

## Guidelines regarding National Reports under the Convention on Nuclear Safety

### **I. Introduction**

1. These Guidelines, established by the Contracting Parties pursuant to Article 22 of the Convention on Nuclear Safety (hereinafter called the Convention), are intended to be read in conjunction with the text of the Convention. Their purpose is to provide guidance to the Contracting Parties regarding material that may be useful to include in the National Reports required under Article 5 of the Convention and thereby to facilitate the most efficient review of implementation by the Contracting Parties of their obligations under the Convention.

2. Taking into consideration Article 10 of the Convention, the regulatory body should involve other organizations that are engaged in activities directly related to nuclear installations so that they can participate in the review process according to their respective responsibility. Such organizations, in particular the licence holders or the operating organization, should be invited to contribute to the production of the National Reports and to attend the Review Meetings.

### **II. General**

#### **A. Basic Considerations**

3. The basic concept of the Convention is for the Contracting Parties to apply widely recognized principles and tools to achieve and maintain a high level of nuclear safety worldwide and to submit National Reports on the application of those principles and tools to peer reviews with international participation. In accordance with Article 1 of the Convention, the National Reports shall illustrate how the objectives of the Convention, especially a high level of nuclear safety, have been achieved. All parties with legal responsibilities for the safety of nuclear installations or their regulation within the Contracting Party should be invited to contribute to compiling the National Report, as foreseen in the Convention.

4. The intent of the review process of the Convention taking place at regular intervals is to encourage the continuous improvement of safety as a whole. Preparing for the National Report according to Article 5 of the Convention implies a process of self-assessment of the implementation of the obligations under the Convention that focuses on the Challenges to be addressed and the follow-up actions taken since the last Review Meeting. This requires reporting on changes since the last National Report while still reporting on the entirety of the obligations of the Convention.

5. Taking into account that:

- each Contracting Party has the right to submit a National Report with the form, length and structure it believes necessary to describe how it has implemented its obligations under the Convention;
- the need for effective and efficient review requires National Reports to be in as similar a format as possible, to aid comparison; and
- a flexible approach can be adopted to the writing of National Reports.

The National Report should:

- address in due detail all aspects of the obligations (in Articles 6 to 19) of the Convention to enable a complete and comprehensive review by other Contracting Parties<sup>1</sup>;
- be both sufficiently comprehensive to permit genuine evaluation of the extent of fulfilment of each obligation and sufficiently concise to make both writing and reviewing the National Report practicable;
- provide comprehensive information based on the actual situation;
- follow an article-by-article approach, with due regard to the concept of ‘safety as a whole’;
- clearly distinguish between requirements stipulated in the national regulations and the status of the implementation of these requirements;
- clearly distinguish between actions taken by the regulatory body and those taken by licence holders;
- support the review process by enabling other Contracting Parties to identify any changes and achievements without losing sight of the overall context;
- reflect Suggestions and Challenges (see Annex IV of the Guidelines regarding the Review Process under the Convention on Nuclear Safety) identified at the previous Review Meeting for the Contracting Party as well as topics and important issues stated in the Summary Report of that Review Meeting;
- give due regard to issues and trends in nuclear safety, such as those identified by the Contracting Parties at the previous Review Meeting, at the Organisational Meeting, or in the IAEA Generic Safety Observations Report described in Section III of the Guidelines regarding the Review Process under the Convention on Nuclear Safety;

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<sup>1</sup> No separate report is required under Articles 4 and 5 of the Convention.

- discuss the safety of nuclear installations by presenting aggregated data, generic analyses, overall safety trends and, where appropriate, particular safety-related issues at individual nuclear installations;
- put detailed information and supporting data into annexes as appropriate;
- identify Challenges faced by a Contracting Party to improve safety at its nuclear installations; and
- reflect efforts made to enhance international co-operation and assistance to improve nuclear safety worldwide.

## **B. General Suggestions on the Structure and Format of the National Report**

6. All information contained in National Reports should be explicitly connected to a specific Convention article and should be structured in accordance with the ‘sub-articles’ as given by the Convention. This will also help to assign questions and comments submitted on the secure web site within the review process concerning the proper obligation of the Convention. To assist reviewers, the full text of each Convention article should be included at the start of each chapter of the National Report.

7. Duplication within the National Report should be avoided, for example, by cross-referencing.

8. The National Report should make reference, as appropriate, to other available official national reports, and reports of national and international review missions. If feasible, any references should be made to publications available on the internet.

9. While the practice of supplementing National Reports with additional data is encouraged, the main body of the National Report itself should nevertheless contain all the key elements of information necessary for reviewers to assess in which way the Contracting Party has attained or is trying to attain the objectives of the Convention.

10. The amount of data and/or information supplied in annexes should not exceed a reasonable amount beyond which the conclusions of the National Report could be obscured.

11. The total number of pages of a National Report should not exceed a reasonable amount. For a Contracting Party with nuclear installations in operation, experience suggests that this amount may be approximately 150 pages, excluding any necessary annexes. For a Contracting Party without nuclear installations, experience shows that this amount is considerably less.

12. The National Report should have a table of contents. To assist the reader, the report should use the Convention article numbers as the numbering scheme for all sections. Use of page headers would also be beneficial. If necessary, a list of acronyms, definitions or abbreviations should be included in the National Report.

13. In order to facilitate the handling of National Reports, they should be prepared in the format A4 (297 mm × 210 mm), which is already widely used.

14. The National Reports should be submitted

- electronically, to the secure web site, as a single PDF format file. The file size, including all graphics, charts, slides, etc. incorporated into the report, should not exceed 5 Megabytes; and
- as one hard copy, to the Secretariat, as a single bound document comprising the main body as well as all annexes.

### **C. General Suggestions on the Content of the National Report**

15. National Reports should focus on describing the specific measures a Contracting Party is implementing to address the articles of the Convention.

16. To facilitate the review process, a stand-alone report rather than a report restricted to changes and updates only should be used to avoid the need to reference and review earlier reports.

17. The first National Report of a Contracting Party may need to contain more comprehensive information than subsequent reports, also on the Contracting Party's nuclear programme.

18. The National Report of a Contracting Party at following meetings, while still being a stand-alone report, should highlight updated information on matters covered in the previous reports, noting significant changes in national nuclear safety laws, regulations and practices. It should also address safety issues that have been identified in the Contracting Party's previous report or that have arisen since the previous report. In particular, it should address progress in safety improvements at existing nuclear installations. It should address any recommendations adopted at the plenary sessions of the previous Review Meeting of the Contracting Parties and to specific topics identified at the Organizational Meeting as well as any Suggestions or Challenges summarized in the Country Review Report for that Contracting Party at the previous Review Meeting. Finally, Contracting Parties are strongly encouraged to address international peer review mission results in their National Reports, where applicable and appropriate, including recommendations and follow-up actions.

19. The IAEA Safety Standards, in particular Safety Fundamentals and Requirements, provide a basis for what constitutes a high level of safety and are objective, transparent and technologically neutral, which gives valuable guidance on how to meet the obligations of the Convention. Reference to the IAEA Safety Fundamentals and Requirements, could be made when reporting on the obligations of the Convention.

20. Each National Report should contain an Introduction and a Summary as described in Chapter III.

21. National Reports should incorporate any necessary references to national laws and to legislative, regulatory and administrative arrangements.

### **D. Article by Article Review**

22. For each article and structured in accordance with the given sub-articles of the Convention, suggestions are made in Chapter III of these Guidelines regarding the issues that might be addressed.

23. Contracting Parties should provide the relevant information for each article, as appropriate, using the following structure in order to clearly distinguish between the actions taken by the regulatory body and by the licence holder(s):

- (a) a summary statement regarding implementation of the obligation(s) under that article;
- (b) a description of the main national laws, regulations and administrative arrangements governing the article or sub-article;
- (c) a description of how the elements in (b) above are implemented, and the results that are achieved, by:
  - i. the regulatory body,
  - ii. the licence holders, and/or

- iii. other organizations with responsibilities for nuclear safety within the Contracting Party as applicable.

The measures taken should address each type or generation of nuclear installation and, if necessary, specific installations;

- (d) regulatory review and control activities; and
- (e) a brief summary of changes related to that article since the last report.

If applicable, further information to illustrate the implementation of the obligation(s) under that article may include:

- (f) a description of plans and measures for corrective action at the national level, indicating any necessary international co-operation;
- (g) a description of plans and measures relating to planned nuclear installations; and
- (h) references to other parts of the National Report, as appropriate.

## **E. Contracting Parties without Nuclear Installations**

24. The National Report to be submitted by a Contracting Party without nuclear installations should follow the above format, addressing articles of the Convention, as deemed appropriate to illustrate its achievements.

25. Reporting on Articles 7, 8 and 16 of the Convention is in particular encouraged for Contracting Parties with no nuclear installations planned or in operation.

26. Demonstration of the Contracting Party's commitment to the Convention's objective of a high level of nuclear safety by reporting on other relevant activities is welcome. Likewise, presenting information on activities covered by Articles 9, 10 and 15 of the Convention is encouraged.

27. As regards the National Report to be submitted by a Contracting Party without nuclear installations but planning to embark on a nuclear power programme, reporting on Articles 10 – 19 of the Convention is encouraged as regards the Contracting Party's regulation of its planned future nuclear power programme. A Contracting Party planning construction of its first nuclear installation should report on all necessary steps taken, or planned to be taken, prior to the commencement of construction of the installation with regard to long-term planning and establishment of the requisite infrastructure. Such a Contracting Party is encouraged to report on related international peer review missions including progress made in implementing the findings and plans for follow-up.

## **III. Detailed Suggestions on the Content of the National Report**

### **A. Introduction**

28. The Introduction in the National Report should include:

- general introductory remarks outlining the national policy towards nuclear activities;
- an overview of the national nuclear programme;

- a statement on the commitment of the Contracting Party to the Convention, including a survey of the main safety issues addressed in the National Report; and
- explanations on the preparation, structure and main features of the National Report, (in particular if different from these Guidelines).

## **B. Summary**

29. The Summary in the National Report should highlight the Contracting Party's continued efforts in achieving the Convention's objectives. It should serve as a major information source by summarizing updated information on matters that have developed since the previous National Report, focussing discussion on significant changes in national laws, regulations, administrative arrangements, and practices related to nuclear safety, and demonstrating follow-up from one Review Meeting to the next.

30. The Summary should:

- address important safety issues that have been identified in the Contracting Party's previous National Report or that have arisen since the previous National Report;
- address future safety related activities and programmes planned or proposed for the period until the next National Report;
- give special attention to issues and topics as identified and agreed upon by the Contracting Parties at the Organizational Meeting. These topics may vary from one Review Meeting to the next and could be related to several articles;
- address the responses of the Contracting Party to the results of the previous peer review of the Contracting Party concerned, in particular Suggestions or Challenges summarized in the Country Review Report for that Contracting Party; likewise, any announcement or voluntarily accepted action at the previous Review Meeting;
- describe significant changes to the Contracting Party's national nuclear energy and regulatory programs and measures taken to comply with the Convention's obligations;
- respond to the IAEA Generic Safety Observations Report (see Section III of the Guidelines regarding the Review Process under the Convention on Nuclear Safety) if provided and if relevant to the particular national situation;
- for those Contracting Parties hosting, having hosted or planning to host international peer review missions and follow-up missions, include a description of policies, plans and schedules for such missions;
- address the results of international peer review missions including the IAEA missions conducted in the Contracting Party during the review period, progress made by the Contracting Party in implementing any findings, and plans for follow-up;
- include the measures taken by the Contracting Party to voluntarily make public the reports on their international peer review missions;
- address operating experience, lessons learned and corrective actions taken in response to accidents and events having significance for the safety of nuclear installations;
- address lessons learned from emergency drills and exercises;
- address actions taken to improve transparency and communication with the public; and

- respond to any recommendations adopted at the plenary sessions of the previous Review Meeting of the Contracting Parties.

### **C. Reporting Article by Article**

31. The following lists provide useful examples of issues that Contracting Parties might address, where appropriate, under each article. The lists are structured in accordance with the given articles and sub-articles of the Convention. These examples are not intended to exclude other issues that might also be relevant to demonstrate compliance with the obligations of the Convention.

32. In case one of these issues might be interpreted as extending the obligations of the Convention, the text of the Convention prevails.

#### **Article 6 Existing Nuclear Installations**

Article 6 of the Convention is an initial obligation for new Contracting Parties. Appropriate reporting on all related measures implemented and decisions taken in the light of this article and in accordance with the provisions in Article 6 of the Convention is mandatory in the first National Report, including:

- a list of existing nuclear installations as defined in Article 2 of the Convention (provided in an annex, if it is a long list);
- an overview of safety assessments performed in the light of Article 6 of the Convention and their major results, and identification of existing nuclear installations at which significant safety upgrading has been found to be necessary as relevant under Articles 10-19 of the Convention, or at which such upgrading cannot be achieved;
- an overview of programmes and measures for the safety upgrading of those nuclear installations which will be upgraded; and identification of installations for which decisions on shutdown have been made;
- a statement on the position of the Contracting Party concerning the status of each nuclear installation in the list (e.g. decisions taken or planned for shutting it down, justification for continuing to operate it or to restarting it), explaining how safety and other aspects were taken into account in reaching this position.

For subsequent reporting, a practice has been developed by Contracting Parties to regard Article 6 of the Convention as a continuous obligation to regularly assess and, when necessary, to improve the safety of existing installations and at the time of reporting to justify and report on related decisions taken in accordance with the provisions in Article 6 of the Convention. Typically, subsequent National Reports include:

- an updated list of existing nuclear installations as defined in Article 2 of the Convention (provided in an annex, if it is a long list);
- an overview of significant safety related issues, including events that occurred in the nuclear installations over the last three years, and measures taken in response to these issues;
- an overview of planned programmes and measures for the continued safety upgrading, where appropriate, of each type or generation of nuclear installation (modifications already implemented could be reported under Article 18 of the Convention);
- identification of installations for which decisions on shutdown have been made;

- a statement on the position of the Contracting Party concerning the continued operation of the nuclear installations, including those that do not comply with the obligations as stated in Articles 10-19 of the Convention, explaining how safety and other aspects were taken into account in reaching this position.

## **Article 7 Legislative and Regulatory Framework**

### **Article 7 (1) Establishing and maintaining a legislative and regulatory framework**

- Overview of the primary legislative framework for nuclear safety, including interfacing national legislation;
- Ratification of international conventions and legal instruments related to nuclear safety.

### **Article 7 (2) (i) National safety requirements and regulations**

- Overview of the secondary legislation for nuclear safety (ordinances, decrees, etc).
- Overview of regulations and guides issued by the regulatory body;
- Overview of the process of establishing and revising regulatory requirements, including the involvement of interested parties.

### **Article 7 (2) (ii) System of licensing**

- Overview of the licensing system and processes including types of licensed activity and, where appropriate, the procedure for relicensing;
- Involvement of the public and interested parties within the Contracting Party;
- Legal provisions to prevent the operation of a nuclear installation without a valid licence.

### **Article 7 (2) (iii) System of regulatory inspection and assessment**

- Regulatory strategies;
- Overview of the regulatory inspection and assessment process with regard to the safety of nuclear installations;
- Basic features of inspection programmes.

### **Article 7 (2) (iv) Enforcement of applicable regulations and terms of licences**

- Power for legal actions;
- Overview of enforcement measures available to the regulatory body;
- Experience with legal actions and enforcement measures.

## **Article 8 Regulatory Body**

### **Article 8 (1) Establishment of the regulatory body**

- Legal foundations and statute of the regulatory body;
- Mandate, mission and tasks;
- Authorities and responsibilities;
- Organizational structure of the regulatory body;



- Development and maintenance of human resources over the past three years;
- Measures to develop and maintain competence;
- Developments with respect to financial resources over the past three years;
- Statement of adequacy of resources;
- (Quality) management system of the regulatory body;
- Openness and transparency of regulatory activities including actions taken to improve transparency and communication with the public;
- External technical support, if appropriate;
- Advisory committees, if appropriate.

**Article 8 (2)** Status of the regulatory body

- Place of the regulatory body in the governmental structure;
- Reporting obligations (to the parliament, government, specific ministries);
- Means by which effective separation is ensured between the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy, and means by which independence of the regulatory body in making its safety-related decisions is assured.

**Article 9** Responsibility of the Licence Holder

- Formulation in the legislation (quotation) assigning the prime responsibility for safety to the licence holder;
- Description of the main means by which the licence holder discharges the prime responsibility for safety;
- Description of the mechanism by which the regulatory body ensures that the licence holder discharges its prime responsibility for safety;
- Description of the mechanisms whereby the licence holder maintains open and transparent communication with the public;
- Description of the mechanism by which the Contracting Party ensures that the licence holder of the nuclear installation has appropriate resources (technical, human, financial) and powers for the effective on-site management of an accident and mitigation of its consequences.

**Article 10** Priority to Safety

- Overview of the Contracting Party's arrangements and regulatory requirements regarding policies and programmes to be used by the licence holder to prioritize safety in activities for design, construction and operation of nuclear installations, including:
  - safety policies,
  - safety culture programmes and development,
  - arrangements for safety management,

- arrangements for safety monitoring and self-assessment,
  - independent safety assessments,
  - discussion on measures to improve safety culture,
  - a process oriented (quality) management system.
- Measures taken by licence holders to implement arrangements for the priority of safety, such as those above and any other voluntary activities, examples of Good Practices and safety culture achievements;
  - Regulatory processes for monitoring and oversight of arrangements used by the licence holders to prioritize safety;
  - Means used by the regulatory body to prioritize safety in its own activities.

## **Article 11 Financial and Human Resources**

### **Article 11 (1) Financial resources**

- Mechanism for the provision of financial resources to the licence holder or applicant in order to ensure the safety of the nuclear installation throughout its lifetime; including
  - principles for the financing of safety improvements to the nuclear installation over its operational lifetime,
  - principles for financial provisions during the period of commercial operation for decommissioning and management of spent fuel and radioactive waste from nuclear installations;
- Statement with regard to the adequacy of financial provisions;
- Contracting Party's processes to assess the financial provisions;
- Description of the Contracting Party's arrangements for ensuring that the necessary financial resources are available in the event of a radiological emergency.

### **Article 11 (2) Human resources**

- Overview of the Contracting Party's arrangements and regulatory requirements concerning staffing, qualification, training and retraining of staff for nuclear installations;
- Methods used for the analysis of competence requirements and training needs for all safety related activities in nuclear installations;
- Arrangements for initial training and retraining of operations staff, including simulator training;
- Capabilities of plant simulators used for training with regard to fidelity to the plant and scope of simulation;
- Arrangements for training of maintenance and technical support staff;
- Improvements to training programmes as a result of new insights from safety analyses, operational experience, development of training methods and practices, etc.;

- Methods used to assess the sufficiency of staff at nuclear installations;
- Policy or principles governing the use of contracted personnel to support or supplement the licensee's own staff;
- Methods used to assess the qualification and training of contractor's personnel;
- Description of the national supply of, and demand for, experts in nuclear science and technology;
- Methods used for the analysis of competence, availability and sufficiency of additional staff required for severe accident management, including contracted personnel or personnel from other nuclear installations;
- Regulatory review and control activities.

#### **Article 12 Human Factors**

- Overview of the Contracting Party's arrangements and regulatory requirements to take human factors and organizational issues into account for the safety of nuclear installations;
- Consideration of human factors in the design of nuclear installations and subsequent modifications (see also Article 18 (3) of the Convention);
- Methods and programmes of the licence holder for analysing, preventing, detecting and correcting human errors in the operation and maintenance of nuclear installations;
- Self-assessment of managerial and organizational issues by the operator;
- Arrangements for the feedback of experience in relation to human factors and organizational issues;
- Regulatory review and control activities.

#### **Article 13 Quality Assurance**

- Overview of the Contracting Party's arrangements and regulatory requirements for quality assurance programmes, quality management systems, or management systems of the licence holders;
- Status with regard to the implementation of integrated management systems at nuclear installations;
- Main elements of a typical quality assurance, quality management or management system programme covering all aspects of safety throughout the lifetime of the nuclear installation, including delivery of safety related work by contractors;
- Audit programmes of the licence holders;
- Audits of vendors and suppliers by the licence holders;
- Regulatory review and control activities.

## **Article 14 Assessment and Verification of Safety**

### **Article 14 (1) Assessment of safety**

- Overview of the Contracting Party's arrangements and regulatory requirements to perform comprehensive and systematic safety assessments;
- Safety assessments within the licensing process and safety analysis reports for different stages in the lifetime of nuclear installations (e.g. siting, design, construction, operation);
  - Re-evaluations of hazard assumptions (e.g. according to international best practice, using deterministic and probabilistic methods of analysis);
  - Overview of periodic safety assessments of nuclear installations during operation, including references to appropriate standards and practices and illustrations on how new evidence is taken into account (e.g. in the light of operating experience, and of other significant new safety information);
  - Overview of safety assessments performed and the main results of those assessments for existing nuclear installations including the summary of significant results for individual nuclear installations and not only according to their type and generation;
- Regulatory review and control activities.

### **Article 14 (2) Verification of safety**

- Overview of the Contracting Party's arrangements and regulatory requirements for the verification of safety;
- Main elements of programmes for continued verification of safety (in-service inspection, surveillance, functional testing of systems, etc.);
- Elements of ageing management programme(s);
- Arrangements for internal review by the licence holder of safety cases to be submitted to the regulatory body;
- Regulatory review and control activities.

## **Article 15 Radiation Protection**

- Overview of the Contracting Party's arrangements and regulatory requirements concerning radiation protection at nuclear installations, including applicable laws not mentioned under Article 7;
- Regulatory expectations for the licence holder's processes to optimize radiation doses and to implement the 'as low as reasonably achievable' (ALARA) principle;
- Implementation of radiation protection programmes by the licence holders, including
  - observation of dose limits, main results for doses to exposed workers,
  - conditions for the release of radioactive material to the environment, operational control measures and main results,

- processes implemented and steps taken to ensure that radiation exposures are kept as low as reasonably achievable for all operational and maintenance activities,
- environmental monitoring and main results;
- Regulatory review and control activities.

## **Article 16 Emergency Preparedness**

### **Article 16 (1) Emergency plans and programmes**

- Overview of the Contracting Party's arrangements and regulatory requirements for on-site (including multi-unit nuclear installations and/or multi-facility sites) and off-site emergency preparedness, including applicable laws not mentioned under Article 7;
- Overview and implementation of main elements of national plan (and regional plan, if applicable) for emergency preparedness, including the chain of command and roles and responsibilities of the licence holder, the regulatory body, and other main actors, including State organizations;
- Implementation of emergency preparedness measures by the licence holders:
  - classification of emergencies;
  - main elements of the on-site and, where applicable, off-site emergency plans for nuclear installations, including, availability of adequate resources and authority to effectively manage and mitigate the consequences of an accident;
  - facilities provided by the licence holder for emergency preparedness (if appropriate, give reference to descriptions under Article 18 and Article 19 (4) of the Convention, respectively);
- Training and exercises, evaluation activities and main results of performed exercises including lessons learned;
- Regulatory review and control activities;
- International arrangements, including those with neighbouring States, as necessary.

### **Article 16 (2) Information of the public and neighbouring States**

- Overview of the Contracting Party's arrangements for informing the public in the vicinity of the nuclear installations about emergency planning and emergency situations;
- Arrangements to inform competent authorities in neighbouring States, as necessary.

### **Article 16 (3) Emergency preparedness for Contracting Parties without nuclear installations**

Contracting Parties with no nuclear installations on their territory, but that are likely to be affected by an emergency at a nuclear installation in another country, should describe:

- measures for the preparation and testing of emergency plans that cover the activities to be carried out on their territory in the event of such an emergency;
- international arrangements, including those with neighbouring States, as necessary.

## **Article 17 Siting**

### **Article 17 (1)** Evaluation of site related factors

- Overview of the Contracting Party's arrangements and regulatory requirements relating to the siting and evaluation of sites of nuclear installations, including applicable national laws not mentioned under Article 7 of the Convention:
  - overview of assessments made and criteria applied for evaluating all site related factors affecting the safety of the nuclear installation, including multi-unit failure, loss of infrastructure, and site access following an event;
  - overview of design provisions used against human made external events and natural occurring external events such as fire, explosion, aircraft crash, external flooding, severe weather conditions and earthquakes and the impact of related sequential natural external events (e.g. tsunami caused by an earthquake, mud slide caused by heavy rain);
- Regulatory review and control activities.

### **Article 17 (2)** Impact of the installation on individuals, society and environment

- Criteria for evaluating the likely safety related impact of the nuclear installation on the surrounding population and the environment;
- Implementation of these criteria in the licensing process.

### **Article 17 (3)** Re-evaluation of site related factors

- Activities for re-evaluation of the site related factors as mentioned in Article 17 (1) of the Convention to ensure the continued acceptability of the safety of the nuclear installation conducted according to appropriate standards and practices;
- Results of recent re-evaluation activities;
- Regulatory review and control activities.

### **Article 17 (4)** Consultation with other Contracting Parties likely to be affected by the installation

- International arrangements;
- Bilateral arrangements with neighbouring States, as applicable and necessary.

## **Article 18 Design and Construction**

### **Article 18 (1)** Implementation of defence in depth

- Overview of the Contracting Party's arrangements and regulatory requirements concerning the design and construction of nuclear installations;
- Status with regard to the application for all nuclear installations of the defence in depth concept, providing for multiple levels of protection of the fuel, the primary pressure boundary and the containment, with account taken of internal and external events and the impact of related sequential natural external events (e.g. tsunami caused by an earthquake, mud slide caused by heavy rain);

- Extent of use of design principles, such as passive safety or the fail safe function, automation, physical and functional separation, redundancy and diversity, for different types and generations of nuclear installations;
- Implementation of design measures or changes (plant modifications, backfitting) with the objective of preventing beyond design basis accidents and mitigating their radiological consequences if they were to occur (this applies to the entire nuclear installation including spent fuel pools);
- Implementation of particular measures to maintain, where appropriate, the integrity of the physical containment to avoid long term off-site contamination, in particular actions taken or planned to cope with natural hazards more severe than those considered in the design basis;
- Improvements implemented for designs for nuclear power plants as a result of deterministic and probabilistic safety assessments made since the previous National Report; and an overview of main improvements implemented since the commissioning of the nuclear installations;
- Regulatory review and control activities.

**Article 18 (2)** Incorporation of proven technologies

- Contracting Party's arrangements and regulatory requirements for the use of technologies proven by experience or qualified by testing or analysis;
- Measures taken by the licence holders to implement proven technologies;
- Analysis, testing and experimental methods to qualify new technologies, such as digital instrumentation and control equipment;
- Regulatory review and control activities.

**Article 18 (3)** Design for reliable, stable and manageable operation

- Overview of the Contracting Party's arrangements and regulatory requirements for reliable, stable and easily manageable operation, with specific consideration of human factors and the human-machine interface (see also Article 12 of the Convention);
- Implementation measures taken by the licence holder;
- Regulatory review and control activities.

**Article 19 Operation**

**Article 19 (1)** Initial authorization

- Overview of the Contracting Party's arrangements and regulatory requirements for the commissioning of a nuclear installation, demonstrating that the installation, as constructed, is consistent with design requirements and safety requirements;
- Conduct of appropriate safety analyses;
- Commissioning programmes;
- Programmes of verification that installations, as constructed, are consistent with the design and in compliance with safety requirements;

- Regulatory review and control activities.

**Article 19 (2)** Operational limits and conditions

- Overview of the Contracting Party's arrangements and regulatory requirements for the definition of safe boundaries of operation and the setting of operational limits and conditions;
- Implementation of operational limits and conditions, their documentation, training in them, and their availability to plant personnel engaged in safety related work;
- Review and revision of operational limits and conditions as necessary;
- Regulatory review and control activities.

**Article 19 (3)** Procedures for operation, maintenance, inspection and testing

- Overview of the Contracting Party's arrangements and regulatory requirements on procedures for operation, maintenance, inspection and testing of a nuclear installation;
- Establishing of operational procedures, their implementation, periodic review, modification, approval and documentation;
- Availability of the procedures to the relevant nuclear installation staff;
- Involvement of relevant nuclear installation staff in the development of procedures;
- Incorporation of operational procedures into the management system of the nuclear installation;
- Regulatory review and control activities.

**Article 19 (4)** Procedures for responding to operational occurrences and accidents

- Overview of the Contracting Party's arrangements and regulatory requirements on procedures for responding to anticipated operational occurrences and accidents;
- Establishment of event based and/or symptom based emergency operating procedures;
- Establishment of procedures and guidance to prevent severe accidents or mitigate their consequences;
- Establishment of procedures and guidance to manage accident situations at multi-unit nuclear installations and/or multi-facility sites;
- Regulatory review and control activities.

**Article 19 (5)** Engineering and technical support

- General availability of necessary engineering and technical support in all safety related fields for all nuclear installations, under construction, in operation, under accident conditions or under decommissioning;
- General availability of necessary technical support on the site and also at the licence holder or utility headquarters, and procedures for making central resources available for nuclear installations;
- General situation with regard to dependence on consultants and contractors for technical support to nuclear installations;



- Regulatory review and control activities.

**Article 19 (6)** Reporting of incidents significant to safety

- Overview of the Contracting Party's arrangements and regulatory requirements to report incidents significant to safety to the regulatory body;
- Overview of the established reporting criteria and reporting procedures for incidents significant to safety and other events such as near misses and accidents;
- Statistics of reported incidents significant to safety for the past three years;
- Documentation and publication of reported events and incidents by both the licence holders and the regulatory body;
- Policy for use of the INES scale;
- Regulatory review and control activities.

**Article 19 (7)** Operational experience feedback

- Overview of the Contracting Party's arrangements and regulatory requirements on the licence holders to collect and analyse and share operating experience;
- Overview of programmes of licence holders for the feedback of information on operating experience from their own nuclear installation, from other domestic installations and from installations abroad;
- Procedures to analyse domestic and international events;
- Procedures to draw conclusions and to implement any necessary modification to the installation and to personnel training programmes and simulators;
- Mechanisms to share important experience with other operating organizations;
- Use of international information databases on operating experience;
- Regulatory review and control activities for licence holder programmes and procedures;
- Programmes of the regulatory body for feedback of operational experience and the use of existing mechanisms to share important experience with international organizations and with other regulatory bodies.

**Article 19 (8)** Management of spent fuel and radioactive waste on the site

- Overview of the Contracting Party's arrangements and regulatory requirements for the on-site handling of spent fuel and radioactive waste;
- On-site storage of spent fuel;
- Implementation of on-site treatment, conditioning and storage of radioactive waste;
- Activities to keep the amount of waste generated to the minimum practicable for the process concerned, in terms of both activity and volume;
- Established procedures for clearance of radioactive waste;
- Regulatory review and control activities.

### **Annexes**

Contracting Parties may include, as appropriate, the following as annexes to their National Reports:

- List of nuclear installations;
- Data on nuclear installations;
- References to national laws, regulations, guides, etc.; and
- References to official national reports relating to safety.

## **ANNEX TO GUIDELINES FOR NATIONAL REPORTS: VOLUNTARY PRACTICES**

Having in mind the safety objectives of the CNS, Contracting Parties wishing to report on a voluntary basis on the safety of other types of civilian nuclear reactors could follow the format of these guidelines, addressing the relevant articles of the Convention as they deem appropriate.

To achieve greater transparency in the review process for interested parties, Contracting Parties are encouraged to implement, on a voluntary basis, the following practices:

- (1) Taking into consideration paragraph 43 of the Guidelines regarding the Review Process under the Convention on Nuclear Safety, Contracting Parties are encouraged to make public their National Reports under Article 5 of the Convention or summaries thereof.
- (2) Contracting Parties are also encouraged to make public the questions and comments received from other Contracting Parties during the review process pursuant to Article 20.3 of the Convention, including the responses to these questions and comments, or summaries thereof, without naming the Contracting Parties that submitted the questions or comments.
- (3) National Reports of the Contracting Parties may also serve as an information source for other purposes, if they are made public by the Contracting Parties. They provide comprehensive information on nuclear safety and nuclear regulatory approaches in the State concerned in a clearly arranged manner. Many countries use them for the training of personnel.