in achieving strategic goals;
- promote good communication and co-operation between the two committees
- establish guidelines and working methods that facilitate effective and efficient interaction between the committees and with other external bodies.

It describes the CNRA’s organisation, priorities and operating procedures to be used in fulfilling its mandate. This CNRA Operating Plan and Guidelines reflects the new challenges addressed by the NEA and incorporates objectives, schedules and mandates of the various CNRA working groups. Specific attention is given to ensure that cross-cutting issues are dealt with satisfactorily.

With the 2017-2022 NEA Strategic Plan, one goal of this Operating Plan and Guidelines update was to align with the CSNI Operating Plan and Guidelines, to the extent practical. While each committee has a separate organisation and must be responsive to those needs, co-ordination of the Operating Plans and Guidelines on common processes and procedures would increase efficiency of the committees and consistency between their working methods.

1. NEA (2017), *The Strategic Plan of the Nuclear Energy Agency, 2017-2022*, OECD, Paris.

2. CNRA and CSNI mission and scope

2.1. Mission

Nuclear safety constitutes a leading priority for Nuclear Energy Agency (NEA). The goal is to assist member countries in their efforts to ensure high standards of safety in the use of nuclear energy, by supporting the development of effective and efficient regulation and oversight of nuclear installations and activities, by helping to maintain and advance the scientific and technological base and by integrating enhanced safety culture, effective training and other essential human aspects, which also include the organisational aspects, of nuclear safety.

The Committee on Nuclear Regulatory Activities (CNRA) supports and contributes to this goal in its area of competence through its responsibility for NEA programmes and activities concerning the regulation, licensing and inspection of nuclear installations with regard to both the technical and human aspects of nuclear safety. The Committee on the Safety of Nuclear Installations (CSNI) supports and contributes to this goal in its area of competence through its responsibility for NEA programmes and activities that support maintaining and advancing the scientific and technical knowledge base of the safety of nuclear installations.

The current debate in many countries on energy is dominated by finding acceptable ways to supply the constantly increasing demand for energy, ensuring the security and affordability of those energy supplies and minimising environmental impacts. In this global context, nuclear power is an established and reliable technology viewed by many countries as having potential to be part of the solution for achieving robust low-carbon economies.

The mission of the CNRA and CSNI is to assist member countries in ensuring adequate safety of existing and future nuclear installations in their respective territories, through maintaining and further developing the knowledge, competence and infrastructure needed to regulate and support the complete life cycle, including the design, construction, operation, decommission and waste management of nuclear reactors, fuel cycle facilities and other nuclear installations. Both committees strive to continually improve the effectiveness and harmonisation of regulatory practices and to facilitate consensus through joint undertakings, shared expertise and close relationships.

In light of the increasing number of countries seeking to expand or introduce nuclear power in their energy policy, the committees may also interact with non-member countries, where appropriate, within the boundaries set by the Agency's policy orientation and promote the use of CNRA and CSNI products.

Vision

The vision of the CNRA and CSNI is to sustain excellence in the safety and regulation of existing and future nuclear installations.

2.2. Scope of the committees

The fundamental interest of both CNRA and CSNI is nuclear safety. This includes safety related to nuclear power plants and fuel cycle facility designs, from construction to operation and throughout their life cycle (i.e. initial start-up, full power, shutdown, refuelling and decommissioning). In particular, safety of the public and facility operating staff are both of concern. The CNRA and CSNI assist the member country safety regulators by conducting activities that strive to secure high standards of safety in the use of nuclear energy.

The committees recognise the high level of societal expectations with respect to nuclear safety practice in NEA member countries. From the public perspective, a key consideration is the absence of any accident leading to a significant radioactive release from any nuclear facility, a transparent demonstration that a low level of risk is achieved at all times in the life cycle of a nuclear facility and public confidence in regulatory systems in place. Accidents and incidents at nuclear facilities significantly impact public confidence and demonstrate the importance of continued vigilance in meeting the societal expectation regarding nuclear safety.

The construction of new reactors, fuel cycle facilities, and other nuclear installations, as well as the development of new reactor designs, also require CNRA and CSNI attention, considering that new technologies are being employed. Additionally, the committees should consider in their work scope that new countries with less experience in nuclear technology are entering the nuclear energy community leading to new challenges in the field of safety.

The committees also address the challenges of ensuring that an adequate knowledge base and infrastructure for supporting safety are available in sufficient amount and quality, and that the regulatory process takes place in a demonstrably objective, scientifically sound and transparent manner. The committees should strive for continual improvement in the effectiveness and efficiency of implementing regulatory processes.

Within the nuclear safety sector, the focus of CNRA activities is related to the effective and efficient regulation of civil nuclear installations and activities. The focus of CSNI activities is to provide the technical basis to support nuclear safety developments and regulatory activities by addressing identified issues with research programmes if deemed necessary.

3. Committee organisation and responsibilities

3.1. Membership of the CNRA

The members of the CNRA are nominated by NEA member countries and are senior representatives of the national nuclear regulatory authorities.

There are also invitees from non-member countries (as per the direction of the NEA Steering Committee) and observers from relevant international organisations.

Delegates are selected by their national organisations and are expected to have adequate authority to commit resources to fulfil the committee's programme of work.

3.2. Responsibilities of the Committee

The CNRA is mandated by the Steering Committee for the Nuclear Energy to “be responsible for the programme of the NEA programmes and activities concerning the regulation, licensing and inspection of nuclear installations with regard to both technical and human aspects of nuclear safety” (see Appendix A for the complete CNRA mandate).

In executing its programme of work the CNRA:

- Meets twice a year, with meetings held around early June and early December.
- Should devote part of its June or December meeting each year to the in-depth treatment of elected topics of high regulatory interest. Such meetings may take various forms, e.g. special issues meetings, high-level fora or workshops.
- Reviews, assesses and approves the annual programme of work performed by the committee.
- Provides the NEA Steering Committee with periodic, comprehensive and balanced overviews of safety regulation issues, and how they are addressed by the various NEA committees, thereby ensuring that cross-cutting regulatory issues are properly dealt with through improved co-operation between the committees concerned.
- Ensures that there is enough flexibility in the programme of work to address urgent regulatory safety issues that may emerge, e.g. being raised as the result of incidents or accidents.
- Ensures that committee and working group meetings, workshops, task forces and publications, are planned and run from the user's perspective in order to produce the most useful output. To ensure successful application of such a user perspective, the CNRA should perform regular assessments of the usefulness of the CNRA output to member organisations, not least with respect to added value to safety.
- Retains a Bureau to guide the committee in its programme of work and assist in high-level planning related to CNRA activities, including identification of priorities, regulatory goals and co-ordination with external organisations.
- Creates and maintains working groups as forum of discussion and for the exchange of information in specific areas of nuclear safety regulation. The CNRA reviews and approve the mandate for

each group at appropriate intervals in line with NEA policy and annually reviews and approves their programmes of work.

- Establishes, as required, senior-level task groups to address specific issues in terms of expected useful output and with specific time limits.
- Organises fora, conferences and workshops to address current and future nuclear regulatory challenges, urgent issues that may emerge, etc., having close regard to the schedules of meetings convened by other organisations on similar dates and/or topics.
- Strive for enhanced co-operation, co-ordination and communication among NEA's other standing technical committees, as necessary, to clarify priorities and required products, and to address cross-cutting regulatory issues in a timely way. In particular, interaction with CSNI is a priority to ensure the timely input to the CNRA of CSNI expertise, both in a shorter and longer time perspective.
- Interact and co-operate, as necessary, with other international regulatory activities, such as the Multinational Design Evaluation Programme (MDEP).

3.3. CNRA Chair

The Chair of CNRA presides over CNRA meetings, make presentations on the programme of work to the NEA Steering Committee (as required), represent the committee at the annual meeting of NEA Standing Technical Committee Chairs, co-ordinates in particular with the CSNI on CNRA activities, as well as with the Radioactive Waste Management Committee, the Committee for Technical and Economic Studies on Nuclear Energy Development and the Fuel Cycle, the Nuclear Science Committee, and other NEA committees and activities on matters of common interest and perform other functions as designated by the committee.

Either of the Vice-Chairs (or other CNRA Bureau members as designated by the committee) may perform these duties in the absence of the Chair.

3.4. CNRA Bureau

The Bureau generally consists of the CNRA chairperson, two vice-chairs and a limited number of CNRA delegates from different member countries considering the various regions, nuclear capacities, size and expertise.

The Chair, Vice-Chairs and Bureau members shall be designated by the committee each year. Typically, the Chair, Vice-Chairs and Bureau members may be re-designated by the committee to serve in their roles for three years for purposes of continuity.

The Bureau guides the committee in its programme of work. In this role, the Bureau:

- meets as necessary to formulate the programme of work of the committee and its subgroups;
- establishes and maintains (as a living document) a CNRA Operating Plan and Guidelines in alignment with the NEA Strategic Plan;
- submits proposals of new CNRA activities;
- meets annually with the CSNI Bureau to review and co-ordinate their respective programmes in regard to nuclear safety;
- promotes the communication and interaction within the CNRA structure, with other NEA committees and with external organisations;

- selects and recommend nuclear regulatory issues for inclusion in the working groups programme of work using the CNRA selection criteria and prioritisation scheme;
- identifies cross-cutting issues;
- performs other functions as designated by the committee.

3.5. Working groups

The CNRA currently has eight (8) working groups as follows (mandates are given in Appendix A):

- Working Group on Safety Culture (WGSC): responsible for work related to complex issues regarding safety culture to improve regulatory effectiveness and to ensure that licensees meet the ultimate responsibility for ensuring safety;
- Working Group on Inspection Practices (WGIP): responsible for work related to the development and use of good inspection practices;
- Working Group on Operating Experience (WGOE): responsible for work related to the share incident and event information to identify trends, responses and measures taken, and the lessons learnt;
- Working Group on the Regulation of New Reactors (WGRNR): responsible for work related to regulatory activities in the primary program areas of siting, licensing and oversight for new commercial nuclear power reactors;
- Working Group on the Safety of Advanced Reactors (WGSAR): responsible for work related to regulatory activities in the primary area of advanced reactors and associated installations;
- Working Group on Digital Instrumentation and Control (WGDIC): responsible for work related to harmonisation and improvements in nuclear safety through the development of regulatory guidance to address digital instrumentation and control topics and technical issues of concern for both operating and new reactors;
- Working Group on Codes and Standards (WGCS): responsible for facilitating and promoting international co-operation, convergence and reconciliation of codes, standards and regulatory requirements for pressure-boundary components in nuclear power plants;
- Working Group on Public Communication (WGPC): responsible for work related to review developments, progress, techniques, tools, procedures and achievements in the area of nuclear regulatory communication with the public and stakeholders.

The working groups consist of senior experts in their field on the specific issue of relevance to the group (e.g. WGIP is composed of nuclear regulatory inspectors) nominated by their respective CNRA members.²

Each working group should be a forum for the exchange of information in their area of expertise, identify emerging issues, discuss their implications and propose (as necessary) ways to address these issues and should receive guidance from the CNRA in formulating and implementing their programmes of work.

The successful close relationships between the committee and its subgroups, and between subgroups, require constant monitoring and oversight of the work. Additional concerns can also develop in determining the

2. The NEA Participation Plan describes the different status of non-member country participation in the working groups. Within this framework, NEA observer countries may appoint delegates to the working groups. Unless provided for under the terms of the OECD, non-member countries cannot attend working group meetings.

group membership (e.g. continuity needs, requirements to educate other staff internationally, resource needs). Therefore, it has to be ensured that proper attention is provided at an adequate level by each national organisation.

The committee should, on a regular basis, re-assess the scope, structure and number of working and senior-level task groups. The committee should also promote the communication and collaboration between the committee and the subsidiary groups.

Additionally, the committee needs to clearly articulate what the working groups need to accomplish and to provide the necessary support (e.g. resources). In return, the working groups need to respond accordingly to the committee.

In general, each working group should:

- Meet once or twice a year, as necessary, to carry out its programme of work.
- Elect each year a Chair and one or two Vice-Chair(s) to guide its work and report to the main committee. Typically, the Chair and Vice-Chair(s) may be re-designated by the working group to serve in their roles for three years for purposes of continuity.
- Carry out a round table exchange on regulatory practices within their area of expertise.
- Prepare state-of-the-art reports, reports, etc. on regulatory practices.
- Organise international workshops and conferences, and submit the outcomes and conclusions to the CNRA.
- Maintain close liaison with the other CNRA working groups.
- Maintain proper interfaces and co-ordination with working groups in the other NEA standing technical committees (especially the CSNI) and with other international organisations to minimise duplication and enhance knowledge transfer.
- Perform other functions as designated by the committee.

3.6. Senior-level task groups

Senior-level task groups are established to provide reports in the NEA member countries on the basic concepts of specific regulatory issues.

The main types of publications resulting from task group activities are NEA Regulatory Guidance Booklets, commonly known as “green booklets”.

These task groups use qualified consultants, where appropriate, to assist the Secretariat to merge and distil inputs from the CNRA member organisations into useful reports (but not to replace such inputs). Where appropriate, such task groups should also include expertise from other parts of the NEA, notably the CSNI network, but also from industry.

In general, senior-level task groups should consist primarily of CNRA members or other senior-level regulators. The task group should elect a Chair from within its membership.

Task groups should meet as necessary to meet their schedule.

Important characteristics of these groups include:

- Continuity of membership: while it is sometimes unavoidable, changes in group membership can cause problems in that new members coming into the group do not have the benefit of the previous discussions, and more importantly decisions that were made.

- Openness in discussions: the free and open exchange of ideas can provide new or unforeseen issues that can improve the report.
- Reaching consensus: finding consensus is not easy, but members should strive to be flexible in their objectives and to seek a common understanding.
- Timeliness in providing comments: late responses from one or two members can cause serious time delays.

4. Scope of work

To accomplish its mission, the Nuclear Energy Agency (NEA) Strategic Plan provides the Agency with high-level guidance for nuclear safety and regulatory activities.

Listed below are strategic initiatives from the 2017-2022 NEA Strategic Plan in the area of nuclear safety technology, regulation and the human aspects of safety, and in the area of liaising with industry and other stakeholders:

- facilitate an effective exchange of safety-relevant information among member countries, in order to identify significant generic issues and trends and to develop common understanding and approaches with a view to anticipate the resolution of such generic issues;
- foster the continuous enhancement of the knowledge base of nuclear safety and the safety expertise capability in member countries, through scientific co-operation and the development of joint projects;
- assist member countries in the resolution of safety issues and strengthen confidence in the solutions and their implementation;
- address safety issues associated with new technologies and reactor designs;
- address issues associated with nuclear safety culture and other human and organisational factors;
- help maintain an adequate level of capability and competence in member countries necessary to ensure the safety of existing facilities, in particular their long-term operation, and future nuclear facilities and activities;
- enhance the efficiency and effectiveness of the regulatory process and encourage harmonisation of the regulatory processes;
- improve communication of the nuclear organisations bodies and enhance stakeholder engagement by better understanding stakeholders' perceptions, needs and expectations.

In aligning their work to address these NEA strategic objectives the CNRA and CSNI have determined five major challenges for the committees in the upcoming years:

- Challenge 1: Adequate nuclear skills and infrastructure
- Challenge 2: Effectiveness and efficiency of activities related to safety
- Challenge 3: Safe operation of current nuclear installations
- Challenge 4: Safety in new nuclear installations and in advanced reactor designs
- Challenge 5: Human aspects of nuclear safety

These challenges are further described in the following subsections and form high-level direction from the committees to the working groups as they define their tasks. This Operating Plan and Guidelines provides more specific guidance to the working groups on their activities and focus areas in each challenge area.

4.1. Challenge 1: Adequate nuclear skills and infrastructure

In the NEA countries a large and significant fraction of the electricity is produced by nuclear power plants. As nuclear technology is complex with potential risks, the importance of maintaining and further developing nuclear expertise in nuclear safety assurances is paramount. Adequate nuclear skills and infrastructure is thus of major importance for nuclear safety.

There is thus a significant shift internationally in nuclear workforce demographics being experienced, as those staff experienced in all areas that affect the safety of installations (e.g. construction, operation, maintenance, engineering, technical and human aspects of safety, research, and regulation) approach retirement. At the same time, there is an increased demand for these skills due to the combined effect of the extended operation of current installations, construction of new installation, and increasing interest by non-nuclear countries to establish a nuclear programme. As a result, industry, regulatory bodies, technical safety organisations and research institutes need to ensure that sufficient levels of trained and competent staff exist to discharge their respective safety responsibilities.

The committees should include the following considerations when defining their programmes of work:

- reduction in experienced staff in nuclear workforce demographics in all areas (industry, regulators, research, etc.);
- impact of accidents and incidents, and the resultant demands on the nuclear workforce;
- increasing demand for skilled/trained staff in all areas for the extended operation of the current installations, and the design, construction and operation of new installations;
- increasing need for qualified suppliers of equipment and replacement parts;
- continuing need to support long-term research commitments including financial resources;
- effective use of the research and development infrastructure and knowledge bases through international collaborative efforts;
- increasing number of countries that are changing (establishing, expanding or reducing) their nuclear programme.

4.1.1. CNRA and CSNI focus

- The committees should give a high priority to and focus on new means to sustain safety excellence in operating and new nuclear installations given the increasing infrastructure challenges.
- The committees should support new opportunities for co-operative research and development efforts and information exchange to enhance the nuclear infrastructure in support of the safe operation and construction of nuclear installations. In committee-endorsed projects, research projects in particular, member countries should be encouraged to include educational considerations in support of increasing nuclear skills and infrastructure.

4.1.2. CNRA regulatory goals

Regulatory bodies must provide assurance that lack of nuclear skill does not jeopardise safety in the licensee's organisation and also it must ensure that the lack of nuclear skill does not erode its ability to regulate. In the last decade of nuclear facility operation, some loss of skills within existing nuclear organisations has occurred.

Some experienced people have retired without their knowledge being transferred to other workers. Written procedures and available documentation did not necessarily capture all the information needed to retain the lessons learnt and to train new recruits.

Additionally, there was a reduction in the intake of new students interested in the nuclear field, which now makes it more difficult to recruit individuals with the necessary qualifications.

In some countries, existing nuclear plants are entering or preparing for long-term operation. This makes it even more important for licensees and regulatory bodies to retain sufficient knowledge to assess the technical adequacy of a facility's original safety case, as well as maintain its knowledge to identify the need for upgrades and technically justify those upgrades or modernisation that might be required.

The obsolescence of components during the lifetime of a facility highlights the need for competent licensee staff to be able to specify accurate and complete procurement details, write and manage contracts and test component and systems prior to operation. The limited capability of worldwide manufacturers to produce spare parts and replacement equipment qualified to special nuclear standards was compensated at least to some extent by the general improvement of the quality awareness and quality management in the manufacturing industry. However, new regulatory positions are needed on quality assurance for safety classified equipment, to find an optimum between the special needs for nuclear quality versus high quality available from a standard production line. These issues are compounded in the case of a new organisation seeking to become a licensee for the first time, possibly in a country without previous experience of nuclear power generation or when the regulatory body is newly formed.

Additionally, new reactor designs, particularly at the start of a new design generation, are far from being static, and design problems that are addressed during construction or design review may, in the end, not resolve the issues. In case of new reactor designs, major challenges should be expected for the regulatory body, and the strains in terms of the nuclear expertise available to both the licensee and the regulatory body can be very significant.

These considerations lead the CNRA to define the following regulatory goals to be pursued in the coming years:

- to enhance knowledge transfer and management;
- to review and enhance the development and use of qualifications and training;
- to maintain an oversight of the licensee's use of contractors;
- to assess the adequacy of the regulatory body resources for key activities or processes;
- to confirm the licensee's ability to maintain technical core knowledge, especially to understand the technical details of its licensing basis and assess the quality of its contractors and vendors;
- to assist in the development of exchange programmes among regulatory bodies to facilitate inspectors, technical experts and scientist to work in productive environments of other regulators.

4.2. Challenge 2: Effectiveness and efficiency of activities related to safety

In order to sustain high levels of nuclear safety, it is not sufficient only to establish and meet regulations: developing and maintaining a healthy safety culture is essential. The licensee's safety culture and its sense of responsibility for safety are impacted by the type of relationships cultivated between licensees, technical support organisations and operators and the values conveyed within the interfaces and the importance given to safety – in short, the safety culture of the wider interconnected system within the nuclear industry.

There are also needs to be embedded in all organisations impacting on nuclear safety, a commitment to continuous improvements not least to guard against complacency and to ensure a consciousness of their own

safety culture. This requires continued attention to learning from experience and from others, and is especially important in a climate of rapid change and expansion in the use of nuclear energy. The accidents and incidents show the continued importance of this commitment. Thus, this is at the core of the work of the committees and represents a significant challenge.

Additionally, regulatory bodies and their technical support organisations need to ensure that new regulations, guidance, etc., and the revisions of existing regulations have sound technical bases and lead to enhancements in safety. Through continued learning from each other and harmonisation of implementation strategies for key regulatory processes, improvements in regulatory effectiveness and efficiency may be achieved. Improvements in effectiveness can be gained through the learning from others what has worked or not worked in response to particular issues, pooling of knowledge and experience, selection of relevant research efforts, etc. and in efficiency, through the use of collaborative efforts and cost sharing.

International, collaborative efforts on regulatory issues and research efforts provide an additional benefit of creating and maintaining relationships between international counterparts. An effective regulatory system should seek transparency and increased public awareness of safety and regulatory efforts.

The committees should include the following considerations when defining their programmes of work:

- Harmonisation, to the extent possible, of national strategies for key regulatory processes and /or requirements, in particular for licensing of new nuclear installations, and for inspection of components originating from different countries.
- Need for continuous improvement in effectiveness through the selection of relevant research topics, efficiency through the use of collaborative efforts and cost sharing, and timeliness of relevant safety studies and safety research.
- Increased transparency and public awareness of regulatory activities.

4.2.1. CNRA and CSNI focus

- The committees should focus on maximising outcomes of their work in line with their missions – “doing the right work” (effectiveness), and seeking collaborative work focused on “doing the work right” (efficiency) – in defining and implementing regulatory and research efforts including consideration of the interface between safety and security.
- The committees should support the harmonisation of regulatory practices.
- The committees should support cost sharing and cost-effective safety programmes and research efforts.
- The committees should focus on improving their capability to engage with and provide the public with clear, accurate and timely information on regulatory efforts and on the safety of nuclear installations.

4.2.2. CNRA regulatory goals

Regulatory bodies strive to be effective and efficient in the application of their regulatory authority. Effectiveness in the regulatory body looks to ensure that the regulatory body is “doing the right work” for assuring the licensee operates its facility in a safe manner. Efficiency looks to ensure that the activity is “doing the work right”. Consistent application of the organisation’s policies and procedures by all staff is essential. Regulatory activities should be performed in accordance with the organisation’s mission, strategy and plans.

Additionally, the public perception of the organisation is based, in part, on the organisation’s ability to communicate its activities to the stakeholders. Transparency in activities and routine engagement with stakeholders increases public confidence in the regulatory body. Loss of public and news media confidence

in the regulator's capability to carry out its mission could result in general deterioration of means needed for effective and efficient regulation. Accordingly, it is important to define the role of the regulatory body in public engagement.

Effective regulatory programmes have repeatable processes that can be applied consistently by a diverse workforce. As in Challenge 1, regarding adequate skill and infrastructure, the development of procedures and processes can assist in bridging the differences in the level of experience between staff, such that focus can be placed on gaining technical knowledge rather than learning process.

Regulatory bodies need to strive for continuous improvement in their own processes and procedures to ensure their effectiveness is maintained, and resources are used efficiently. Self-assessment by the regulatory body is essential to gauge if its activities are effective and efficient, and to identify opportunities for improvement. Further, through continued learning from each other and the harmonisation of regulatory practices, regulatory bodies are strengthened by their co-operation and co-ordination.

The current period is one characterised by changing (establishing, expanding or reducing) nuclear energy programmes, while at the same time with significant financial constraints on all OECD members. As such, the importance of international collaboration in nuclear safety research cannot be overstated. For CNRA members, this means that the committee must ensure that "the right work is carried out in the right way". Through it all, the importance of continuous learning, pooling of knowledge and experience and efficiency in the use of limited resources will be key.

These considerations lead the committee to define the following regulatory goals to be pursued in the coming years:

- to develop better understanding of effective relationships between regulator and operator;
- to harmonise key regulatory processes, practices and/or requirements for licensing of new facilities;
- to harmonise quality assurance programmes, in particular for application to manufacturers and vendors;
- to co-ordinate inspections, to share inspection results for components, to apply lessons learnt from inspections, operating experience, etc. and to encourage incorporating operating experience into the inspection process;
- to co-ordinate in particular with CSNI to match regulatory challenges with the research that is needed by the regulators for effective tool to incorporate into the regulatory process;
- to identify and share good practices in self-assessment of regulatory body (effectiveness of programmes and organisation);
- to better assess and support effective safety culture of regulatory bodies;
- to share and contribute to the understanding and optimisation of the balance between regulatory tools (licensing, inspection, assessment).

4.3. Challenge 3: Safe operation of current nuclear installations

The safety of operating installations depends on the integration of a number of factors such as design, siting, plant configuration, ageing of materials and components, safety culture and human and organisational aspects in maintenance, engineering and operation.

Understanding and managing the risks associated with the operation of nuclear installations requires the combined efforts of a licensee committed to taking the steps necessary to safely operate its facility and a

robust and independent regulatory body that ensures adequate measures are in place to address new challenges as they are discovered. Any accidents and incidents that occur underscore the importance of this effort.

When implemented effectively, regulatory oversight through the use of inspection and performance assessment can ensure that safety margins necessary for adequate protection are maintained. As more installations operate with extended licences and at increased power levels, it is critical to understand the safety implications of changes in plant configuration, operational modes, and the maintenance of ageing components.

Safety must be maintained, and even enhanced, through the use of operating experience, analysis, research and available tools such as probabilistic safety assessment (PSA) to gain insights that are not available from purely deterministic analyses.

The committees should include the following considerations when defining their programmes of work:

- the need to enhance the safety of nuclear installations by learning lessons from accidents and incidents;
- the need to ensure safety for the entire plant life cycle, in particular the management of ageing of materials and components;
- safety improvements through utilising operating experience, research and analytical tools, such as PSA, as well as advances in data collection and analytics;
- the need to ensure changes in plant configuration and operation (e.g. licence extension, power uprates and new operating modes) and new features, components and technology (e.g. DI&C) do not compromise safety;
- the continued improvement of safety culture and human and organisational aspects in maintenance, engineering and operation.

4.3.1. CNRA and CSNI focus

- The committees should focus on maintaining safety margins in light of advances in scientific and technical knowledge to ensure the implications of ageing, changes in plant configuration, and requested operating domains are understood and well managed.
- The committees should focus on improving the use of risk-informed regulatory strategies, updated with operating experience and safety research results, to evaluate, measure, and enhance the safety performance of nuclear installations.

4.3.2. CNRA regulatory goals

The fundamental objective of all regulatory bodies is the assurance of the safe operation of the nuclear facilities. The mantra, an accident anywhere is an accident everywhere, reflects the recognised fact that the international nuclear safety community is inseparable in the eyes of the media and public. Public communication is a key responsibility and tool for the regulatory body to ensure the public has the facts and the reassurance that safety is maintained and enhanced when necessary.

The safe operation of nuclear facilities is the management of a dynamic condition. Over the lifetime of a facility, the licensing basis will change as new technology and new processes are approved for use.

The licensee aims to manage operational costs and investments for required upgrades or for new components and systems to improve performance. It is the responsibility of the regulatory body to assure that safety is not jeopardised in those financial decisions. As a facility continues operation, new programmes are essential

to monitor and manage the effects of ageing. The challenges of replacing obsolescent parts and assuring quality control have resulted in the identification on a new market of substandard and fraudulent manufacturing. Industry and regulatory bodies must address this challenge in an aggressive manner to ensure safety is not jeopardised. International communication and awareness of operating experience and inspection practices are major elements in managing this emergent issue.

Regulatory bodies must identify the need for and utilise new technical analysis, risk or safety assessment, research results, and operating experience to strive for maintaining and enhancing the safe operation of the facilities over the complete span of a facility's operational lifetime. There is an important need for gaining efficiencies by international exchanging and sharing of information and regulatory experience. Further efficiencies can be realised as regulatory bodies enhance their international sharing to include more collaborative efforts and the harmonisation of practices.

The safety of operating nuclear facilities depends on a number of factors such as plant configuration, ageing of materials and components, safety culture and human and organisational aspects in maintenance, engineering and operation.

As more installations operate with extended licences, at increased power levels, with new fuel designs or new hardware or software technologies (in case of refurbishment), the impact on safety margins should be well assessed. Furthermore, safety analyses use more and more advanced methods and tools that require increasing regulatory scrutiny and understanding.

In addition, safety issues raised in the past by events and operating experience show that it is essential for industry and the regulators to continuously scrutinise safety cases and to preserve sufficient safety margins, reflecting the principles of effective regulation and current state of scientific and technical knowledge.

These considerations lead the CNRA to define the following regulatory goals to be pursued in the coming years:

- to further develop understanding of the issues of long-term operation and licence renewal;
- to better understand, assess and support effective safety culture, human and organisational aspects of licensee and its contractors and subcontractors;
- to assess the licensee's oversight of the quality management and management system of its contractors;
- to assess the licensee's improvements in aspects of management systems such as maintenance, knowledge management and data collection;
- to understand and assess the safety issues of plant ageing, modifications and changes/upgrades in design and licensing basis;
- to review and share practices of incorporating and addressing new technology in regulatory practices;
- to review and share experiences with regard to licensee's procurement processes: technical expertise; non-conforming parts; counterfeit, suspect and fraudulent parts;
- to conduct performance comparisons and to share good practices in the field of organisational and human factors inspections in co-ordination with the Working Group on Human and Organisational Factors (WGHOFF);
- to review and share regulatory inspection practices, including results communication to stakeholders.

4.4. Challenge 4: Safety in new nuclear installations and in advanced reactor designs

If new technology or analytical methodologies are utilised in a design, the regulatory body must ensure that a sufficient technical basis is demonstrated. Additionally, an assessment of current regulations and standards should be included in the review of new reactor designs and technology. International experience and lessons learnt from safety reviews and construction of new installations should be considered at the national level for safety reviews. Recent new design and construction experience has already demonstrated new challenges with a global workforce and suppliers. International collaborative efforts can yield improvements in regulatory practices and increases in the knowledge and understanding of new technology.

New approaches, new concepts and new technology often present new issues for safety. The development and validation of new analytical tools and research is necessary to support the identification and resolution of new or unique safety issues based on the technology of the advanced designs. Standards and safety practices for advanced designs have the greatest potential for international harmonisation and should be pursued to the extent practical. Likewise, international collaborative projects and cost-sharing have significant potential for mutual gains.

The committees should include the following considerations when defining their programmes of work:

- continued improvement of safety culture and human and organisational aspects;
- increasing need for the harmonisation of implementation of regulatory strategies, safety standards and safety practices worldwide;
- need to identify and address technical and safety issues specific to new and advanced designs, including those learnt from accidents and operational experience, and create a validation basis for new safety features;
- need for an assessment of the adequacy of current regulations and analytical tools for the safety review of new and advanced designs; and perform screenings of the research infrastructure needed to address the identified safety issues;
- increasing necessity to deal with a global environment, in terms of users/licensees, designers and service providers;
- the exchange of and access to scientific results, technical databases and standards across the nuclear safety community and the support of development and validation of new analytical tools;
- support of co-operative solutions to address the lack of experience base for new technologies, equipment and materials;
- identification of means for achieving long-term commitments and funding for safety research;
- consequences of new approaches for fuel cycle facilities on proliferation concerns.

4.4.1. CNRA and CSNI focus

- The committees should support, to the extent practical, the utilisation of new or improved analytical tools in safety reviews.
- The committees should provide a forum to discuss advanced design issues and encourage the balanced and gradual incorporation of items relevant to advanced reactor safety in the working group programmes of work.
- The committees should aim to identify the best practices in regulatory oversight through collaborative efforts among member countries, and support opportunities to increase global

nuclear safety by availing the information to non-member countries, to the extent possible, in accordance with NEA policy.

4.4.2. CNRA regulatory goals

As some CNRA member countries are experiencing and moving toward new licensing and construction, the regulatory bodies are facing additional regulatory challenges. Regulatory bodies have identified the desire to exchange experience and practices on technical issues on new reactor designs, reliability of components built on the basis of foreign codes and standards, inspection of construction, licensing processes, oversight of construction sites where units are operated, and the implications of new construction techniques. Many new and innovative reactor designs are also under development. As the designs become realised in the application for licensing, regulatory bodies must be able to anticipate and articulate the requirements necessary for applicants to demonstrate the adequacy of the design in meeting regulations and support its licensing basis. In some countries, a change in the reactor design may necessitate adapting the regulation. Additionally, public concern for new technology may require a regulatory body to provide additional effort for public engagement.

Licensee and regulatory bodies are challenged by workforces that are more international than in the past, including in the design, fabrication, construction and operation stages of a nuclear facility. Diversity brings new ideas and innovation. However, it also must be managed to ensure that the regulations and nuclear safety culture are maintained for the country in which the facility is licensed. Regulatory inspection practices and operating experience are important areas to exchange information on in order to improve and complement individual country programmes.

In view of the global spreading of manufacturing, it is no longer efficient or even possible for all national regulatory bodies to inspect all manufacturers of the high safety class components. There is a need to find solutions that provide proper sharing of the workload and confidence and comprehension in the work performed by other regulatory bodies. Harmonisation of regulatory practices should produce greater efficiencies for the safety review of new designs.

A general desire among the nuclear community is that a design found suitable in one country does not have to be substantially modified to meet licensing requirements elsewhere. This can be achieved, in part, if the requirements that must be satisfied in one country are consistent with, or at least not significantly different from, those that must be satisfied in another. Striving for harmonised regulations is relevant for both new reactors and modernisation of operating ones.

In general, the nuclear reactors of the existing fleet in the NEA member countries meet high standards for safety. CNRA's objective is therefore to contribute to extend this tradition with regard to new nuclear installations currently planned or being constructed as well as with advanced reactor designs.

Although the reactors of the third generation are largely based on the proven technologies of their predecessors' designs, new features or technologies and modified working environments may warrant new or revised regulatory approaches and international regulatory collaboration to assure the overall safety of the new builds.

These considerations lead the CNRA to define the following regulatory goals to be pursued in the coming years:

- to promote harmonisation in regulatory strategies and licensing process, including harmonisation of safety classifications for safety related components;
- to develop relevant approaches to safety cases for new technology;
- to share good practices on the regulatory oversight of contractors;

- to review and share information on licensees' and operators' procurement processes for technical expertise, non-conforming parts, counterfeit, suspect and fraudulent parts;
- to develop requirements for the regulatory oversight of construction management;
- to develop approaches and methods on regulator training issues, including construction inspector training;
- to review and to enhance the understanding of requirements between regulator/vendor/operator;
- to review and compare practices on the regulation of contractors during the construction licensing process;
- to develop and to share best practice guidelines for construction inspections, including pre-operational inspection practices;
- to further develop approaches to the oversight of communication between operator and vendor;
- to further develop approaches for the effective regulatory oversight of design basis management control;
- to review and to promote the development of design-neutral regulatory strategies;
- to better achieve public engagement on unique features of an innovative design.

4.5. Challenge 5: Human aspects of nuclear safety

Human and organisational factors are key contributors to safety, radiation protection and environmental protection at all stages of the life-cycle of any installation and throughout the entire nuclear fuel cycle.

Moreover, one of the conclusions from nuclear accidents and incidents that have occurred is that, important as they are, “hardware” changes do not fully respond to the lessons learnt from these events. These events show that human and organisational factors, as well as safety culture, are essential to all aspects of nuclear safety: from design, construction and operation to the response to any potential incidents or accidents.

The nuclear safety community has been diligent in looking at equipment and procedural aspects of nuclear safety and has been very successful in implementing these measures. However, one of the most challenging aspects to enhance – and one of the most important components of nuclear safety – is that of the human element.

The nuclear safety community clearly needs to be better at addressing the human aspects of nuclear safety.

Therefore, to further enhance the prevention and mitigation of accidents going forward, it is necessary to become better at learning and implementing these lessons and to be better at dealing with the human element. This includes the need to put more effort into understanding and improving safety culture, organisational decision making, qualifications, training (including for the unexpected) and leadership for safety.

CNRA and CSNI have already recognised the importance of the human aspects of nuclear safety and have over many years considered the topic and carried out work to better understand the challenges that exist in the area and to promote good practices.

The committees should include the following considerations when defining their programmes of work:

- taking a systemic approach to safety, by considering the interaction between humans, technology and organisations;
- continued improvement of safety culture and human and organisational aspects;

- increasing demand for skilled/trained staff in all areas for the extended operation of the current installations, and the design, construction and operation of new installations;
- increased transparency and public engagement of regulatory activities.

4.5.1. CNRA and CSNI focus

- The committees should support and promote enhanced safety culture, effective training and other human aspects of nuclear safety.
- The committees should aim to identify the best practices in human aspects of nuclear safety through collaborative efforts among member countries, and support opportunities to increase global nuclear safety by making the information available to non-member countries to the extent possible and in accordance with NEA policy.
- The committees should provide a forum to discuss human aspects of nuclear safety and encourage the balanced and gradual incorporation of items relevant to the safety of nuclear facilities in the working group programmes of work.
- The committees should give a high priority to and focus on new means of developing approaches to the human aspects of nuclear safety that enhance the safety of existing, new and advanced nuclear facilities.

4.5.2. CNRA regulatory goals

The safety of nuclear facilities depends on a number of facets in the area of human and organisational factors including safety culture and training in all stages from design to construction, operation, maintenance, and decommissioning.

These considerations lead the CNRA to define the following regulatory goals to be pursued in the coming years:

- to better understand the impact of reductions in experienced staff and changes in the nuclear workforce demographics in all areas (industry, regulators, research, etc.) and develop suitable regulatory approaches;
- to develop a better understanding of the impact of accidents and incidents and the resultant demands on the nuclear workforce;
- to address the increasing demand for skilled/trained staff in all areas for the extended operation of the current installations, and the design, construction, and operation of new installations;
- to improve the transparency and public awareness of and engagement in regulatory activities;
- to develop better understanding of effective relationships between regulator and operator;
- to better assess and support effective safety culture of regulatory bodies;
- to better understand, assess and support effective safety culture, human and organisational aspects of licensee and its contractors and subcontractors and develop regulatory oversight tools;
- to conduct performance comparisons and to share good practices on inspections of organisational and human factors (in co-ordination with the WGHOFF) and develop tools for regulatory oversight in this area.

4.6. Mapping of working groups activity to CNRA challenges and regulatory goals

The CNRA challenges and regulatory goals described above are listed in Appendix B, along with a cross reference to the working groups involved. For some regulatory goals, a specific working group may have the main responsibility, and in other cases a number of working groups may contribute.

The expectation is not that every regulatory goal needs to be covered by the working groups listed in Appendix B but rather that this list be used to plan and prioritise activities within a group. CNRA expects working groups to include reference to the regulatory goals in Appendix B when drafting a CNRA Activity Proposal Sheet (CAPS).

5. Working methods and procedures

To help the CNRA meet organisational and regulatory goals, it has established working methods and procedures providing a uniform, consistent and structured process for the conduct of committee activities. This section describes those working methods and procedures.

The CNRA work is managed and organised according to the following top-down scheme (see Table 1 below).

Table 1: Hierarchical CNRA management document scheme

Type of document	Programmatic content	Approved by
NEA Strategic Plan	Strategic goals and objectives	NEA Steering Committee
CNRA Operating Plan and Guidelines	Five major challenges and CNRA regulatory goals	CNRA
CNRA Activity Proposal Sheet (CAPS)	Description of a proposed activity – scope, schedule, milestones, etc.	CNRA

5.1. Prioritising criteria

As proposals for new work are made and considered by CNRA, the priority of the proposed work needs to be considered. The following criteria should be used by working groups and task groups in proposing priorities for new work:

- Criterion 1: Relevance to CNRA challenges and regulatory goals.
- Criterion 2: Better accomplished through international co-operation under the NEA.
- Criterion 3: Likely to bring conclusive results and significant added value to nuclear safety in a reasonable time frame.
- Criterion 4: Capacity to maintain and preserve strategic safety competence.

Questions or specific requests to CNRA coming from the CSNI will be treated as high priority. In order to be treated effectively, the CSNI request should clearly identify the matter to be addressed and the expected CNRA product. The CNRA should determine the best way to respond to such request and, when this entails group work, define the scope, timetable, resources and lead group, including reporting to both CNRA and CSNI. Note that it is more common for the CNRA to request CSNI support on a technical issue than it is for the CSNI to request CNRA support on a regulatory issue.

5.2. Initiation and management of an activity

5.2.1. Initiation of an activity

All CNRA activities have a life cycle that consists of initiation, management and closure. Prior to initiation of any CNRA activity, CNRA approval is necessary. Proposals for new work can come from the working groups, the CNRA Bureau, individual CNRA members or from external sources (e.g. CSNI requests).

The work of CNRA is dependent upon the resources that are made available by member countries for participation in the working groups, task groups or other special projects. Therefore, when a proposal for new work is approved by CNRA, approval implies a commitment of resources by participating member countries to accomplish the task on the proposed schedule.

For new tasks, the committee or working group should use existing documents and efforts by other WGs, NEA committees and external organisations, such as IAEA and EC, in order to avoid the duplication of effort and exploit the opportunity to expand the knowledge base in the topic area.

All new working group activities are presented using the CNRA Activity Proposal Sheet (CAPS) as shown in Appendix C. The CAPS is prepared when an activity is submitted to CNRA for approval. The same format is to be used for activities assigned by the CNRA to a working group or technical group, i.e. for work initiated through a top-down approach.

The person, group or organisation proposing an activity is responsible for providing the information requested in the proposal template and providing it to the Secretariat in sufficient time to be considered by members prior to presenting it to CNRA for approval.

The proposal needs to include information on priority, schedule, co-ordination and resources, link to CNRA regulatory goals as well as a full description and justification. Relations to other activities and cross-cutting aspects should to be explicitly addressed.

Regarding resources, new tasks should not be proposed unless the resources are clearly assessed, the expertise needed is identified, and both aspects firmly committed in advance. It is the responsibility of the proponent(s) to ensure that this commitment is acknowledged by the respective CNRA representative(s). If this would involve deferring or cancelling lower priority work, this should be included in the proposal.

Cross-cutting issues might be identified by a working group or Bureau. To ensure proper handling of the cross-cutting issues, there should be one lead working group, which should interact with other working groups as appropriate. Monitoring should be the same as for other activities. In some cases, the CNRA may establish a task group to deal with a specific cross-cutting issue.

5.2.2. Management of an activity

After approval by CNRA the activity should be managed by the lead working group or by a task group. A project management approach should be applied if relevant to each activity to ensure progress is closely monitored, problems identified and resolved (and when necessary brought to CNRA attention), schedules adhered to and a quality product produced.

Monitoring of the progress is a responsibility of the working group Chair with, if applicable, support of the activity leader and the NEA Secretariat. In this regard, each activity should have an assigned technical lead (i.e. project manager), who is responsible for the detailed planning, monitoring, timeliness and quality of the activity, including reporting of progress or problems to the working group. The working group should ensure that all activities have a nominated lead.

CNRA performance will be tied closely to the timeliness and quality (well written, practical and useful) of CNRA products.

5.3. Meetings

5.3.1. Committee and Bureau meetings

As mentioned in Section 3.2, CNRA meets twice per year (June and December) to review status of the programme of work, approve the publication of completed products and approve proposals for new work.

Items to be routinely discussed at the CNRA meeting should include:

- general information regarding the NEA;
- review of working groups programme of work;
- information regarding across working groups within CNRA and with CSNI working groups;
- a relevant strategic topic for discussion with respect to current issues, regulatory needs and possible CNRA actions;
- the exchange of regulatory information and regulatory practices;
- how the CNRA products and inputs are being used in member countries;
- interface and interaction with others, including:
 - other NEA standing technical committees and in particular the CSNI;
 - international organisations e.g. European Union (EU) and International Atomic Energy Agency (IAEA).

The CNRA Bureau generally also meets at least twice per year, in conjunction with the June and December CNRA meetings, to discuss administrative, policy, schedule, and organisational matters. A report by the CNRA Bureau is made at each CNRA meeting.

Workshops and seminars may be convened to discuss special technical topics, topics of overarching interest, to prepare for topical activities or to determine the significance of results achieved in particular activities.

5.3.2. Working groups meetings

The working groups generally meet and report to CNRA at least once per year. The task groups meet on an as needed basis and report to CNRA on the status of their activities.

Items to be routinely discussed at the CNRA meeting should include, at least:

- report by the Chair of last CNRA meeting;
- report by the NEA Secretariat of any relevant information regarding the NEA and its committees;
- review of the working group programme of work;
- task proposal discussion;
- tasks preparation, including workshops preparation;
- interface and interaction with others, including:
 - other NEA standing technical committees and in particular the CSNI;
 - international organisations e.g. EU and IAEA;
 - across working groups within CNRA and with CSNI working groups;
- next CNRA meeting preparation.

5.4. Working group reporting to the committee

Working groups should present their programme of work to the committee on an annual or semi-annual basis. This update is generally presented by the Chair or Vice-Chair of the working group. As practical, the presentations should be posted on the committee member's webpage when they are completed, with a goal of one week prior to the committee meeting.

The presentation to the committee should include, as appropriate:

- a summary of any changes in the leadership for the working group;
- a graphical summary (as presented in Appendix C) of activity progress against the schedule/milestones as set out in the relevant CAPS;
- the status of current activities, including upcoming milestones, significant delays, etc.;
- the main regulatory findings;
- the proposals for new activities to be approved by the CNRA;
- the completed deliverables for approval by the CNRA;
- the reports, data or any other document presented for information of the CNRA;
- an outline of future activities being considered by the working group;
- a brief summary of outreach and co-operation with other organisations.

5.5. Co-operation, co-ordination and communication

5.5.1. Relations with other working (or tasks) groups

The working groups are encouraged to co-ordinate and interact with other groups on topics of mutual interest. When a topic or event of mutual interest is identified by a working group, the Chair should contact the Chair of the other working group to share the information and organise, if appropriate, a dedicated meeting.

It should be clearly noted that this information for provided for the interest of the working group and any discussion or decision for further activity is at the discretion of the working group or governing committee. Both groups should notify the committee of the co-ordination effort to share information.

The NEA Secretariat will assist to facilitate communications as needed.

For an individual activity, such co-operation can take the form of inviting comment on a proposed activity, inviting participation in the activity or inviting review of the product(s) from the activity. In addition, participation can be sought for technical discussions at working group meetings.

Where there are diverging views between working groups, task groups and/or projects, the issue should be brought to the attention of the CNRA Bureau, which should recommend resolution, engaging the CNRA and its members as appropriate or required.

5.5.2. Relations with the CSNI

In implementing its programme of work, the CNRA should work closely with CSNI to ensure co-ordination and co-operation in areas of mutual interest. To accomplish this, the following activities should be undertaken:

- briefing CSNI on CNRA activities and completed products;
- receiving briefings from CSNI on its activities;
- making requests for assistance from CSNI (and vice versa);

- discussing co-ordination, co-operation, priorities in joint CNRA/CSNI Bureau meetings;
- conducting joint workshops, seminars, etc. on topics of mutual interest;
- inviting CSNI representatives to participate in selected CNRA activities;
- issuing joint reports, opinions or statements on topics of mutual interest.

5.5.3. Relations with the International Atomic Energy Agency, the European Commission and other international bodies

In order to ensure that work is complimentary and to increase synergy with the International Atomic Energy Agency (IAEA), the European Commission (EC) and other international bodies as well as to optimise the use of resources, it is key that CNRA and its working groups engage and co-operate with relevant international organisations in the planning and execution of its programme of work.

A key tenet of the work undertaken by CNRA and its working groups is to ensure that its work complements that of these international bodies and does not duplicate efforts. The IAEA and the EC in particular are invited to CNRA and working group meetings to facilitate this co-ordination and co-operation.

5.5.4. Relations with industry and other stakeholders

The CNRA should ensure that contacts with industry and other stakeholders are maintained and that relevant information and technical data is collected and utilised in the work of the committee and its working groups, as appropriate. Representatives from industry and other stakeholders should be invited to take part in specific activities, particularly where their expertise and/or experience is relevant.

6. Documentation and dissemination

In order to carry out its programme of work, it is necessary that the NEA Committee on Nuclear Regulatory Activities (CNRA) has clear and transparent processes, performs its work efficiently and effectively and ensures that its activities are well documented. The following sections define the different types of reports and other documents that are produced as outputs of the CNRA activities and how they are disseminated.

An important aspect of the committee and its activities is the contribution made toward knowledge management and transfer. The various reports (e.g. workshops proceedings, green booklets, state-of-the-art reports), and other deliverables and products ensure that knowledge is captured and broadly available for individuals and organisations including those who are new to a particular technical area.

Moreover, the Nuclear Energy Agency joint international project activities, benchmarks, technical meetings, workshops, and summer schools all provide excellent opportunities to involve less experienced (younger) staff and thereby serve to transfer knowledge from more experienced staff.

CNRA promotes transparency and openness to the extent practicable in the distribution and dissemination of its products. Given the importance of nuclear safety and its regulation, CNRA products should be made openly available to members and non-members, unless specific circumstances require a more limited distribution.

6.1. CNRA documents

The CNRA uses various types of NEA documents in conducting its work. Some of them (publications, reports and meeting documents) are formal records maintained in the OECD document management system. Other (technical notes and internal documents) are informal records maintained in the NEA electronic file system.

6.1.1. Publications

CNRA Publications include significant regulatory reports and CNRA regulatory guidance green booklets. These reports are assigned both an NEA reference number for CNRA (e.g. NEA/CNRA/R(20xx)x) and an NEA number (publication). NEA/CNRA publications are issued for CNRA are categorised under Nuclear Regulation. Such reports are normally initiated by the CNRA or one of its working groups, with a clearly defined purpose from a user perspective.

Publications are typically available in both printed and electronic form.

Significant regulatory reports

Those reports which contain significant information on nuclear regulatory safety issues including results from major workshops and which the committee deems of high interest to others (e.g. government authorities, nuclear power plant operators, general public) shall be produced as an NEA publication. In most cases these are “for sale” publications and are issued in the official languages of the OECD (French and English).

CNRA regulatory guidance green booklets

The CNRA may produce regulatory guidance green booklets to provide the consensus of senior-level regulatory experts in the NEA member countries in the basic concepts of a specific regulatory issue (e.g. safety culture, de-regulation, decision making) in a concise pamphlet. In most cases these are free publications.

In order to better clarify the contents and identify the series of CNRA green booklets, with the issuance of this operating plan, they are sequentially numbered.

6.1.2. CNRA reports

CNRA reports are categorised under the NEA heading of Nuclear Regulation. They are identified with an NEA reference number for CNRA (e.g. NEA/CNRA/R(20xx)x).

These types of reports consist of documentation on activities that CNRA, its working groups or task groups would find useful to have recorded in such a series.

They are in separate, numbered series for the CNRA and each of its working groups. They are typically available from the Secretariat only in electronic form and could consist of simple electronic compilations of presentations at meetings and workshops.

Regulatory practices and state-of-the-art reports

These are generally reports prepared by a CNRA working group or generated from a CNRA special issues meeting on specific regulatory safety issues.

Workshop proceedings

Workshop proceedings normally contain a compilation of the papers and presentations made at the workshop along with additional background information that was obtained either through surveys or questionnaires.

In most cases a summary of the workshop with the main conclusions and/or recommendations are included.

Working group reports or technical notes

Working group reports generally consist of specific results from surveys or topics of interest within the expertise of the working group itself. In general, the reports contain significant information that is valuable to international experts working within the specific discipline and not necessarily to all regulators.

Working Group Reports are categorised under the NEA heading of Nuclear Regulation and identified with an NEA reference number for Working Group (e.g. NEA/CNRA/WGxx/(20xx)x).

6.1.3. Executive summaries for CNRA documents

Each CNRA document usually includes an executive summary that allows the reader to understand the main outcomes and the significance of the document.

The importance and implications of the completed work needs to be clearly and succinctly explained.

In particular, executive summaries should discuss the impact on nuclear regulation and safety of the work performed, the regulatory and policy implications, the impact on the current and future CNRA programme of work, possible follow-up actions, conclusions and recommendations, etc. of the work being reported on.

An executive summary should be concise (preferably only one or two pages) and address the following five topics:

- background;

- objective of the work;
- what was done (including key assumptions and limitations, etc.);
- results and their significance;
- conclusions and recommendations.

In reviewing reports and their executive summaries, the following should be the standard for approval:

- Does the report clearly describe the objective of the work?
- Does the report clearly describe results and their significance (if appropriate)?
- Does the report contain practical conclusions, follow-up actions and/or recommendations?
- Is the report clear as to its scope and usefulness?

6.2. Dissemination

Publications and reports produced by the CNRA are generally classified as “Unrestricted” and are available in electronic form through the CNRA’s public webpage. In addition, the NEA makes selected publications available in printed form and disseminates them more widely. If warranted (for example due to the proprietary nature of the information), the CNRA may choose to restrict access to a particular document, in which case it is classified as “For Official Use Only”.

The Secretariat, in concurrence with the CNRA Bureau, should determine the proper access requirements for CNRA documents (e.g. summary records should have secure password protected access, while CNRA reports should normally be unrestricted and open to the public). Moreover, easy localisation and downloading of CNRA documents over the Internet is a key factor from a user perspective.

All CNRA documentation should be made available³ on the NEA website in the appropriate locations. The Nuclear Safety section has a portion accessible only to CNRA members and observers. Working groups have similar sections on their individual pages, protected by password. Additional secure access areas for specific tasks should be based on their particular requirements.

6.2.1. CNRA publications

CNRA publications are “Unrestricted” documents and are, therefore, publically available.

Printed version: hard copies of all publications should be distributed to all CNRA members and CNRA observers, and members of CNRA working group that produced the report.

Additional copies should be available upon request to the Secretariat.⁴ The Secretariat, in concurrence with and as designated by the CNRA or its Bureau, should also distribute copies to other NEA standing committees (e.g. CSNI), organisations, stakeholders, etc.

Electronic version: downloadable versions of all publications should be made available on the NEA web site.

6.2.2. CNRA reports

CNRA reports are “Unrestricted” documents and are publicly available. They are not usually printed.

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3. There may be some circumstances in which this is not possible and the Secretariat should inform the CNRA members accordingly.
 4. Printed copies of the glossy publications are normally limited to one publication run. Following distribution of all glossy copies, the Secretariat may make available alternate paper copies.

Electronic version: downloadable versions of all CNRA reports should be made available on the NEA web site. They should be distributed to all CNRA members, CNRA observers and members of CNRA Working Group that produced the report. The Secretariat, in concurrence with, and as designated by the CNRA or its Bureau, should also distribute copies to other NEA standing technical committees (e.g. CSNI), organisations, stakeholders, etc.

6.2.3. Working group reports or technical notes

Working group reports are for use by the working group members. The reports are approved by the working group, and not the committee level. The reports are generally “For Official Use Only” and are not printed.

Electronic version: downloadable versions of internal working group documents should be made available on the secure web site associated with the working group performing the work. The reports should be distributed to the CNRA working group members which produces the report. The Secretariat, in concurrence with, and as designated by the CNRA or its Bureau, should also distribute copies to others.

6.2.4. CNRA and working group meeting documents

CNRA and working group meeting documents are for use by the members, and are therefore classified as “For Official Use Only”. They are not publically available and are not printed.

Electronic version: Downloadable versions of meeting notifications should be made available on the committee’s restricted area of the NEA web site. All meeting notifications⁵ and summary records should be distributed to all CNRA members, CNRA observers and members of the CNRA working groups. The Secretariat in concurrence with and as designated by the CNRA or its Bureau should also distribute copies to other interested parties. In three years, the summary record should be re-classified as “Unrestricted”. The various documents supporting meeting agenda items should be placed in the committee’s restricted area as soon as they become available. Summary records should be made available in the committee’s restricted area.

5. Meeting notifications for individual working groups will be transmitted to the CNRA and the specific working group involved.

Appendix A: CNRA and working group mandates

Committee on Nuclear Regulatory Activities

Members:	All NEA member countries
Full Participant:	European Commission <i>Under the NEA Statute</i>
Observer(s): (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	31 October 1989
End of mandate:	31 December 2022

Mandate (Document reference)

- Mandate, membership and organisation of the Committee on Nuclear Regulatory Activities [NE(89)12]
- Summary record of the 9th Meeting of the Committee on Nuclear Regulatory Activities [[NEA/SEN/NRA\(98\)1](#)]
- Review of the NEA Committee Structure [[NEA/NE\(2000\)11/REV1](#)]
- Review of Mandates of the NEA Standing Technical Committees [[NEA/NE\(2005\)2](#)]
- Summary of Decisions Taken at the 117th Session of the Steering Committee for Nuclear Energy [[NEA/SUM/DEC\(2008\)2](#)]
- Review of the NEA Standing Technical Committee Mandates [[NEA/NE\(2010\)7](#)]
- Summary of Decisions Taken at the 121st Session of the Steering Committee for Nuclear Energy [[NEA/SUM/DEC\(2010\)2](#)]
- Review of the Mandates of NEA Bodies Reporting Directly to the Steering Committee [[NEA/NE\(2016\)5](#)]
- Summary of Decisions Taken at the 133rd Session of the Steering Committee for Nuclear Energy [[NEA/SUM/DEC\(2016\)2](#)]

Mandate

The Committee on Nuclear Regulatory Activities (CNRA) shall be responsible for OECD Nuclear Energy Agency programmes and activities concerning the regulation, licensing and inspection of nuclear installations with regard to both technical and human aspects of nuclear safety. The Committee shall constitute a forum for the effective exchange of safety-relevant information and experience among regulatory organisations. To the extent appropriate, the Committee shall review developments which could affect

regulatory requirements with the objective of providing members with an understanding of the motivation for new regulatory requirements under consideration and an opportunity to offer suggestions that might improve them and assist in the development of a common understanding among member countries. In particular it shall review regulatory aspects of current safety management strategies and safety management practices and operating experiences at nuclear facilities including, as appropriate, consideration of the interface between safety and security with a view to disseminating lessons learnt. In accordance with the NEA Strategic Plan for 2017-2022, the Committee shall promote co-operation among member countries to use the feedback from experience to develop measures to ensure high standards of safety, to further enhance efficiency and effectiveness in the regulatory process and to maintain adequate infrastructure and competence in the nuclear safety field.

The Committee shall promote transparency of nuclear safety work and open public communication. In accordance with the NEA Strategic Plan, the Committee shall oversee work to promote the development of effective and efficient regulation.

The Committee shall focus on safety issues and corresponding regulatory aspects for existing and new power reactors and other nuclear installations, and the regulatory implications of new designs and new technologies of power reactors and other types of nuclear installations consistent with the interests of the members. Furthermore it shall examine any other matters referred to it by the Steering Committee for Nuclear Energy. The work of the Committee shall be collaborative with and supportive of, as appropriate, that of other international organisations for co-operation among regulators and consider, upon request, issues raised by these organisations. The Committee shall organise its own activities. It may sponsor specialist meetings, senior-level task groups and working groups to further its objectives.

In implementing its programme, the Committee shall establish co-operative mechanisms with the Committee on the Safety of Nuclear Installations in order to work with that Committee on matters of common interest, avoiding unnecessary duplications. The Committee shall also co-operate with the Committee on Radiation Protection and Public Health, the Radioactive Waste Management Committee, and other NEA committees and activities on matters of common interest.

Working Group on Safety Culture (WGSC)

Members:	All NEA member countries
Full Participant:	European Commission <i>Under the NEA Statute</i>
Observer(s):	International Atomic Energy Agency (IAEA)
(International Organisations)	<i>By agreement</i>
Date of creation:	6 July 2017
Start of current mandate:	6 July 2017
End of mandate:	31 December 2022

Mandate (Document reference)

- Summary record of the 36th Meeting of the Committee of Nuclear Regulatory Activities (CNRA) held on 5-6 December 2016 [[NEA/SEN/NRA\(2016\)4](#)]
- Summary record of the 37th Meeting of the Committee of Nuclear Regulatory Activities (CNRA) held on 29-30 May 2017 [[NEA/SEN/NRA\(2017\)3](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Mandate

As identified in the Nuclear Energy Agency (NEA) report, *Five Years after the Fukushima Daiichi Accident: Nuclear Safety Improvements and Lessons Learnt (2016)*, there are challenges in understanding and characterising the importance of a healthy nuclear safety culture. The Committee on Nuclear Regulatory Activities (CNRA) considers human aspects, including organisational factors and a healthy safety culture, essential to all aspects of effective regulatory activities. As the primary purpose of these activities is to ensure that nuclear licensees maintain safety at all times, it is imperative that regulatory bodies possess specific characteristics that effectively support safety. This includes embodying the behaviours and attitudes that support a healthy nuclear safety culture. The interactions of the regulator with licensees, political/governmental entities and other stakeholders have a bearing on the safety culture of the regulatory body as they are all part of a wider interconnected system. Due to the importance of a healthy safety culture to the effectiveness of a regulatory body, the CNRA established a Working Group on Safety Culture (WGSC). This working group supports the CNRA mandate, which states, “The Committee shall oversee work to promote the development of effective and efficient regulation.” The CNRA has established the WGSC for member countries to collaboratively address complex issues regarding safety culture to improve regulatory effectiveness and to ensure that licensees meet the ultimate responsibility for ensuring safety.

Scope

The scope of the WGSC is to foster discussion and exchanges, and consider various practical approaches to developing and sustaining a healthy safety culture within the wider interconnected system to ensure safety. The working group will further develop concepts from recent Green Booklets that focused on the characteristics and culture of an effective regulatory body, such as, but not limited to:

- Considering behaviors and perceptions, which make up the culture of a regulatory body, as important to regulatory effectiveness.

- Considering the effects caused by the interactions of the regulatory body within the wider interconnected system and how safety culture is affected by these interactions.
- Considering national and historical contexts and their effect on how safety is supported through interactions across all levels and all areas of the organisation when developing and sustaining a healthy safety culture.
- Considering what regulatory programmes, approaches and capabilities might be required to encourage enhanced safety culture in licensee organisations.

Objectives

The main objective of the WGSC is to provide a senior level regulatory forum for exchanging information and experiences and planning work to ensure that the safety culture of the regulatory body and wider interconnected system has a positive impact on safety. In order to accomplish this, future activities shall:

- Aid in the development and maintenance of a healthy safety culture within regulatory bodies.
- Develop practical implementation tools for developing a safety culture from shared activities, lessons learnt, reports, and the outcomes of periodic meetings.
- Identify and capture best practices on how the safety culture of the regulator affects the regulated entity's safety culture, and vice versa.
- Promote the use of regulator safety culture programmes and approaches that positively influence regulated entities safety.
- Establish a framework for engagement with other NEA bodies to discuss issues identified by the group that have cross-cutting interests.
- Compile the experiences and lessons learnt associated with the implementation of policies and strategies to support a healthy safety culture with a specific focus on the NEA documents *The Characteristics of an Effective Nuclear Regulator* (2014) and *The Safety Culture of an Effective Nuclear Regulatory Body* (2016) and make recommendations as appropriate.

Working methods

- The WGSC membership shall be composed of senior level management representatives with policy-level responsibilities who are directly involved in key activities. Members may bring safety culture experts from their organisations to enrich the exchanges between the regulatory bodies.
- Periodically, the WGSC will report to the Committee on Nuclear Regulatory Activities (CNRA) and assist the Committee with its work.
- The WGSC will closely co-ordinate its work with other CNRA working groups, other NEA standing technical committees and international organisations such as the IAEA in order to apply the right expertise to the right issues and avoid duplicating efforts.
- The group will report on the effectiveness of the practical tools developed.
- The programme of work provides further descriptions of the development of strategic themes, practical tools and tasks that the WGSC will complete.

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear

safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

Generating reports on best practices by regulatory bodies concerning the effective implementation of the characteristics and culture of an effective regulatory body.

Working Group on Inspection Practices (WGIP)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observers:	International Atomic Energy Agency (IAEA)
(International Organisations)	<i>By agreement</i>
Date of creation:	12 November 1990
End of mandate:	31 December 2022

Mandate (Document reference)

- Summary record of the 2nd Annual Meeting of the Committee on Nuclear Regulatory Activities [[NEA/SEN/NRA\(90\)7](#)]
- Summary record of the 3rd Meeting of the Committee on Nuclear Regulatory Activities [[NEA/SEN/NRA\(92\)1](#)]
- Summary record of the CNRA Special Issues Meeting on the Regulatory Aspects of Ageing Reactors [[NEA/SEN/NRA\(98\)3](#)]
- CNRA Operating Guidelines, June 2006 [[NEA/CNRA/R\(2006\)3](#)]
- Summary record of the 17th Annual Meeting of the Committee on Nuclear Regulatory Activities (CNRA) [[NEA/SEN/NRA\(2006\)1](#)]
- Summary record of the 23rd CNRA meeting [[NEA/SEN/NRA\(2010\)2](#)]
- CNRA Operating Plan and Guidelines (2011-2016) [[NEA/CNRA/R\(2011\)2](#)]
- Summary record of the 35th Meeting of the Committee on Nuclear Regulatory Activities [[NEA/SEN/NRA\(2016\)2](#)]
- Summary record of the 38th Meeting of the CNRA, held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting of the CNRA (*forthcoming*)

Introduction

Regulation and monitoring of operating civilian nuclear facilities and activities is a fundamental duty of any nuclear regulatory body. Although a regulatory body has many methods available for the regulation and monitoring of operating civilian nuclear facilities and activities, inspection⁶ remains the key mean of verification available. The conduct of inspections provides an essential and valuable source of information for a regulatory body's integrated assessment and comprehensive safety oversight process. Inspection gives a regulatory body the ability to verify that licensees, during all the phases of the performance of their activities, operate the facility safely, that their activities fully comply with all applicable regulations and that safety is given the highest priority. Inspection also provides a basis for regulatory enforcement.

⁶ . Inspection means any examination, observation, measurement or test to assess structures, systems, components, materials, operational activities, processes, procedures, and personnel and organisational competence.

Mandate

In this context, the mandate of the Working Group on Inspection Practices (WGIP) is to share experience and knowledge, both on technical and human aspects, from inspection practices and programmes for operating civilian nuclear facilities and activities.

In the field of nuclear safety, considering as appropriate and when relevant any interface with security, the WGIP aims to compare inspection practices and programmes as well as the organisation of regulatory bodies between its members in order to identify and promote commendable practices.

The WGIP will analyse and provide expert insights from inspection practices. It will discuss current and future issues. It will identify practical methods to help regulatory bodies advance the effectiveness and efficiency of their inspection practices and programmes, for all types of inspections, including vendors and construction inspections, with a purpose to improve the level of safety of operating civilian nuclear facilities and activities.

Objectives

To further this mandate, the WGIP will identify and share:

- information and experience related to inspections practices (e.g. planning, conducting, enforcement) and programmes, as well as to the organisation of regulatory bodies;
- methods to evaluate and improve the effectiveness and efficiency of inspections;
- methods to assess and/or rate the safety significance of inspection findings and results;
- methods to help regulatory bodies reinforce a risk-informed approach and the implementation of a graded approach in their inspection programmes.

Working methods

In terms of working methods, the WGIP will:

- Constitute a forum of regulatory body representatives to share information and experience on inspection practices and programmes as well as the organisation of regulatory bodies in order to highlight and document commendable practices.
- Observe amongst its members the planning and conduct of inspections at civilian nuclear facilities, including, if relevant, relevant enforcement.
- Organise, on a regular basis, meetings, workshops and conferences.
- Report to and assist the Committee on Nuclear Regulatory Activities (CNRA), typically by providing reports and presentations on commendable practices, all the while considering what inspection practices are appropriate to address future regulatory challenges identified by the CNRA, paying special attention to individual and collective attitudes and behaviour, management, organisation and procedures.
- Closely co-ordinate with and provide input to other relevant NEA bodies, in particular the Working Group on Operating Experience (WGOE).
- Closely interact and coordinate activities with the Vendor Inspection Cooperation Working Group (VICWG) of the Multinational Design Evaluation Programme (MDEP) to avoid potential duplication, in particular when observing inspections of vendors and construction.

- Co-ordinate its work with other international organisations (e.g. IAEA and the European Commission).

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Group on Operating Experience (WGOE)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observers:	International Atomic Energy Agency (IAEA)
(International Organisations)	<i>By agreement</i>
Date of creation:	31 July 2005
End of mandate:	31 December 2022

Mandate (Document reference)

- Recommendations to CSNI for Future Activities [SEN/SIN(82)50]
- Recommendation to CSNI from Report of the Task Group Reviewing the Activities of the Principal Working Group 1 (PWG1) [NEA/SEN/SIN/WG1(94)5]
- Summary record of the 28th Meeting of the Committee on the Safety of Nuclear Installations (CSNI) [[NEA/SEN/SIN\(2001\)1](#)]
- Summary records from the 2005 Summer Meeting of the Committee on Nuclear Regulatory Activities (CNRA) [[NEA/SEN/NRA\(2005\)3](#)] and the 37th Meeting of the Committee on the Safety of Nuclear Installations (CSNI) [[NEA/SEN/SIN\(2005\)3](#)]
- CNRA Operating Guidelines, June 2006 [[NEA/CNRA/R\(2006\)3](#)]
- Summary record of the 17th Annual Meeting of the Committee on Nuclear Regulatory Activities (CNRA) [[NEA/SEN/NRA\(2006\)1](#)]
- Summary record of the 23rd CNRA Meeting [[NEA/SEN/NRA\(2010\)2](#)]
- CNRA Operating Plan and Guidelines (2011-2016) [[NEA/CNRA/R\(2011\)2](#)]
- Summary record of the 38th Meeting of the CNRA, held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Introduction

Operating experience is a valuable source of information for improving the safety and reliability of nuclear power plants. The timely application of operating experience lessons learnt from all phases of the nuclear power life-cycle serves to ensure a safe and reliable use of nuclear power.

Mandate

The mandate of the Working Group on Operating Experience (WGOE) is to share experience and knowledge from operating experience. The WGOE performs analysis and provides expert insights from operating experience to reach timely conclusions on trends, lessons learnt and effective responses in the short term to medium term, and to promote proposals for re-assessment of safety, additional research, new or revised

regulatory inspection practices, improvements in managing operations and other actions to maintain and improve safety in the longer term.

Objectives

In order to implement this mandate the working group will:

- Meet periodically to share among its members incident and event information covering trends, significant events, responses and measures taken, and lessons learnt including consideration of, as appropriate, technical, regulatory, and human aspects as well as the interface between safety and security.
- Meet periodically to review the information from International Reporting System (IRS) and other databases.
- Promote the development and sharing of improved techniques and methods for the collection, assimilation, review and analysis of incidents.
- Provide expert insight and analysis capabilities to operating experience, and effectiveness of preventive or corrective actions taken.

Working methods

In terms of working methods, the Working Group will:

- Constitute a forum of international experts from regulatory bodies and technical support organisations.
- Organise, on a regular basis, meetings, workshops and conferences.
- Report to the Committee on Nuclear Regulatory Activities (CNRA) and assist the Committee with its work. The WGOE programme of work will be approved by the CNRA.
- Support and assist the Committee on Safety of Nuclear Installations (CSNI) with its work.
- Closely co-ordinate with and provide input to other NEA bodies, in particular the Working Group on Inspection Practices (WGIP).
- Co-ordinate its work with other international organisations (e.g. IAEA, the European Commission, etc.) and international non-governmental organisations (e.g. WANO, etc.).

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Group on the Regulation of New Reactors (WGRNR)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observers: (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	3 December 2007
End of mandate:	31 December 2022

Mandate (Document reference)

- Summary record of the 19th Annual CNRA Meeting [[NEA/SEN/NRA\(2007\)2](#)]
- Summary record of the 23rd CNRA Meeting [[NEA/SEN/NRA\(2010\)2](#)]
- CNRA Operating Plan and Guidelines (2011-2016) [[NEA/CNRA/R\(2011\)2](#)]
- Summary record of the 38th Meeting of the CNRA, held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Scope

The Working Group on the Regulation of New Reactors (WGRNR) shall be responsible for the programme of work of the Committee on Nuclear Regulatory Activities (CNRA) with regard to regulatory activities in the primary programme areas of siting, licensing and oversight for all new commercial nuclear power reactors. The Working Group shall constitute an international forum for exchanging information and experience and, with the agreement of CNRA, will plan its work to ensure improvements in nuclear safety including, as appropriate, consideration of the interface between safety and security through more effective and efficient regulation.

Objectives

1. The group shall constitute a forum of experts for the licensing of new commercial nuclear power reactors and shall facilitate a co-operative approach to identify key new regulatory issues and promote a common resolution of such issues.
2. The group should co-ordinate its work with the work performed by the Multinational Design Evaluation Programme (MDEP) so that: it utilises its outputs and does not duplicate its efforts; extends the results of MDEP to other CNRA members.
3. The group should ensure that construction inspection issues and construction experience is shared through existing CNRA working groups or new working groups as appropriate.
4. The group should plan for the transition of new reactors into the operational phase.
5. The group should identify support needed from CSNI.

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Group on the Safety of Advanced Reactors (WGSAR)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observers: (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	4 June 2018
Start of the current mandate:	4 June 2018
End of mandate:	31 December 2022

Mandate (Document reference):

- Summary record of the 38th meeting of the Committee on Nuclear Regulatory Activities held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)]
- Summary record of the 39th meeting of the Committee on Nuclear Regulatory Activities held on 4-5 June 2018 [[NEA/SEN/NRA\(2018\)3](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Introduction

The Working Group on the Safety of Advanced Reactors (WGSAR) activities will support the NEA to achieve its goals established in the Strategic Plan of the Nuclear Energy Agency 2017–2022 [] to “address safety issues associated with new technologies and reactor designs” and to “help maintain an adequate level of capability and competence in member countries necessary to ensure the safety of [...] future nuclear facilities and activities.”

The WGSAR will be responsible for the programme of work in the Committee on Nuclear Regulatory Activities (CNRA) regarding regulatory activities in the primary area of advanced reactors⁷ and associated installations.

Mandate

In this context, the mandate of the WGSAR is to exchange information and experience from licensing and oversight of past and current nuclear facilities. The WGSAR will plan its work to ensure improvements in nuclear safety through appropriate regulation for advanced reactors and associated installations.

The WGSAR will provide regulatory perspectives through the issuance of technical reports containing discussions of areas in which additional or revised regulatory framework and licensing approaches, including safety research, may be needed to facilitate effective regulation of advanced reactors and to develop common understanding and approaches.

⁷ The term “advanced reactors” in the context of this working group primarily refers to non-light-water innovative reactor designs such as those proposed by the Generation IV International Forum (GIF), including small modular non-light-water reactors.

As part of its activities, the WGSAR will take into consideration the GIF safety design criteria and the development of the GIF safety design guidelines. It will provide its feedback to GIF to establish effective and independent interactions with industry at early stages of advanced reactors development.

Objectives

To further this mandate, the WGSAR will identify and share:

- information and experience related to regulatory framework and licensing approaches used or under consideration by those countries that are licensing, or may license advanced reactors;
- gaps in the knowledge required for the assessment of the safety case for advanced reactors;
- review of specific areas for resolving important regulatory needs, such as, for example, fuel testing and development, codes development and validation.

Working methods

In terms of working methods, the WGSAR will:

- constitute a forum of regulatory body representatives to share information and experience on regulation of advanced reactors to facilitate a cooperative approach to identify key regulatory issues, promote a common resolution and document commendable practices;
- report to the CNRA and assist this Committee with its work;
- report regularly to the Committee on the Safety of Nuclear Installations (CSNI) on knowledge gaps identified for advanced reactors and a common approach for resolving the gaps;
- interact with the organisations performing research and design of advanced reactors, such as GIF, as appropriate;
- organise, on a regular basis, meetings, workshops and conferences;
- closely co-ordinate with, provide input to and consider inputs from other relevant NEA bodies, such as the Working Group on the Regulation of New Reactors (WGRNR), the Working Group on Accident Management and Analysis (WGAMA), the Working Group on Fuel Safety (WGFS), and the Nuclear Innovation 2050 project (NI2050);
- co-ordinate with other international organisations (e.g. IAEA and EC) to facilitate exchange of information to ensure consistency of approach and to avoid duplication of work, in particular with the IAEA SMR Regulators' Forum.

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Group on Digital Instrumentation and Control (WGDIC)

Members:	All NEA member countries
Full Participant:	European Commission <i>Under the NEA Statute</i>
Participant(s):	
Observer(s) (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	1 August 2017
Start of the current mandate:	1 August 2017
End of mandate:	31 December 2022

Mandate (Document reference)

- Summary record of the 37th Meeting of the CNRA, held on 29-30 May 2017 [[NEA/SEN/NRA\(2017\)3](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Background

The scale and complexity of digital instrumentation and control (DI&C) systems present particular challenges, when used for protection and control systems in operating and new nuclear reactors. The continual advancement of DI&C technology exacerbates these challenges for power plant designers, operators and regulators. Regulations and guidance can become obsolete or inadequate as technology changes push the boundaries of what was originally considered; thus changing the underlying assumptions that were the foundation when they were first enacted.

The development and application of timely and practical guidance is therefore essential to ensure the safety of nuclear power plants.

Mandate

In this context, the mandate of the Working Group on Digital Instrumentation and Control (WGDIC) is to promote harmonisation and improvements in nuclear safety through the development of regulatory guidance to address DI&C topics and technical issues of concern to its member countries, for both operating and new reactors. This guidance is not intended to replace the guidance already available from international standards organisations; instead, the collective scientific and technical knowledge and experience of the WGDIC members is brought together to develop Consensus Positions (CPs) representing the common understanding and harmonisation of regulatory practices.

The CPs provides a consistent set of regulatory expectations for industry and may be used by members in the development of guidance in their own specific domain.

The WGDIC constitutes an international forum for nuclear regulatory organisations to co-operate in the development of CPs and to exchange information and experience.

To this end, the WGDIC will:

- develop and maintain CPs concerning current and emerging technical challenges in the DI&C field for both operating and new reactors;
- promote harmonisation of DI&C regulatory practices and standards of significance;
- increase collaboration, co-operation, and knowledge transfer among members;
- explore the synergies between safety and security of DI&C systems;
- identify research needs, in co-ordination with Committee on Safety of Nuclear Installations (CSNI), where the WGDIC concludes that the current level of technical knowledge is not sufficient to support establishment of technical guidance;
- collaborate with Standards Development Organisations (SDOs) and other international organisations, including the Regulator Task Force on Safety Critical Software (TF SCS), to provide regulatory insights and lessons learnt from the WGDIC activities regarding the harmonisation and convergence of standards and guidance (e.g. comparison of standards during the development of technical guidance);
- develop and maintain interfaces with international industry organisations and stakeholders (e.g. Co-operation in Reactor Design Evaluation and Licensing DI&C Task Force – CORDEL DICTF).

Working methods

In terms of working methods, the WGDIC will:

- develop and periodically maintain issued CPs, which will eventually be documented in a Green Booklet
- maintain mechanisms for sharing information within the working group, such as quick inquiries, self-surveys, and a document repository, e.g. a Committee on Nuclear Regulatory Activities (CNRA) library similar to the Multinational Design Evaluation Programme (MDEP) Library;
- co-ordinate its work with SDOs, such as the Institute of Electrical and Electronic Engineers (IEEE) and the International Electrotechnical Commission (IEC), and other international organisations, such as the International Atomic Energy Agency (IAEA), the European Commission, the World Association of Nuclear Operators (WANO), the Cooperation in Reactor Design Evaluation and Licensing Working Group (CORDEL) of the World Nuclear Association (WNA) and the TF SCS;
- strive to achieve the following objectives when coordinating its work with the TF SCS: (1) Maintain good awareness of issues under review, consult, and co-ordinate in support of future work products; (2) Ensure that the corresponding technical products enhance the practical guidance available to users; and (3) Avoid duplication of effort and divergence or inconsistent technical positions;
- organise, on a regular basis, meetings, workshops and conferences;
- report to the CNRA and assist that Committee with its work;
- support and assist the CSNI with its work;
- co-ordinate its work with other NEA standing technical committees and working groups as well as with MDEP, as required.

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear

safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Group on Codes and Standards (WGCS)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observer(s): (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	4 June 2018
Start of the current mandate:	4 June 2018
End of mandate:	31 December 2022

Document reference:

- Summary Record of the 37th meeting of the Committee on Nuclear Regulatory Activities held on 29-30 May 2017 [[NEA/SEN/NRA\(2017\)3](#)]
- Summary Record of the 38th meeting of the Committee on Nuclear Regulatory Activities held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)]
- Summary record of the 39th meeting of the Committee on Nuclear Regulatory Activities held on 45 June 2018 [[NEA/SEN/NRA\(2018\)3](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Background

The design, construction and operation of nuclear power plants (NPPs) is a multinational globalised industrial endeavor. It is unavoidable for any given country to use codes, materials, components or services that are produced by or provided from other countries. Consequently, the NPPs' safety and reliability must be assessed by the regulator of the concerned countries while relying on foreign codes and/or vendors. The necessary reliance on foreign codes or products creates a very time-consuming and costly assessment process.

Code convergence and reconciliation is a very valuable but challenging long-term work. Its success is strongly dependent on global co-operation and voluntary technical support, in particular from Standards Development Organisations (SDOs) and the World Nuclear Association (WNA) Cooperation in Reactor Design Evaluation and Licensing (CORDEL) group.

Mandate

In this context, the mandate of the Working Group on Codes and Standards (WGCS) is to facilitate and promote international co-operation, convergence and reconciliation⁸ of codes, standards and regulatory requirements for pressure-boundary components in nuclear power plants in order to:

⁸ Where *convergence* is to establish the same or equivalent codes requirements in order to reduce the areas in codes identified as "different", *reconciliation* is to accept or conditionally accept differences in codes requirements by justifying their sufficiency in ensuring safety and reliability.

- Improve the effectiveness and efficiency of:
 - Design review and construction oversight;
 - Operating NPP oversight, including in-service inspection, repair, replacement and modification;
 - Enhance NPPs' quality and safety;
- Support the ability of regulators to make decisions on safety.

To this end, the WGCS will prioritise tasks, according to the interest of the members, in order to:

- Maintain and improve a communication process for sharing code updates and for discussing the use of nuclear codes and standards as they relate to regulatory frameworks;
- Play a role as an interface between the regulators, SDOs and industry in code comparison, code convergence, and limiting further code divergence;
- Consider the basis of code criteria and ensure code revision does not improperly impact safety and reliability;
- Develop or improve general guidance for converging code requirements and explore strategies for code reconciliations;
- Benchmark regulatory practices in using codes and standards;
- Promote interoperability, reconciliation and/or harmonisation of regulatory practices as it pertains to codes and standards;
- Promote incorporation of harmonised best practices among the codes; □ Develop Common Positions and Technical Reports.

Methods of Working

In terms of working methods, the WGCS will, according to its priorities:

- Exchange construction and operation experiences in nuclear regulation and share supplementary regulatory requirements to codes and standards;
- Support code comparison activities to identify areas of technical commonality and areas of difference in codes and standards;
- Assess the impact of code differences on safety and reliability; assess the applicability and sufficiency of code requirements; and develop strategies for accepting or conditionally accepting differences or requirements in codes;
- Encourage SDOs and industry to jointly develop universal new code requirements on significant technical issues with international interest that are not currently addressed in codes;
- Converge code requirements using a stepwise approach; in each step, the activities include topic selection, code comparison, development of harmonised code requirements, and incorporating them in codes;
- Encourage SDOs to communicate with each other to minimise code divergence during code updates; encourage the countries that plan to develop their own codes to study the existing codes carefully and minimise the potential differences between new and existing codes;
- Use the knowledge obtained in code convergence and reconciliation to improve and minimise differences among regulatory practices for the use of foreign codes and standards;

- Report to the Committee on Nuclear Regulatory Activities (CNRA) and assist that Committee with its work;
- Identify research needs, in co-ordination with Committee on Safety of Nuclear Installations (CSNI), where the WGCS concludes that the current level of technical knowledge is not sufficient to support establishment of technical guidance;
- Co-ordinate the WGCS work with other NEA subsidiary bodies, the Multilateral Design Evaluation Programme (MDEP) and international organisations, such as the IAEA, the European Commission or the World Association of Nuclear Operators (WANO).

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Group on the Public Communication of Nuclear Regulatory Organisations (WGPC)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observers: (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	30 June 2001
End of mandate:	31 December 2022

Mandate (Document reference):

- Summary record of the 12th Meeting of the CNRA [[NEA/SEN/NRA\(2001\)1](#)]
- Summary record of the 1st Meeting of the WGPC [[NEA/SEN/NRA/WGPC\(2001\)2](#)]
- Summary record of the 2005 CNRA Summer meeting [[NEA/SEN/NRA\(2005\)3](#)]
- CNRA Operating Guidelines, June 2006 [[NEA/CNRA/R\(2006\)3](#)]
- Summary record of the 2006 CNRA Summer Meeting [[NEA/SEN/NRA\(2006\)3](#)]
- Summary record of the 23rd Meeting of the CNRA [[NEA/SEN/NRA\(2010\)2](#)]
- CNRA Operating Plan and Guidelines (2011-2016) [[NEA/CNRA/R\(2011\)2](#)]
- Summary record of the 38th Meeting of the CNRA, held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)]
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Objectives

The objective of the Working Group on the Public Communication of Nuclear Regulatory Organisations (WGPC) is to provide support to improve communication of Nuclear Regulatory Organisations (NRO) through exchange of information and experience. The WGPC will identify good practices, focus on enabling practical implementation in each organisation/country as appropriate and maintain a network among its members facilitating consistent and proportionate NRO public communication between NEA member countries related to any event or regulatory matter with potential public interest.

In order to achieve this objective:

- The Working Group will share information, news, documents, data, views, ideas, and experiences in the field of public communication and stakeholder involvement. It will keep abreast of activities of a similar or related nature undertaken by other bodies of the NEA.
- The Working Group will review developments, progress, techniques, tools, procedures and achievements related to how nuclear regulators communicate with the public and other stakeholders. It will highlight lessons learnt and good practices.

- The Working Group will support the Committee on Nuclear Regulatory Activities (CNRA), through technical notes, workshops, by addressing specific issues and practices and by providing expert consultation on various components of communication.
- The Working Group will co-operate with other NEA bodies and international organisations and stakeholders, in the areas of regulatory public communication and stakeholder involvement and providing assistance through consultation.

Working methods

In terms of working methods, the WGPC will:

- Constitute a forum of NRO communicators to share information and plan, co-ordinate and manage activities through the organisation of annual meetings.
- Produce collaboratively consensus documents (e.g., technical notes, guidelines or aide-memoire) useful to improve NRO communication.
- Use the “flashnews” system to exchange in real time relevant information about safety-relevant events of media interest.
- Organise workshops in relation with public information and communication.

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Working Party on boiling water reactors (WPBWR)

Members:	All NEA member countries
Full Participants:	European Commission <i>Under the NEA Statute</i>
Observers: (International Organisations)	International Atomic Energy Agency (IAEA) <i>By agreement</i>
Date of creation:	4 June 2018
End of mandate:	31 December 2022

Mandate (Document reference):

- Summary Record of the 38th Meeting of the Committee on Nuclear Regulatory Activities held on 4-5 December 2017 [[NEA/SEN/NRA\(2017\)5](#)];
- Summary Record of the 39th Meeting of the Committee on Nuclear Regulatory Activities held on 4-5 June 2018 [[NEA/SEN/NRA\(2018\)3](#)].
- 2017-2022 CNRA Operating Plan and Guidelines [[NEA/CNRA/R\(2017\)5](#)]
- Summary record of the 44th Meeting on the CNRA (*forthcoming*)

Mandate:

Background

The Committee on Nuclear Regulatory Activities (CNRA) has considered a request by a number of countries involved in the Advanced Boiling Water Reactor Working Group of the Multinational Design Evaluation Programme (MDEP ABWRWG) for the creation of a regulatory forum for boiling water reactors (BWRs) and advanced boiling water reactors (ABWRs).

In December 2017, the CNRA approved the establishment of an ad hoc group to serve as a regulatory forum for boiling water reactors.

Scope

The WPBWR covers all boiling water reactors, including ABWRs and Economic Simplified Boiling Water Reactors (ESBWRs).

The WPBWR is responsible for establishing:

- an international forum to exchange information and experience specifically on regulation issues regarding BWRs, including those in design, construction, commissioning, operation and decommissioning;
- a way to identify international safety challenges within BWRs to share national perspectives;
- a range of appropriate opportunities for international collaboration on regulatory activities related to BWRs that will lead to improvements in the nuclear safety area.

In order to accomplish these objectives, the WPBWR shall:

- constitute a forum for NEA member countries' representatives and experts involved in the national regulation of BWRs;

- facilitate a co-operative approach to identify key regulatory issues and promote common positions;
- use the key regulatory issues and positions to formulate a potential collaborative work programme;
- present the results, programme, conclusions and recommendations to the CNRA for approval and/or endorsement.

Working methods

The WPBWR will:

- review the work programmes considered by the MDEP ABWRWG to determine if any work would fall under the WPBWR's scope;
- interact with the organisations involved in the safety assessment of BWRs, as appropriate;
- co-ordinate its work with other NEA bodies, MDEP and international organisations, such as the IAEA or the European Commission.

Proposed Outcomes and Outputs

The WPBWR will provide regulatory perspective of the challenges raised by BWRs, including responses to relevant nuclear site challenges. This will be done via discussions and the generation of reports and guidance. Particular attention will be paid to additional, or revised, regulatory approaches that may be needed to facilitate effective regulation of BWRs compared to other light-water reactors.

The outcomes will include:

- a report on the regulatory framework and licensing approaches used or under consideration by those countries that have licensed, or may license, BWRs;
- identification of areas in which new or different developments may be relevant for licensing, inspecting and evaluating the implementation of the safety cases for BWRs;
- defining possible BWR challenges that might be resolved through collaborative work.

Interactions

The NEA has established Memoranda of Understanding (MOUs) with a number of organizations – e.g. COG, CRIEPI, EPRI and WANO – to promote international collaboration, particularly in the area of nuclear safety. Accordingly, representatives from these organizations can be invited, as appropriate, in the activities of CNRA working groups, consistent with the MOUs.

Deliverables

The CNRA and its working groups generally produce guidance documents for nuclear safety regulators and other stakeholders interested in commercial nuclear power. Examples include, but are not limited to, proceedings of seminars and workshops, collections of commendable practices implemented by regulatory bodies, case studies, and summaries of operating experience.

Appendix B: Mapping of challenges and regulatory goals with working groups

Challenges and Regulatory Goals	WG(s) Involved
1. Adequate nuclear skills and infrastructure	
1.1. To enhance knowledge transfer and management.	WGSC, WGIP, WGOE, WGRNR, WGDIC, WGPC, WGSAR, WGCS
1.2. To review and enhance the development and use of qualifications and training.	WGSC, WGIP, WGRNR, WGDIC, WGCS
1.3. To maintain an oversight of the licensee's use of contractors.	WGIP, WGRNR, WGCS
1.4. To assess the adequacy of the regulatory body resources for key activities or processes.	WGIP, WGRNR
1.5. To confirm the licensee's ability to maintain technical core knowledge, especially to understand the technical details of its licensing basis and assess the quality of its contractors and vendors.	WGIP, WGRNR, WGCS
1.6. To assist in the development of exchange programmes among regulatory bodies to facilitate inspectors, technical experts and scientist to work in productive environments of other regulators.	WGIP, WGDIC, WGSC
2. Effectiveness and efficiency of activities related to safety	
2.1. To develop better understanding of effective relationships between regulator and operator.	WGSC, WGIP, WGOE, WGPC
2.2. To harmonise key regulatory processes and practices for licensing of new facilities.	WGRNR, WGDIC, WGPC, WGSAR, WGCS
2.3. To harmonise quality assurance programmes, in particular for application to manufacturers and vendors.	WGRNR, WGIP, WGDIC, WGCS
2.4. To co-ordinate inspections, to share inspection results for components, to apply lessons learnt from inspections, operating experience, etc. and to encourage incorporating operating experience into the inspection process.	WGIP, WGOE, WGDIC, WGPC, WGCS
2.5. To co-ordinate in particular with CSNI to match regulatory challenges with the research that is needed by the regulators for effective tool to incorporate into the regulatory process.	WGDIC, WGSC, WGOE, WGSAR, WGCS
2.6. To identify and share good practices in self-assessment of regulatory body (effectiveness of programmes and organisation).	WGSC, WGIP, WGOE
2.7. To better assess and support effective safety culture of regulatory bodies.	WGSC, WGPC
2.8. To share and contribute to the understanding and optimisation of the balance between regulatory tools (licensing, inspection, assessment).	WGSC, WGIP
3. Safe operation of current nuclear installations	

3.1. To further develop understanding of the issues of long-term operation and licence renewal.	WGIP, WGRNR, WGDIC, WGPC
3.2. To better understand, assess and support effective safety culture, human and organisational aspects of licensee and its contractors and subcontractors.	WGSC, WGPC
3.3. To assess the licensee's oversight of the quality management and management system of its contractors.	WGSC, WGIP, WGRNR, WGCS
3.4. To assess the licensee's improvements in aspects of management systems such as maintenance, knowledge management and data collection.	WGSC, WGIP, WGOE
3.5. To understand and assess the safety issues of plant ageing, modifications and changes/upgrades in design and licensing basis.	WGIP, WGOE, WGDIC, WGCS
3.6. To review and share practices of incorporating and addressing new technology in regulatory practices.	WGIP, WGOE, WGDIC, WGRNR, WGCS
3.7. To review and share experiences with regard to licensee's procurement processes: technical expertise; non-conforming parts; counterfeit, suspect and fraudulent parts.	WGIP, WGOE, WGDIC, WGCS
3.8. To conduct performance comparisons and to share good practices in the field of organisational and human factors inspections (in co-ordination with the WGHOF).	WGSC, WGIP
3.9. To review and share regulatory inspection practices, including results communication to stakeholders.	WGIP, WGSC
4. Safety in new nuclear installations and in advanced reactor designs	
4.1. To promote harmonisation in regulatory strategies and licensing process, including harmonisation of safety classifications for safety related components.	WGRNR, WGDIC, WGSAR, WGCS
4.2. To develop relevant approaches to safety cases for new technology.	WGRNR, WGDIC, WGSAR
4.3. To share good practices on the regulatory oversight of contractors.	WGIP, WGRNR, WGDIC, WGCS
4.4. To review and share information on licensees' and operators' procurement processes for technical expertise, non-conforming parts, counterfeit, suspect and fraudulent parts.	WGIP, WGOE, WGDIC, WGCS
4.5. To develop requirements for the regulatory oversight of construction management.	WGRNR, WGIP, WGCS
4.6. To develop approaches and methods on regulator training issues, including construction inspector training.	WGSC, WGIP, WGRNR
4.7. To review and to enhance the understanding of requirements between regulator/vendor/operator.	WGRNR, WGDIC, WGSAR, WGCS
4.8. To review and compare practices on the regulation of contractors during the construction licensing process.	WGRNR
4.9. To develop and to share best practice guidelines for construction inspections, including pre-operational inspection practices.	WGIP, WGRNR, WGDIC
4.10. To further develop approaches to the oversight of communication between operator and vendor.	WGRNR
4.11. To further develop approaches for the effective regulatory oversight of design basis management control.	WGRNR, WGDIC
4.12. To review and to promote the development of design-neutral regulatory strategies.	WGRNR, WGDIC, WGSAR, WGCS

4.13. To better achieve public engagement on unique features of an innovative design.	WGRNR, WGPC
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5. Human aspects of nuclear safety	
5.1. To better understand the impact of reductions in experienced staff and changes in the nuclear workforce demographics in all areas (industry, regulators, research, etc.) and develop suitable regulatory approaches.	WGSC, WGIP
5.2. To develop a better understanding of the impact of accidents and incidents and the resultant demands on the nuclear workforce.	WGSC
5.3. To address the increasing demand for skilled/trained staff in all areas for the extended operation of the current installations, and the design, construction, and operation of new installations.	WGSC, WGRNR, WGIP
5.4. To improve the transparency and public awareness of and engagement in regulatory activities.	WGPC
5.5. To develop better understanding of effective relationships between regulator and operator.	WGSC, WGIP, WGPC
5.6. To better assess and support effective safety culture of regulatory bodies.	WGSC, WGPC
5.7. To better understand, assess and support effective safety culture, human and organisational aspects of licensee and its contractors and subcontractors and develop regulatory oversight tools.	WGSC, WGIP
5.8. To conduct performance comparisons and to share good practices on inspections of organisational and human factors (in co-ordination with the WGHOFF) and develop tools for regulatory oversight in this area.	WGSC, WGIP

Appendix C: Templates

CNRA Activity Proposal Sheet

CNRA Proposal – Working Group Name (Year) Number ¹	
Title	Subject of the work to be performed
Objective/scope	Short definition of the main objectives and scope for the work to be performed.
Relevance	Short description of the relevance of this work to the member countries and why it is essential to be carried out by a CNRA working group. Alignment to the challenges and goals as set out in the CNRA Operating Plan and Guidelines should be included.
Expected outputs	What is the added value of this work to nuclear safety and regulatory activities and what will be the final product?
Work process	Short description of how the work will be carried out, participants, consultants, co-ordination with others, etc.
Schedule/milestones	Expected intervals for develop, obtaining interim results and delivering final products, etc.
Interaction with others	Description of co-ordination: Internal: Other CNRA working groups, CSNI working groups or other NEA standing technical committees External: Other organisations, for example, IAEA, EC, WENRA, WANO
Approved by the CNRA	Date and meeting when approved by the CNRA

1. Group/Year/Number – Example WGIP(2017)1.

