

REGULATION OF THE COUNCIL OF MINISTERS

of 11 February 2013

on requirements for the commissioning and operation of nuclear facilities¹⁾

Pursuant to Article 38 of the Act of Parliament of 29 November 2000 on the Atomic Law (Journal of Laws of 2012, Item 264 and 908) it is hereby ordered as follows:

Chapter 1 General Provisions

§1. The terms and expressions used under this Regulation shall have the following meaning:

- 1) reactor cooling circuit pressure boundary:
 - a) in the case of pressurized water reactors – a system of physically connected pressure components of equipment retaining the reactor coolant of specific operational parameters, in particular the reactor pressure vessel or reactor pressure channels, piping or their items, pumps and valves, which constitute the reactor cooling circuit or are connected with the reactor cooling circuit up to and including the following valves:
 - the outermost isolation valve located on the piping system which passes through the primary containment,
 - the second of two valves located on the piping of the system which does not pass through the primary containment, and which are closed during the normal reactor operation,
 - safety and relief valves mounted on the reactor cooling circuit components,
- 2) nuclear power unit – an assembly comprising in particular: nuclear power reactor, reactor cooling circuit, working medium circuit, one or more turbine generators which, together

¹⁾ This regulation is the implementation into the Polish laws of the Council Directive 2009/71/Euratom of 25 June 2009 establishing community framework of nuclear safety for nuclear facilities (O. J. EU L 172 of 02.07.2009, p. 18 and O.J. EU L 260 of 03.10.2009, p. 40)

with the auxiliary systems, creates a coordinated system of conversion of nuclear fuel thermal energy into electricity;

- 3) safety limits – values of these physical and technological parameters which must not be exceeded and which directly impact the condition of protective barriers;
- 4) safety system settings – parameter values at which protective devices are automatically actuated in the event of anticipated operational occurrences or accident conditions to prevent safety limits from being exceeded;
- 5) reactor containment:
 - a) in the case of a nuclear power plant – jointly a primary and secondary reactor containment,
 - b) in the case of a research reactor – primary reactor containment;
- 6) primary reactor containment – a leak-tight structure designed to withstand limiting design parameters determined for considered accidents;
- 7) Agency's President – President of the National Atomic Energy Agency [in Polish: "PAA"];
- 8) safe shutdown state – the state of the nuclear facility following the anticipated operational occurrence or accident conditions, where fundamental safety functions are performed and stably maintained for a long period of time, and in the case of a nuclear power plant and research reactor, the reactor is additionally in a sub-critical state;
- 9) operational states – the normal operation and anticipated operational occurrences;
- 10) nuclear facility's states – operational states and accident conditions;
- 11) safety system – a nuclear facility system intended to prevent the occurrence or to limit the consequences of anticipated operational occurrences and accident conditions, and in the case of a nuclear power plant or research reactor, also to attain a safe shutdown state;
- 12) protection system – a system which monitors the operation of a nuclear facility and which, on sensing deviations from normal operation, automatically initiates actions to prevent the anticipated operational occurrences and accident conditions;
- 13) the Act – the Atomic Law Act of 29 November 2000;
- 14) secondary reactor containment – an external confinement envelope which limits the space where radioactive fission products are located or could be located following the accident,

and which fully surrounds the primary reactor containment penetrations and isolation valves , and at least partly:

- a) the primary reactor containment,
- b) part of the nuclear facility systems and components connected with the reactor cooling circuit pressure boundary or the primary reactor containment atmosphere, which, in the event of an accident, may transport contaminated fluids outside the primary reactor containment.

Chapter 2

Common Requirements for Commissioning and Operation of a Nuclear Facility

§2. 1. Commissioning and operation of the nuclear facility shall be performed in accordance with operational limits and conditions.

2. Operational limits and conditions shall be subject to reviews during commissioning and operation of the nuclear facility.

3. The Agency's President while modifying operational limits and conditions shall take into account operating experience, modifications of systems or structures or components of the nuclear facility important for ensuring nuclear safety and radiological protection, results of new safety analyses as well as scientific and technological developments.

4. Description of operational limits and conditions shall be made available to the operators of nuclear facility's control room in a separate document (technical specification for commissioning and operation respectively).

5. To an application for a modification of operational limits and conditions it shall be required to enclose a detailed proposal concerning the modification, including reasons for the implementation of such modification.

6. To an application for the consent regarding a modernization of the system or item of construction or equipment of the nuclear facility, it shall be required to enclose detailed documentation of the proposed modernization including reasons for such modernization.

§3. 1. Operational limits and conditions shall include all modes of normal operation of the nuclear facility, in particular operation at power, reactor's sub-critical states and reloading of nuclear fuel and transitions between these modes.

2. Operational limits and conditions shall include at least:

- 1) safety limits;

- 2) limiting settings for safety systems;
- 3) limits and conditions for normal operation;
- 4) requirements concerning inspection and surveillance over the systems, structures and components of the nuclear facility important for ensuring nuclear safety and radiological protection;
- 5) minimum required staffing of operational personnel, including the control room operators.

§ 4. 1. Safety limits shall be established with the application of conservative approach taking into account uncertainties of safety analyses.

2. In the case of exceeding safety limits during commissioning or operation of the nuclear power plant or research reactor, the reactor shall be immediately shut down.

§ 5. 1. Limits and conditions for normal operation shall determine conditions for the safe operation of the nuclear facility in all the modes of its normal operation. They shall include in particular:

- 1) ranges and rates of permissible changes of physical and process parameters of the nuclear facility;
- 2) requirements for functional availability and effectiveness of the systems and components of the nuclear facility important for ensuring nuclear safety and radiological protection so that they could fulfil safety functions in particular conditions;
- 3) measures which should be taken in the case when the requirements as referred to in Item 2 are not met and the identification of time period in which these measures should be taken.

§ 6. 1. In the case when an organizational entity which possesses the license for commissioning or operation of the nuclear facility [licensee] is not able to guarantee the operation of the nuclear facility in accordance with limits and conditions for normal operations and also in the case when the nuclear facility behaves in an unexpected way, appropriate measures shall be taken immediately aimed at attaining by the facility the safe state.

2. The nuclear facility shall not be re-started after the unplanned shutdown until it has been demonstrated that such restart is safe.

§ 7. If the circumstances require that the nuclear facility is to be operated outside the limits and conditions for normal operation, such operation shall be conducted in accordance with the instruction approved by the Agency's President, which has been previously developed by the head of an organizational entity [licensee] on the basis of the safety analysis including also measures aimed at resuming the state of normal operation of the nuclear facility.

§ 8. In order to ensure a proper level of nuclear safety and radiological protection at the stage of commissioning and at the stage of operation of a nuclear facility, in the organizational entity which possesses license for commissioning or operation of the nuclear facility [licensee], in particular:

- 1) decisions on nuclear safety shall be made after the performance of analyses taking into account any aspects relating to nuclear safety;
- 2) the sufficient workforce shall be guaranteed possessing qualifications and professional experience adequate to tasks performed, provided that
 - a) the number of employees and their qualifications required for the safe operation of the nuclear facility are systematically verified and documented,
 - b) employees in the positions important for nuclear safety and radiological protection are staffed in accordance with a long-term plan,
 - c) changes in the number of employees which could significantly affect nuclear safety and radiological protection are planned in advance and assessed after their implementation;
- 3) any activities important for ensuring nuclear safety and radiological protection shall be conducted in accordance with commissioning or operating procedures;
- 4) if the safety analysis shows that it is permissible to conduct non-routine tests or actions, that are considered necessary and are not covered by the commissioning or operating procedures, they shall be carried out in accordance with the procedure, approved by the Agency's President, for conducting non-routine tests or actions;
- 5) necessary equipment and suitable conditions shall be provided at the workplace for the purpose of safe performance of tasks by the nuclear facility's employees;
- 6) there shall be a suitable review and assessment system in place enabling the permanent monitoring of nuclear safety issues and the performance of periodic nuclear safety assessments;
- 7) systematic analyses shall be conducted with regard to operating experience, development of international safety requirements, technological developments and new knowledge, and conclusions from these analyses shall be used to improve the safety state of the nuclear facility;
- 8) nuclear facility configuration management shall ensure the consistency between design requirements, physical configuration of the facility and its documentation and shall include in particular management of the facility's configuration changes resulting from the conducted activities of maintenance, tests, operational limits and conditions

and modernizations or modifications of the systems, structures or components of the nuclear facility;

- 9) activities conducted and processes taking place in the nuclear facility, including activities of the suppliers and contractors of the systems, structures and components of the nuclear facility which may affect the safe operation of the facility shall be controlled with the use of the integrated management system;
- 10) experiments which could adversely affect nuclear safety or radiological protection shall not be conducted;
- 11) systematic assessments shall be conducted in order to confirm, in particular by applying suitable qualification tests, that the systems and structures and components of the nuclear facility important for ensuring nuclear safety and radiological protection are capable of functioning in compliance with the design requirements in the operational states and accident conditions.

§ 9. 1. During commissioning and operation of the nuclear facility in all its operational states, it shall be ensured that the radiological protection requirements are fulfilled for the purpose of implementing the optimization principle as referred to in Article 9 of the Act [ALARA], in particular by:

- 1) dividing the location of workplaces and the control of employees' access and movement of radioactive substances and obtaining information about actual dose rates and radioactive contaminations;
- 2) specifying the principles of cooperation in developing commissioning and operating procedures for the works in ionizing radiation exposure conditions;
- 3) applying measuring instruments and equipment for monitoring radiation hazards;
- 4) using workers' individual and collective protection means;
- 5) training nuclear facility's employees and external workers in the field of radiological protection;
- 6) radiological monitoring on the nuclear facility site;
- 7) decontamination of individuals, systems and structures and components of the nuclear facility.

2. During the whole period of commissioning and operation of the nuclear facility, it shall be ensured that a radiation protection officer and the radiation protection service unit, that is organizationally separated:

1) are independent from organizational units responsible for the operation of the nuclear facility, especially as regards proposing measures and activities aimed to ensure radiological protection;

2) possess sufficient resources to perform their tasks.

3. During commissioning and operation of the nuclear facility it shall be verified that the integrated management system has been implemented correctly in the scope of radiological protection and it shall be assessed whether this system meets the set objectives, and, if necessary, suitable corrective and updating measures shall be taken to ensure its implementation in the light of operating experience.

§ 10. In the organizational entity possessing the license for commissioning or operation of the nuclear facility [licensee], the collection, segregation, processing, movement and storage, on the facility site, and preparation for transport outside the nuclear facility site of radioactive waste and spent nuclear fuel during commissioning or operation of the nuclear facility shall be in accordance with the radioactive waste and spent nuclear fuel safe management program constituting a part of the description of processes occurring in the organizational entity [licensee] as referred to in Article 36k Section 2 Item 7 of the Atomic Law Act.

§ 11. 1. In the organizational entity possessing the license for commissioning or operation of the nuclear facility [licensee], during commissioning or operation of the nuclear facility:

1) there shall be conducted:

- a) monitoring of the releases of radioactive substances to the environment in order to verify whether the annual effective doses from all exposure routes, received by members of the public, are maintained on the minimum reasonably achievable level, and
- b) systematic analyses of the results of this monitoring;

2) the analyses, as referred to in Section 1 Letter b) shall be presented on the request of the Agency's President.

2. In the organizational entity possessing the license for commissioning or operation of the nuclear facility [licensee], during commissioning or operation of the nuclear facility, there shall be conducted the radiological monitoring of the environment in order to assess the radiological impact of radioactive substance releases on the environment, in accordance with the program developed by the head of organizational entity possessing the license for commissioning or operation of the nuclear facility [licensee].

§ 12. During commissioning or operation of the nuclear facility, the control and monitoring of water-chemical and radio-chemical regime of the systems and components of the nuclear

facility shall be conducted in accordance with the program developed by the head of organizational entity possessing the license for commissioning or operation of the nuclear facility [licensee].

§ 13. During commissioning or operation of the nuclear facility, the part of nuclear facility in which construction and installation works are performed, shall be separated from the remaining part of the nuclear facility that is being commissioned or is in operation, in particular from a nuclear power unit, so that conducted works and possible accidents or failures arising in connection with the construction could not affect adversely nuclear safety or radiological protection of the part of the facility in which these works are not performed.

§ 14. Throughout the period of commissioning and operation of the nuclear facility, suitable measures shall be ensured to prevent fire and extinguish fire rapidly and to prevent the fire spread and interaction with places where fire could pose a threat to nuclear safety or radiological protection, in accordance with the defence-in-depth principle, on the basis of the fire protection program implemented prior to the commencement of commissioning of the nuclear facility.

§ 15. Suitable procedures shall be implemented in the nuclear facility in order to ensure the control and minimize the amount of combustible materials and eliminate potential sources of fire which during commissioning or operation of the nuclear facility could damage the systems, structures or components of the nuclear facility important for ensuring nuclear safety and radiological protection. Suitable procedures shall be also implemented with regard to the use of such measures as inspections of technical condition, maintenance and repair activities, tests of technical and functional efficiency of fire barriers and equipment for detecting and extinguishing fire.

§ 16. In the nuclear facility it shall be ensured that the required fire protection devices and extinguishers are in place, and suitable trainings shall be organized for employees, concerning fire protection measures and actions taken in case of fire. In addition, suitable procedures shall be developed and reviewed specifying obligations and actions of the nuclear facility's employees in case of fire occurring during commissioning and operation of the nuclear facility.

§ 17. 1. On the site of nuclear facility whose commissioning or operation has been licensed, the on-site fire service shall be established including a suitable number of workers and necessary equipment.

2. Extinguishing fires in the nuclear facility during its commissioning and operation shall be covered by the rescue and extinguishing action plan which shall be developed and elaborated

by the head of an organizational entity [licensee] and agreed with the suitable regional chief of the National Fire Service, taking into account the fire extinguishing strategy in the nuclear facility, for each zone in which fire could damage systems, structures or components of the nuclear facility important for ensuring nuclear safety and radiological protection.

§ 18. 1. Prior to the commissioning of the nuclear facility, emergency exercises shall be conducted in the organizational entity performing activities which consist in the commissioning of the nuclear facility [licensee] in order to test the on-site emergency preparedness and response plan.

2. During commissioning and operation of the nuclear facility, employees of the nuclear facility shall be trained on their tasks and responsibilities in case of an accident and as to the performance of periodic emergency exercises based on realistic scenarios, taking into account combinations of nuclear risks with non-nuclear risks such as fire combined with significant levels of radiation or radioactive contaminations, emission of poisonous or suffocating gases combined with radiation or contaminations.

§ 19. 1. During commissioning and operation of the nuclear facility it shall be permitted to use in the reactor only the nuclear fuel whose properties, type and enrichment have been specified in the license for commissioning and operation of the nuclear facility.

2. During commissioning and operation of the nuclear power plant or research reactor, the in-core nuclear fuel management shall be conducted in accordance with technical specifications and procedures for purchase, loading and reloading of fuel, conducting a fuel cycle, unloading, conducting tests and inspections of nuclear fuel and reactor core components, including the detection of degradation of fuel elements or control rods, which are part of respectively commissioning or operating procedures of the nuclear facility.

3. In the nuclear power plant and research reactor, a particular lot of nuclear fuel shall be loaded to the reactor and unloaded from the reactor in accordance with the nuclear fuel reloading program approved by the Agency's President.

4. The condition of the reactor core during reloading of nuclear fuel shall be permanently monitored, and the nuclear fuel reloading program shall be, if necessary, subject to review and modifications which shall be approved by the Agency's President.

5. Upon completion of reloading of nuclear fuel and prior to the commissioning of the reactor, tests shall be conducted in order to verify whether the reactor core functions in accordance with design assumptions.

§ 20. 1. Starting from the first transport of nuclear fuel to the nuclear facility site, suitable emergency preparedness measures shall be implemented in the nuclear facility.

2. Emergency procedures in the nuclear power plant and research reactor shall be fully implemented prior to the first loading of nuclear fuel to the reactor core.

3. Measuring instruments, tools, devices, documentation and communications means intended for use in case of emergency shall be available and maintained in good technical condition and shall be kept in that manner so as to prevent their damage or unavailability as the result of an accident.

§ 21. Methods ensuring the minimization of risks which are unrelated to ionizing radiation for nuclear facility's workers, external workers and other individuals entering the nuclear facility site shall be specified in the risk minimization program developed by the head of organizational entity possessing the license for commissioning or operation of the nuclear facility [licensee].

Chapter 3

Commissioning of a Nuclear Facility

§ 22. In the nuclear facility commissioning program, as referred to in Article 37a Section 2 of the Atomic Law Act, shall be specified:

- 1) the organization of commissioning works, including their division into particular commissioning stages;
- 2) the programs for particular stages of the nuclear facility's commissioning.

§ 23. 1. Commissioning works in the nuclear facility shall be conducted in accordance with commissioning procedures developed, verified, approved, modified and revoked according to the principles set out in the integrated management system. During commissioning also procedures for the operation stage of the nuclear facility shall be verified, to the extent practical, in particular those with regard to conducting the nuclear facility operational processes.

2. The Agency's President may order the implementation of changes in the commissioning procedures if the reasons for nuclear safety or radiological protection so require.

§ 24. 1. Commissioning procedures of the nuclear facility shall provide for situations in which commissioning works are suspended in order to obtain the approval of the Agency's President for their further conduct (hold points). In particular one of the hold points shall precede the commencement of the stage of physical commissioning of the reactor, as referred to in § 29.

2. The program of each stage of commissioning of the nuclear facility shall include:

- 1) identification of objective and description of methodology for the performance of activities at a given stage of commissioning of the nuclear facility;

- 2) schedule of activities including time and logical interrelations between particular activities of the given stage of commissioning of the nuclear facility;
- 3) requirements concerning process system preparations and power supply;
- 4) acceptance criteria for results and description of methodology for the assessment of their fulfilment;
- 5) description of the initial state and final state of the nuclear facility for a given stage of commissioning;
- 6) description of the organization of a commissioning stage, in particular: identification of requirements concerning the staff necessary to perform activities at a given stage of commissioning, indication of individuals responsible for the performance of activities, managing of activities and their assessment, authorities and scope of responsibilities of these individuals;
- 7) identification of the method for transition to the next stage of commissioning;
- 8) programs of conducting activities at the given stage of commissioning, including in particular:
 - a) identification of objective and description of methodology for the performance of activities,
 - b) requirements concerning process system preparations and power supply;
 - c) acceptance criteria for results and description of methodology for the assessment of their fulfilment,
 - d) description of the initial state and final state of the nuclear facility for a given activity.

§ 25. Prior to the commencement of the next stage of commissioning of the nuclear facility, the preparation of the nuclear facility for a given commissioning stage shall be verified, while checking in particular:

- 1) completion of tests required at the previous stage of commissioning;
- 2) fulfilment of the acceptance criteria for tests required at the previous stage of commissioning;
- 3) preparation of employees, providing the employees with suitable equipment, and preparation of respective systems and structures and components of the nuclear facility for commencing a given stage of commissioning in accordance with the requirements specified in the nuclear facility commissioning program;

- 4) completeness and correctness of the documentation of systems and structures and components of the nuclear facility undergoing commissioning at a given stage of commissioning;
- 5) fulfilment of the quality assurance program requirements for a given stage of commissioning;
- 6) documenting the fulfilment of requirements and conditions set out previously by the Agency's President or the President of Technical Inspection Office.

§ 26. 1. If during the performance of commissioning tests, a state of the nuclear facility occurs in which nuclear safety might be threatened, the conducted tests shall be immediately stopped and the nuclear facility shall be placed into the safe state and the Agency's President shall be promptly notified about the situation occurred.

2. Resuming the stopped tests shall be permitted after the examination and clarification of the causes of the event and upon obtaining the approval of the Agency's President.

§ 27. Commissioning tests of the nuclear facility, required at particular stages of commissioning, shall include:

- 1) pre-operational tests of the systems and structures and components of the nuclear facility, in particular:
 - a) checks and functional tests of particular devices, structures and sub-systems, in particular valves, motors, generators, pumps, fans, blowers, pipelines, pressure vessels, measuring and controlling instruments, including voltage, current, frequency, operation of switches, busbars, safety system settings, functioning of interlocks, calibration of instruments,
 - b) reactor cooling circuit and its components,
 - c) moderator system and its components (in case of channel reactors),
 - d) reactivity control system,
 - e) reactor protection system,
 - f) power conversion system (working medium circuit),
 - g) auxiliary systems of the nuclear facility, including cooling water systems,
 - h) electrical systems,
 - i) reactor containment system, especially:
 - leakage tests (partial and integral ones) and structural resistance tests for internal overpressure or vacuum,
 - functional tests of isolation valves and logical system initiating the containment isolation,

- tests of auxiliary systems of the reactor containment,
- j) radioactive waste and spent nuclear fuel management systems, including automatic isolation and protection systems as well as controlling and measuring and signalling instruments [alarms],
- k) measurement and control systems, including in particular:
 - tests covering the control functions during normal operation and instruments for signalling deviations from normal operation, which are conducted for the whole design range of operational conditions,
 - simulation of limiting malfunctions and failures of the measurement and control systems,
 - tests covering the protective measures for ensuring integrity of the measurement and control systems,
- l) fire protection systems,
- m) safety systems, including in particular:
 - reactor core emergency cooling systems with auxiliary systems ensuring their functioning, in particular such as: cooling, power supply, lubrication,
 - system of automatic depressurization of the reactor cooling circuit,
 - systems of post-accident reactor containment cooling, spraying and re-circulation ventilation, reduction and control of combustible gases concentration in the reactor containment,
 - other systems depending on the nuclear facility's design solutions, in particular emergency feedwater system,
- n) preliminary start-up of fluid systems and auxiliary systems, in particular the performance of pressure tests of the reactor cooling circuit and working medium circuit, including their auxiliary systems (cold functional tests),
- o) simulation of operational conditions of the nuclear facility to the extent practical, including the anticipated operational occurrences with typical temperatures, pressures and flow rates (hot functional tests);
- 2) tests at the stage of physical commissioning of the reactor, including:
 - a) fuel loading and sub-criticality tests,
 - b) initial criticality and low power tests;
- 3) power tests at the stage of energy commissioning of the reactor during which the reactor power is gradually increased to 10, 25, 50, 75, 90 and 100% of the rated power, up to and including the trial run of the nuclear facility at rated power.

§ 28. 1. During pre-operational tests of the systems and structures and components of the nuclear facility in particular the following shall be tested:

- 1) the effectiveness of thermal insulation and the functioning of heat removal systems;
- 2) flow rate values, vibration, clearances and other means of compensation of thermal expansivity, and also the operation of measuring instruments and other equipment at high temperatures;
- 3) the correctness of operational instructions and procedures.

2. Hot functional tests shall be conducted until the steady state is attained in which it is possible to verify whether the systems and structures and components of the nuclear facility operate in accordance with technical specifications (design conditions).

§ 29. 1. The stage of physical commissioning of the reactor commences with starting the initial loading of nuclear fuel to the reactor core.

2. Tests conducted at the stage of physical commissioning of the reactor are aimed at demonstrating the correctness of nuclear fuel loading and neutron-physical characteristics of the reactor core and the fulfilment of specific safety functions depending on neutron-physical characteristics.

3. Upon completion of nuclear fuel loading to the reactor core and in the reactor sub-critical state, in order to make sure that nuclear fuel was loaded in accordance with the designed reactor core load pattern for which relevant safety analyses have been carried out, and to confirm that the reactor is in the suitable state for start-up, and that the conditions which allow making the reactor critical have been met, the tests and measurements shall be conducted including in particular the verification of:

- 1) coolant flows,
- 2) measuring instruments,
- 3) control rod drives;
- 4) automatic insertion and withdrawal of control rods to and from the reactor core;
- 5) reactor protection system;
- 6) in-reactor measurement system.

4. Initial criticality and low power tests shall be carried out in order to confirm that the functioning of the reactor core is in accordance with the design, the reactor core is in the state suitable for operating at higher power levels, the characteristics of the reactor cooling circuit, reactivity control systems and effectiveness of shields are proper from the viewpoint of nuclear safety, and the neutron-physical characteristics of the reactor core are in accordance with the design assumptions. These tests shall include in particular:

- 1) behaviour and characteristics of the reactor core;
- 2) physical parameters of the reactor, including reactivity coefficients;
- 3) functioning of the reactor cooling circuit, reactivity control system and effectiveness of shields.

5. During the performance of tests, as referred to in Section 4, the settings of the reactor protection system against undesirable changes of the neutron flow shall be set on the conservative level.

§ 30. 1. At the stage of energy commissioning on each power level, as referred to in § 27 Item 3, and during the trial run of the nuclear power unit or research reactor, the tests and measurements shall be carried out to demonstrate that the nuclear power unit or research reactor may be safely operated and will run in accordance with the design both in normal operation conditions and during and after anticipated operational occurrences, in particular within these tests automatic reactor scrams by the protection system and load rejections at different power levels shall be performed.

2. At the end of energy commissioning of the nuclear power unit or research reactor an assessment of the results obtained shall be conducted in order to confirm whether operational limits and conditions are proper and practically applicable and to specify possible limitations for operation which must be implemented as demonstrated by the results of commissioning tests and measurements.

§ 31. 1. Documentation on the nuclear facility commissioning shall include in particular:

- 1) the nuclear facility commissioning program;
- 2) protocols on the tests conducted at particular stages of the nuclear facility commissioning – confirming the performance of tests in accordance with the commissioning procedures or specifying possible deviations or limitations in relation to these procedures, reservations or comments;
- 3) protocols on the completion of particular stages of the nuclear facility commissioning, containing results of tests and measurements, indicating any possible non-conformances, comments and reservations and also containing a list of tests and measurements conducted;
- 4) protocols on the approval by the head of organizational entity [licensee] of particular stages of the nuclear facility commissioning;
- 5) reports on particular stages of the nuclear facility commissioning and on particular commissioning works and activities, in particular tests and measurements, prepared by individuals responsible for particular activities conducted at the stage of the nuclear

facility commissioning and approved by the individual in charge of commissioning of the nuclear facility.

2. To the protocols as referred to in Section 1 Items 2-4 shall be enclosed working reports on works, which have been conducted, containing obtained results of tests and measurements and assessments of these results.

3. The reports as referred to in Section 1 Item 5 shall contain at least:

- 1) identification of an objective of the test or measurement;
- 2) indication of procedures for conducting tests or measurements;
- 3) description of the performance of a test or measurement, in particular: initial and final state of the nuclear facility, actual limitations or difficulties which occurred and measures taken in order to overcome these problems, including any modifications introduced in the nuclear facility or commissioning procedures;
- 4) description and specification of equipment used to perform a test or measurement;
- 5) summary of obtained data and their analysis;
- 6) assessment of the test or measurement results, including the statement regarding the fulfilment of the acceptance criteria;
- 7) conclusions;
- 8) designation of the report;
- 9) signature of an individual who prepared the report.

§ 32. 1. Upon completion of the last stage of the nuclear facility commissioning, based on the commissioning documentation as referred to in § 31, a report on the nuclear facility commissioning shall be prepared that includes:

- 1) collective description of the stages of the nuclear facility commissioning with the specification of the types of tests and measurements conducted;
- 2) statement about the completion of commissioning and performance of all activities and works specified in the commissioning program, including tests and measurements;
- 3) compilation of test and measurement results important for the assessment of the correctness of performance of the nuclear facility commissioning with the assessments and conclusions, covering, if applicable, in particular:
 - a) neutron-physical and thermal-hydraulic characteristics of the reactor core and reactivity control systems,
 - b) characteristics of the reactor coolant circuit,

- c) characteristics of safety systems: reactor emergency cooling system, reactor containment system and other systems and components (depending on design solutions);
 - 4) indication of the operational limits and conditions of the nuclear facility which have been verified on the basis of the results of commissioning tests, including their description;
 - 5) summary and final conclusions.
2. Other reports as referred to in § 31 Section 1 Item 5 may be enclosed to the commissioning report.

Chapter 4

Operation of the nuclear facility

§ 33.1. Operation of the nuclear facility shall be conducted in accordance with operating procedures developed, verified, approved, modified and revoked according to the principles set out in the integrated management system.

2. Operating procedures of the nuclear facility shall be developed on the basis of the design documentation, in particular the safety analysis report, also on the basis of operational limits and conditions and the results of nuclear facility commissioning.

3. Operating procedures of the nuclear facility shall be developed for particular states of the nuclear facility.

4. Operating procedures of the nuclear facility shall be made available to employees of the nuclear facility on the permanent basis, and to the nuclear regulatory bodies – on demand.

5. The Agency's President may order introducing changes in the operating procedures if the reasons for nuclear safety or radiological protection require so.

§ 34.1. The description of responsibilities, obligations, authorities and interactions in the field of management, performance and assessments, as referred to in Article 36k, Section 2, Item 5 of the Atomic Law Act, shall determine in particular the following:

- 1) control room operators and operational supervision staff in charge of the shutdown of the reactor due to safety reasons, and also a scope of their responsibilities and powers;
- 2) staff members entitled to re-start the reactor after the occurrence of deviations from normal operation which led to its [unplanned] shutdown or an extended outage for maintenance, as well as the scope of their responsibilities and powers.

2. The procedure to be followed in case if operational staff find that the state or conditions of the functioning of systems or structures and components of the nuclear facility are not in compliance with operating procedures, shall be laid down in writing.

§ 35. Operating procedures being in force in the organizational entity [licensee] shall provide for solutions which prevent the possibility of occurrence of an uncontrolled nuclear fission reaction, degradation of nuclear fuel and uncontrolled releases of radioactive substances to the environment.

§ 36. 1. The commencement of the start-up of the nuclear facility after the reloading of fuel to the critical state of the reactor shall be permitted if the systems and structures and components of the nuclear facility necessary for the operation of the nuclear facility are in the state of functional operability which is sufficient to ensure the reliable and safe operation of the nuclear facility in accordance with the design, safety analysis report, operational limits and conditions and also other requirements under the license for operation of the nuclear facility and provisions of regulations in force.

2. Prior to the commencement of the start-up of the nuclear facility to the reactor critical state, it shall be verified:

- 1) whether the activities and tests in connection with the reloading of fuel, and maintenance activities have been completed;
- 2) whether the criteria for acceptance of activities and tests as referred to in Item 1 have been fulfilled;
- 3) whether the nuclear facility and its staff are prepared for the start-up of the reactor to the critical state and further operation at full power.

3. Prior to the start-up of the nuclear facility to the critical state of the reactor after the fuel reloading, the following documents shall be submitted to the Agency's President in the term specified in the license for operation of the nuclear facility:

- 1) neutron-physical characteristics of the reactor core;
- 2) documents confirming the preparedness of the nuclear facility to a start-up after the fuel reloading, including:
 - a) proposed supplements and corrections to the safety analysis report,
 - b) proposals for the change of the operational limits and conditions, and also operating procedures,
 - c) documentation on the tests and operational preparedness of the components of the nuclear facility that are important for ensuring nuclear safety and radiological protection, and documentation from inspection of these components,

- d) document summarizing the verification of preparedness of the nuclear facility and its staff for the further operation of the nuclear facility;
 - 3) schedules for the further operation of the nuclear facility, including the start-up program after the fuel reloading covering physical and energy commissioning.
- § 37. 1. Activities of maintenance, testing, surveillance and inspection of the systems and structures and components of the nuclear facility important for ensuring nuclear safety and radiological protection shall be performed in accordance with the program developed and implemented by the head of organizational entity possessing the license for operation of the nuclear facility [licensee].
2. The program, as referred to in Section 1, shall in particular:
- 1) take into account the operational limits and conditions and other requirements contained in the license for operation of the nuclear facility;
 - 2) include:
 - a) systematic assessments in order to confirm that the systems and structures and components of the nuclear facility that are important for ensuring nuclear safety and radiological protection are capable of performing their functions in the operational states and in accident conditions,
 - b) the management of aging processes including the identification of aging effects and activities in order to ensure the reliable performance of required safety functions by the systems and structures and components in the whole period of operation of the nuclear facility, taking into account in particular long-term processes of their degradation occurring due to operational and environmental conditions.
3. The program, as referred to in Section 1 shall be subject to periodic reviews on the basis of operating experience.
- § 38. 1. Activities of maintenance, testing, surveillance and inspection of the systems and structures and components of the nuclear facility that are important for ensuring nuclear safety and radiological protection shall be performed in accordance with the procedures constituting a part of the program as referred to in § 37 Section 1 with the frequency ensuring the reliability and functioning of the required number of these systems and structures and components in compliance with the design assumptions and safety analysis report of the nuclear facility.
2. While determining the frequency of activities as referred to in Section 1, the following shall be taken into account:

- 1) significance of particular systems and structures and components of the nuclear facility for ensuring nuclear safety and radiological protection;
- 2) typical level of reliability of the systems and structures and components of the nuclear facility;
- 3) estimated possibility of degradation of systems and structures and components of the nuclear facility during operation and their aging characteristics;
- 4) experience from operation of the nuclear facility.

3. Systems and components of the nuclear facility:

- 1) shall be taken out from service to carry out the activities of maintenance examinations, tests or inspections only upon the consent of authorized operational staff and in accordance with the operational limits and conditions;
- 2) after the performance of activities of maintenance, examinations, tests or inspections, shall not be returned to service without the documented verification of their configuration, and in justified cases, without the execution of a functional test.

§ 39. 1. After the occurrence of any deviation from normal operation, the capabilities of performing safety functions and structural integrity of all systems and structures and components of the nuclear facility, which have been exposed to risk of damage as the result of this occurrence, shall be subject to re-assessment and, if necessary, these systems or components shall be repaired.

2. Prior to the resumption of operation, after each reactor outage during which the reactor cooling circuit was unsealed or its tightness might have been lost, the leakage tests of the pressure boundary of this circuit shall be conducted.

3. At the end of each inspection cycle [interval] under the program as referred to in § 39, the pressure boundary of the reactor cooling circuit shall be subject to the pressure test.

§ 40. In the case of implementation of organizational modifications which are important for the safe operation of the nuclear facility, descriptions of these modifications shall be submitted to the Agency's President.

§ 41. 1. Design, assessment, inspection and implementation of any modernizations and modifications introduced in the nuclear facility during its operation shall be in accordance with the procedure constituting an element of the integrated management system.

2. Designed modernizations and modifications during the operation of the nuclear facility shall be subject to comprehensive safety analyses by entities independent from entities responsible for the design and implementation of the particular change.

3. Temporary modifications, including the defeat of interlocks, installation of jumpers and lifted leads, shall be marked in the distinct way in the place where they are introduced and in the place from which the nuclear facility is controlled.

4. Nuclear facility's operational staff shall be promptly informed about temporary modifications and their effects for the performance of operation of the nuclear facility.

5. Prior to the re-start of the nuclear facility after the completion of modernizations and modifications, documents important for the performance of operation of the nuclear facility, in particular operational procedures for operators, shall be updated and the nuclear facility's staff shall be trained in so far as to modernization or modification performed.

§ 42. In the organizational entity which possesses a license for operation of the nuclear facility [licensee], it shall be ensured that:

- 1) control room premises, controlling and measuring instruments and control room devices of the nuclear facility are maintained in the proper state in particular by:
 - a) suitable work conditions in the control rooms and communication between the main control room with the local control points in the nuclear facility,
 - b) operational capability of the supplementary control room and reactor shutdown panels and other safety panels located outside the main control room of the nuclear facility,
 - c) minimization of the number of warning signals in the control rooms;
- 2) suitable order and cleanliness is maintained at all work places in the nuclear facility, in particular by removing foreign items, unnecessary materials and faulty equipment, and by legible and distinct marking of premises, devices, and systems and structures and components of the nuclear facility important for ensuring nuclear safety and radiological protection.

§ 43. 1. Operational documentation of the nuclear facility shall comprise in particular:

- 1) design specifications;
- 2) safety analyses and assessments of fire hazards;
- 3) data on the supply of devices and materials;
- 4) as-installed documentation;
- 5) documentation on the structures and components of the nuclear facility delivered by the manufacturers or suppliers;
- 6) commissioning documentation;
- 7) operating procedures;
- 8) data on the operation of the facility (operational reports);

- 9) reports on events and incidents in the nuclear facility;
- 10) registers of amounts and movements of: fissionable and fertile materials, radioactive substances and other special materials and substances;
- 11) documents on the maintenance, testing, surveillance and inspection;
- 12) history and documentation regarding modernizations and modifications of the nuclear facility;
- 13) quality assurance documentation;
- 14) data on qualifications of the employees, staffing of positions, medical examinations and trainings;
- 15) reports concerning water-chemical regime;
- 16) registers of doses received by employees;
- 17) data on the supervision of radiation hazards in the rooms and on the site of the nuclear facility;
- 18) registers of releases of radioactive substances to the environment;
- 19) data from radiological monitoring of the environment;
- 20) data concerning storage and transport of radioactive waste;
- 21) periodic safety analyses.

2. Documents referred to in Section 1 Items 1-4, 7, 9, 12 and 16 and their copies shall be kept in separate rooms, protected against fire and flooding.

§ 44. 1. Experience from the operation of the nuclear facility shall be subject to systematic assessment. It shall refer in particular to extraordinary events in the nuclear facility in order to identify their causes.

2. Where justified, suitable corrective measures shall be taken immediately on the basis of conclusions drawn from the assessment as referred to in Section 1.

3. Information resulting from the examination of events important from the viewpoint of nuclear safety or radiological protection, and also conclusions drawn from this examination shall be submitted to the employees of the nuclear facility.

4. In order to draw conclusions regarding the operation of the nuclear facility, information shall be obtained and assessed with regard to operating experience of other domestic and foreign nuclear facilities, especially those of similar type.

5. In order to detect states, situations or deficiencies which could potentially lead to deviations from the normal operation, assigned employees of the nuclear facility shall conduct appropriate analyses of operating experience so that it shall be possible to take necessary countermeasures to prevent such events.

6. Internal procedures which are applicable in the nuclear facility shall oblige the nuclear facility's employees to notify the head of the organizational entity [licensee] about any events related to nuclear safety or radiological protection and shall also encourage employees to inform about the events which potentially could lead to adverse effects from the viewpoint of nuclear safety or radiological protection.

7. Data on operating experience shall be collected, documented and kept in the manner enabling their easy retrieval and obtaining and performing the evaluation by authorized employees of the nuclear facility.

§ 45. 1. During maintenance, modernization or modification outages of the nuclear facility suitable procedures shall be applied implemented in order to ensure the proper planning, effective maintenance and inspection of works conducted.

2. The procedures as referred to in Section 1 shall take into account in particular the need for:

- 1) a written identification of tasks and scopes of responsibilities and decisive powers of particular employees, including also employees of external contractors;
- 2) a clear identification of interrelations between the employees responsible for maintenance, modernizations and modifications and other employees working both on-site and off-site of the nuclear facility, and the need for keeping the nuclear facility operational staff informed about activities connected with conducted maintenance, modernizations and modifications;
- 3) an optimization of radiological protection, occupational safety and work hygiene issues, and also for limiting the amount of waste and radioactive waste and chemical hazards;
- 4) the performance of comprehensive assessments in order to draw conclusions and lessons-learned to be used for future maintenance, modernizations and modifications.

Chapter 5

Transitional and Final Provisions

§ 46. 1. Until 31 March 2015, the provisions of § 2-5, § 8 Item 9, § 10, § 34, § 36 Section 3, § 37, § 38, § 39 Section 3 and § 41 Section 2 of this Regulation shall not apply in relation to the nuclear facilities which are being operated as of the date of entry into force of this Regulation.

2. Until 31 March 2015, the provisions of § 36 Section 1 shall apply accordingly in relation to the nuclear facilities which are being operated as of the date of entry into force of this Regulation.

3. The provisions of § 17 Section 1 of this Regulation shall not apply in relation to nuclear facilities which are being operated as of the date of entry into force of this Regulation.

§ 47. This Regulation shall enter into force within 14 days from its publication.

Udostępnione angielskie wersje dokumentów sporządzonych w języku polskim nie stanowią oficjalnych tłumaczeń i należy je traktować wyłącznie jako dokumenty pomocnicze.

Dokumenty te nie są przeznaczone do celów komercyjnych.

Jedyną wersją obowiązującą dokumentów jest wersja polska opublikowana w odpowiednim dzienniku urzędowym RP.