Annex 6 to the Govt. Decree No. 118/2011 (VII. 11.)

Nuclear Safety Code

Volume 6

Interim storage of spent nuclear fuel

6.1. INTRODUCTION

6.1.1. Purpose of the regulation

6.1.1.0100. The purpose of this regulation is to lay down the nuclear safety requirements related to design and operation of nuclear facilities providing dry, interim storage of spent nuclear fuel.

6.1.2. Effect of the regulation

6.1.1.0200. The requirements of this regulation shall apply to the design, commissioning and operating lifecycle phases of such nuclear facilities operated or planned to be constructed within the territory of Hungary, which are meant to provide dry, interim storage of spent nuclear fuel.

6.2. NUCLEAR SAFETY REQUIREMENTS FOR DESIGN

6.2.1. General design requirements

6.2.1/A. Fundamental safety functions

6.2.1.0100. The fundamental safety functions are as follows for a spent fuel storage facility:

a) Appropriate technical solutions shall exclude the possibility of chain reaction in the spent fuel in normal operation, anticipated operational occurrences and design basis accidents.

b) The decay heat generated in the spent nuclear fuel shall be reliably removed.

c) Appropriate protection shall be established for the persons staying on the site and for the general public and for the living and non-living environment against the harmful effects of the spent fuel, including the direct and scattered radiation of the spent fuel and potential releases from the spent fuel.

6.2.1.0200.

Safety functions

6.2.1.0300. In order to comply with the safety objectives, all of the safety functions shall be determined that shall be performed by the various systems, structures and components of the interim storage facility.

6.2.1.0400. The safety functions and the systems, structures and components fulfilling these functions shall be classified according to their safety importance.

6.2.1.0410. Classification of systems, structures and components shall be determined by the designer using deterministic methods. During the classification the potential consequences of availability and unavailability of the systems, structures and components during the operational states and accident conditions taken into account in the deterministic safety analysis – especially during anticipated operational occurrences and design basis accidents, shall be considered.

6.2.1.0500. Safety class of compartments, buildings and constituting structures shall be determined according to the fulfilled safety functions and the system component of the lowest class housed therein or connected therewith.

6.2.1.0600. Safety classification shall harmonize with the consequences of a failure or only partial fulfilment of the safety function.

6.2.1.0700. Based on the safety classification, the graded technical and quality requirements for the systems, structures and components important to nuclear safety and for the respective activities shall be specified.

Operational limits and conditions

6.2.1.0800. Based on the design of the interim storage facility and the nuclear safety assessment thereof, the preliminary limits and conditions on the operational parameters of the nuclear facility shall be determined. Furthermore, those requirements for the systems, structures and components important to nuclear safety and for the employees and activities shall be specified, which are necessary to prevent any situation leading to incidental or accidental circumstances.

6.2.1.0900. Operational limits and conditions shall be determined for normal operation, anticipated operational occurrences and design basis accidents in such a way that an appropriate margin for the intervention shall be ensured in the safety limits and conditions to prevent any anticipated operational occurrence, design basis or beyond design basis accident.

6.2.1.0910.The operational limits and conditions shall be determined as follows:

a) safety limits,

b) activation limits of nuclear safety systems, or

c) normal operational limits and conditions.

6.2.1.1000. Any deviation from the normal operation of systems, structures and

components of the nuclear facility shall be timely detected by the employees, the necessary interventions shall be carried out before the parameters could reach the limits and conditions pertaining to the design basis and beyond design basis accidents.

6.2.1.1100. Requirements for the acceptance, management and retrieval of fuel assemblies shall be determined. In determination of the requirements on acceptance, the storage conditions, potential mechanical and material structure changes of the fuel assemblies during storage shall be taken into account and the following shall be ensured:

a) suitability of the fuel assemblies for further management, and

b) harmony of the requirements with the safety analysis report of the facility.

6.2.1.1200. Requirements for the minimum operational and backup configuration and state of systems, structures and components fulfilling safety functions and the criteria for operability of systems, structures and components shall be determined on the basis of limits and conditions for normal operation. Activities required to be carried out by the workers in response to such deviations shall also be specified.

6.2.1.1210. Such limits shall be determined as part of the Operational Limits and Conditions, which are not exceeded by actual values of parameters characterizing the technology processes of the operation of the interim storage facility.

6.2.1.1220.The Operational Limits and Conditions shall be specified in such a way to allow interventions between the normal operational values and those actuating systems important to nuclear safety by taking the transient behaviour of the system, the delay and settling times, as well as the uncertainties of the measurement instruments into account.

6.2.1.1230. In order to bring the nuclear facility to a safer state, instructions shall be developed for those cases when the interim storage facility exceeds the Operational Limits and Conditions. The permissible time limits for carrying out such measures shall be specified.

6.2.1.1300. Maximum allowed length of inoperability, cycle times of functional testing and inspections of systems, structures and components important to nuclear safety shall be determined. For the determination of the cycle period, the balance between the risks caused by the maintenance activity and the increase of reliability achievable by the maintenance shall be taken into account.

6.2.1.1310. The requirements for the availability of systems, components and structures important to nuclear safety shall be determined for normal operation.

6.2.1.1320. The exceedance of the Operational Limits and Conditions when carrying out modifications and tests shall be limited to the extent verified and

approved in the safety analysis substantiating the modification.

6.2.1.1400. Necessary number and tasks of employees being in service in the various operational states and accident conditions – including the operating personnel – shall be determined by considering that they shall be able to perform the necessary actions in design basis accidents and accidents.

6.2.1.1500. The documents of the Operational Limits and Conditions shall be available for the operating personnel. The operating personnel shall have a high level of knowledge of the contents of these documents, as well as the technical reasons of the requirements. The operational decision makers shall be aware of the significance of the Operational Limits and Conditions to the safety of the interim storage facility.

6.2.1.1510. The process of the modification, revision or temporary modification of the Operational Limits and Conditions shall be established. The substantiation of the modifications shall be justified by safety analysis.

Basic design requirements

6.2.1.1600. The interim storage facility shall be designed so to comply with the design requirements derived both from the site characteristics determined during site selection and from the particular technical features of the nuclear facility. Availability of all the functions required for the safe operation shall be ensured on the site of the interim storage facility and the systems, structures and components important to nuclear safety can perform the intended safety function for the management of the given initiating event.

6.2.1.1610. The systems, structures and components important to nuclear safety shall be designed to ensure that the general nuclear safety objectives, and the radiation protection and technical safety objectives set for the application of the nuclear facility can be realized. The design of the nuclear facility shall ensure that the nuclear safety of the nuclear facility can be maintained during the occurrence of hazards and hazard factors considered in the design basis by inherent design safety features.

6.2.1.1700. The systems, structures and components of the nuclear facility shall be designed according to their safety and seismic-safety class and according to the classes of the selected design standard, by the application of a graded approach with respect to safety importance.

6.2.1.1710. Fulfilment of the safety functions of systems, structures and components important to nuclear safety shall not be disturbed or impaired by any other non-safety function, or the planned or unplanned operation of any non-safety classified system.

6.2.1.1800. In the design of systems, structures and components the loads and load combinations shall be determined based on those circumstances and effects

under which the systems, structures and components shall fulfil their safety functions. Safety and seismic safety class of the component shall be considered during this process. The particular load combinations in the design specification shall be determined based on the concurrence and importance of the loads.

6.2.1.1900. The design shall be carried out in line with the requirements of such recognized laws, guidelines and standards, which are applicable to ensure a high level of operability and reliability of systems, structures and components important to nuclear safety.

6.2.1.1910. Concerning systems, structures and components for which there are no appropriate requirements or standards, such approach can be used that originates from existing requirements and standards applied for similar equipment. In the lack of such requirements or standards, experience from practice, tests – including tests in experimental facilities, analysis, expert body recommendations or from the combination of these can be applied. Their application shall be justified.

6.2.1.2000. The design of the interim storage facility shall ensure maximum tolerance against potential failures. After any initiating event the following sequence shall be considered to the extent reasonably achievable:

a) a failure or false intervention – especially the placement of a spent fuel assembly to a wrong position, shall not lead to significant transient or it shall induce only such changes in the condition of the interim storage facility, which result in safer circumstances;

b) following a failure or false intervention, the interim storage facility shall remain in safe condition via actuation of continuously available passive instruments or design protection;

c) following a failure or false intervention, the interim storage facility shall remain in safe condition via active protections actuated as necessary after the occurrence of the failure.

6.2.1.2100. All possible hazards and hazard factors of external and internal origin that can affect the interim storage facility shall be analyzed and evaluated. It shall be assumed about the hazards and hazard factors that they occur under the most unfavourable normal service, anticipated operational occurrence or design basis accident conditions of the interim storage facility. The analysis shall take into account:

a) reasonably assumable combination of various, simultaneously occurring hazards and hazard factors, and

b) that a specific hazard or hazard factor occurs when a failure exists or maintenance is taking place.

6.2.1.2110. It shall be demonstrated that all potential hazards and hazard factors

adequately comply with the requirements of the design specifications in accordance with the design, analysis and probabilistic principles. Only those hazards and hazard factors can be ruled out without any further assessment, about which it can be demonstrated that it doesn't affect adversely the safety of the interim storage facility.

6.2.1.2200. Site specific data shall be used in determination of the severity of hazards and hazard factors. If such data is not available, justified conservative data shall be applied.

6.2.1.2210. Stability and changes of external factors affecting the nuclear safety of the interim storage facility shall be forecasted for the whole lifespan of the nuclear facility.

6.2.1.2300. In design stage, in order to comply with the nuclear safety objectives determined as part of design basis of the interim storage facility

a) the sub-critical state of the spent fuel, including damaged fuel, shall be ensured all the time based on data on geometry and material properties, initial enrichment and burn-up level of the fuel during normal operation, anticipated operational occurrences and design basis accidents, considering the variations caused by deviations in manufacturing and loading of fuel, errors of calculation data, installed absorber structures, possible movement, degradation and change of spent fuel during long term storage;

b) thermal properties of the interim storage facility shall ensure that disturbances in the flow of coolant do not cause large either fast temperature changes or not allowed changes in the physical state of coolant medium and material of the fuel assemblies; and

c) those limits of the parameters important to safety shall be specified, the exceedance of which cause increased loads on the physical barrier used to confine releases.

6.2.1.2400. Physical barriers shall support the compliance with the principle of defence-in-depth. The fuel matrix, cladding of spent fuel, structure of storage units of the interim storage facility, such as the storage tube and container, and the building structure can be taken into account as release retention barrier.

6.2.1.2410. It shall be ensured for normal operation, anticipated operational occurrences and design basis accident for all operations and for the entire lifetime that the cladding of the spent fuel will not lose leak tightness.

6.2.1.2500. Adequacy of the design procedures and solutions shall be demonstrated.

6.2.1.2600. New constructions without reference shall only be applied if their design is supported by appropriate research and development results and it is

demonstrated that the system, structure or component can be operated safely. These systems, structures and components shall be tested before commissioning and regularly inspected during operation with special attention to their features lacking reference.

6.2.1.2700. The principle of independence shall also be applied for the separation of systems, structures and components of normal operation and systems, structures and components with safety function, and also between systems, structures and component with safety function.

6.2.1.2800.

6.2.1.2900. The following expectations shall be taken into account in the design of systems, structures and components important to nuclear safety:

a) application of proven design methods and faultless design concept;

b) use of structural materials that proved their applicability in the nuclear industry;

c) application of standards accepted by the nuclear industry in all phases of design and also in the purchase, fabrication, assembly and operation;

d) performance of pre-service and in-service inspections to reveal any operational activity that deviates from the designed or planned operation; and

e) appropriate preparation and implementation of material and equipment tests.

6.2.1.3000. It shall be demonstrated that the system component affecting nuclear safety is flawless or that potential failures can be detected through in-service inspection or by testing methods and that these failures can be managed.

6.2.1.3100. Ductility of structural materials of pressure retaining components or piping shall be adequate for the load.

6.2.1.3200. Those postulated initiating events shall be listed, which shall cover all such events, which may influence the nuclear safety of the interim storage facility. The group of events for the design basis shall be selected from the list by deterministic or probabilistic methods or by their combination. The group shall be used to compile that basic data set, for which systems, structures and components important to nuclear safety shall be designed. The data shall be used to demonstrate that the required safety functions are fulfilled and safety objectives are met.

6.2.1.3300. All realistic combination of hazards and hazard factors having external and internal origin that may lead to anticipated operational occurrence or design basis accident shall be taken into account in the design. Selection of

combinations can be based on deterministic or probabilistic safety assessments.

Seismic safety requirements

6.2.1.3400. The design basis earthquake shall be taken into account in the design of the interim storage facility. The total exceedance probability of the design basis earthquake for the whole lifetime shall not exceed 5×10^{-3}.

6.2.1.3500. The interim storage facility shall be designed so that basic safety functions are fulfilled during the design basis earthquake. In this case the interim storage facility is said to be earthquake-resistant.

6.2.1.3600. Circumstances beyond design basis earthquakes and their consequences are covered by the category of severe accidents. The analysis of severe accidents is a subject to safety analysis.

6.2.1.3700. It shall be ensured by design that exceedance of horizontal peak ground or spectral accelerations of the design basis earthquake does not cause immediate failure and loss of function.

6.2.1.3800. That earthquake shall be determined at which operations with the fuel assemblies shall be suspended and subsequently to the earthquake operations can be continued. If such an earthquake occurs that is larger than that specified above but smaller than the design basis earthquake, then revision and necessary recovery operations shall be performed. The interim storage facility shall be designed so that acceptance and loading out of the fuel assemblies can be suspended and then subsequently to the earthquake can be continued if an operation basis level earthquake occurs.

6.2.1.3900. The systems, structures and components of the interim storage facility shall be classified into three seismic safety classes and one non seismic safety class according to their function to be fulfilled during the earthquake.

6.2.1.3910. Those active systems, structures and components shall be in Safety Class 1 and those passive systems, structures and components shall be in Seismic Safety Class 2 that are required for keeping the interim storage facility in a subcritical state, cooling and are essential for monitoring the critical parameters or ensuring that radioactive releases remain under the regulatory limits.

6.2.1.3920. Buildings having a safety function or their building structures shall be included in Seismic Safety Class 2.

6.2.1.3930. Systems, structures and components that are not in Seismic Safety Class 1 or 2, jeopardise the function of system components included in Classes 1 and 2 through their possible damage arising as a result of an earthquake and the effects triggered shall belong to Seismic Safety Class 3. Considering the quantity of radioactive materials stored and the potential consequences of a failure, those systems, structures and system components shall be in Seismic Safety Class 3 for

which seismic resistance is important.

6.2.1.3940. System components that do not belong to any of the three earthquake safety classes shall belong to Non-seismic Safety Class 4.

6.2.1.4000. If the horizontal peak ground acceleration of the operation basis earthquake is bigger than one-third of the horizontal peak ground acceleration of the design basis earthquake, then it shall be investigated if the nuclear facility complies with seismic-resistance requirements for operational basis earthquakes.

6.2.1.4100. The design shall ensure that safety functions and requirements for the interim storage facility are fulfilled throughout the lifetime, until the fuel assemblies are not removed, even during and after an earthquake.

6.2.1.4200. The interim storage facility shall be designed and equipped with seismic sensors and registers, which records the structural acceleration-response time signals induced by the quakes at designated locations of the nuclear facility for post-event analysis and provides indication for the control room personnel. The earthquake indicator end registration system shall fit the protection system with respect to redundancy, number of channels and reliability. It is not mandatory to construct individual earthquake instrumentation if the data required for the assessment of the impact of the earthquake can be obtained by other means.

6.2.1.4300. The evaluation of the compliance of system components shall cover the verification of stresses, deformations, displacements and operability.

6.2.1.4400. Based on international experiences, the seismic safety review and planning of safety improvement measures in an operating interim storage facility may differ from the procedure followed in the course of qualification of new nuclear facilities.

6.2.1.4500. Methods proven and accepted in the international practice shall be applied in the seismic safety review of an operating interim storage facility.

6.2.1.4510. Systems components important to nuclear safety shall be so designed, fabricated, and qualified for environmental loads and earthquakes and reveal their degradation mechanisms during qualification, and maintained during operation to provide that their quality and reliability are appropriate and are in harmony with their classification following the degradations assumed during operation.

Requirements for reliability

6.2.1.4600. Requirements for the reliability of systems, structures and components important to nuclear safety as well as the design solutions ensuring the compliance with these requirements shall be determined. These design solutions shall be redundancy, diversity, independence, flawless design and self-

checking.

6.2.1.4700. If any of the initiating events of the design basis occurs, the systems, structures and components important to nuclear safety, shall still be able to fulfil their functions even if a single failure is assumed, unless it can be demonstrated that the loss of function does not result in exceedance of the criteria specified for the given event.

6.2.1.4710. Functional and physical separation of the redundant system components of safety classified systems, especially of the auxiliary system and electric power supply shall be ensured from all aspect of fulfillment of the function.

6.2.1.4800. Is shall be ensured by design that the systems and system components important to nuclear safety can be taken out of service. Effect of anticipated maintenance, functional testing and repair of each system and system component important to nuclear safety on the reliability shall be considered.

6.2.1.4900. A failure, an internal or external hazard or a hazard factor shall not cause inoperability of that system or system component important to nuclear safety, which is intended to respond to the given event.

6.2.1.5000. Where such system or system component important to nuclear safety is applied, the reliability of which is primarily determined by a computer program, then appropriate technical solutions and standards shall be used during its development and whole lifecycle, and the compliance with these solutions and standards shall be demonstrated through the following considerations:

a) total application of technical designer practice consistent with accepted standards during the development of the computer program determining the operation of a system or system component important to nuclear safety;

b) control program and control plan operated based on appropriate control standards;

c) verification of the last, validated program version by a group that is independent of the developer; and

d) implementation of a wide scope test program qualified by independent technical expert, which involved the verification of all the system functions and which can demonstrate the reliability of the system.

6.2.1.5010. Programmable systems used in a safety system, beyond the general requirements relevant for similar systems, shall comply with the following requirements:

a) hardware and software tools of sufficient quality and with references shall be applied,

b) the whole development process, including verification, testing and putting into use of design changes shall be systematically documented and evaluated,

c) in order to demonstrate their reliability the computer based systems shall be reviewed by technical experts, who shall be independent of the designer and the vendor,

d) if the necessary level of reliability of a system cannot be demonstrated, diverse means shall be provided to fulfil the assigned protection function.

Human factor

6.2.1.5100. Human factor and human-machine interface shall be kept in view consistently throughout the design process.

6.2.1.5200. Principles of ergonomics shall be observed in the design of working areas and working environment of the workers.

6.2.1.5300. The design shall ensure that duly trained workers are able to effectively and successfully intervene in the assumed physical environment and psychical conditions within the scheduled timeframes. Demands for short time, e.g. within few minutes, interventions shall be reduced to the minimum.

6.2.1.5400. Tasks of the workers for the fulfilment of the safety functions shall be determined in the design process. This determination shall cover: management of normal operation, anticipated operational occurrences and design basis accidents and emergency response activities, periodic in-service inspection of the interim storage facility, tasks of the workers performing the inspections, trouble-shooting, and the definition of the tasks of workers performing maintenance, testing and calibration activities.

6.2.1.5410. All requirements influencing the human factor shall be considered in the design, including the human-machine interface. Tasks, systems and system components shall be designed to provide as simple as possible process for training of workers to perform the tasks and to develop the operational procedures. During the planning of operational tasks and in the determination of the operational procedures regulating the performance of the task, the circumstances of execution and the requirements for the worker who executes the task shall be considered.

6.2.1.5420. Displays of the process variables functionally connecting to each other and the status indicators of control devices of such parameters shall be placed in groups by taking into account the requirements for functionality, reliable handling and ergonomics. Signals providing information shall be linked with visual and, as necessary, audio signals.

6.2.1.5430. Adequacy of the documents describing operator interventions

corresponding to safety of the interim storage facility shall be demonstrated.

6.2.1.5500. The effect of human relations on the activity of workers and those staying on the site of the interim storage facility, first of all the effect of subordinations, cooperation and communication, shall be evaluated during the design. These aspects shall be taken into account for the determination of the composition of and requirements for the workers staying on the site of the interim storage facility. It shall be ensured that the workers are not able to prevent any safety actuation, but are able to timely implement the necessary and anticipated interventions. It shall be ensured that the workers cannot block automatic safety activations, but are able to timely implement the necessary and anticipated interventions.

Civil structures

6.2.1.5600. Placement, purpose, functions and main structural components of the civil structures shall be designed by considering the anticipated environmental impacts. Civil structures shall comply with the requirements connected to the properties of spent fuel and radioactive materials, and to the necessity of biological shielding.

6.2.1.5700. Loads originating from their functions shall be considered during the placement and structural design of buildings and civil structures. The interaction of loads, their effects on the environmental, life and nuclear safety and on protection of assets shall also be taken into account.

6.2.1.5800. It shall be demonstrated that the buildings and civil structures are able to withstand those loads, which expose them during normal service, anticipated operational occurrences and design basis accidents. Model analysis shall also be performed if necessary.

6.2.1.5900. Possibility of periodic inspection of structures providing protection against internal and external flooding shall be ensured.

6.2.1.6000. Analysis of civil structures for the loads originating from the movement of soil induced by design basis earthquake shall be performed. The methodology and complexity of the analysis shall conform to the risk of the nuclear facility and, within that, safety and seismic-safety classification of the structure, function of the structure and intended use of calculation results.

6.2.1.6100. Soil-building interactions shall be analyzed depending on the construction. Embedment of the building, depth and layers of the soil, its dynamic properties and the uncertainties of these factors shall be managed during modelling.

6.2.1.6200. Compliance with the limits related to displacements and deformations that can be derived from the constructional design of the structure

shall be evaluated.

6.2.1.6300. The earthworks shall be designed by taking into account the vibration from the design basis earthquake of the nuclear facility.

6.2.1.6400. Design basis earthquake shall not cause global soil liquefaction with high confidence. The possibility of local soil liquefaction is acceptable if its probability for the whole lifetime of the facility does not exceed 5×10^{-3} and if, with high confidence level, it does not cause such relative displacement, which would impair the proper fulfilment of safety functions.

Structural materials

6.2.1.6500. Requirements for the structural materials shall be determined during design. Regarding systems, structures and components important to nuclear safety only such materials shall be used, the properties of which can be determined or estimated for the entire lifetime of the interim storage facility.

6.2.1.6600. The materials of systems, structures and components important to nuclear safety shall be selected by taking into account the conditions during normal service, anticipated operational occurrences and design basis accidents, and it shall be demonstrated already during the design stage that the selected materials do not hinder the systems and system components in fulfilling their function under the specific environmental conditions.

6.2.1.6700. Ageing processes shall be taken into account in the selection of the structural materials of systems, structures and components important to nuclear safety. It shall be demonstrated that the selected structural material, considering the ageing processes, the original state and the possible uncertainties of the ageing processes, makes the fulfilment of the safety function possible throughout the design lifetime.

6.2.1.6800. In the selection of structural materials of systems, structures and components, the following properties shall be considered in accordance with the intended function:

a) the physical-mechanical properties, composition in line with the scope according to the requirements identified during the design stage, structural, strength and other material properties at the environmental and design temperature;

b) processing requirements, within that the application dependent ductility and welding properties;

c) requirements for reliable operability,

d) design lifetime, including consideration of ageing processes;

e) constructional features, compatibility of contacting structural materials;

f) requirement for opportunity of implementation of scheduled in-service inspections and tests, repairs and replacements;

g) characteristics of the technical process; and

h) environmental parameters.

6.2.1.6900. During the design of systems, structures and components important to nuclear safety the change of material properties of structural materials due to ageing effects shall be evaluated according to a methodology and criteria accepted by the nuclear safety authority.

6.2.1.7000. Requirements related to the properties, composition, and cleanliness of structural materials and medium applied, as well as the inert gas surrounding the fuel assembly shall be defined in a manner that their properties do not degrade when interacting with other components of the process or when exposed to radioactive radiation, and are able to withstand all impacts resulting from wearing out. The existence of appropriate physical and chemical properties shall be monitored at all times, and care shall be taken so that these are kept within limits.

6.2.1.7100. The structural material of those parts of the interim storage facility which may contact fuel assemblies shall be compatible with the structural material of the fuel. The nuclear facility shall be designed to prevent the contamination of fuel assemblies.

6.2.1.7200. Compatibility of the storage medium used in the interim storage facility and structural material of the fuel shall be ensured. The process of drying of fuel removed from wet storage, and its possible re-wetting shall also be taken into account.

6.2.1.7300. Systems, structures and components and tools exposed to radioactive radiation shall be designed of such material that facilitates decontamination or shall be covered with easy decontamination coating.

6.2.1.7400. If system components of the interim storage facility are made with decontamination coating, the endurance, radiation-resistance and compliance with the applied decontamination method shall be ensured.

6.2.1.7500. The materials to be applied shall be selected taking account of the following aspects with regard to the design lifetime of the interim storage facility:

a) long term storage in the nuclear facility;

b) ability to resist the chemicals used in the nuclear facility;

c) wear resistance that ensures the appropriate decontamination even at the end of design lifetime, and

d) the shortest possible half-life of the materials activated during operation with consideration to the scheduled decommissioning of the facility.

6.2.1.7510. Beyond the requirements above, the application of such structural materials shall be considered during the design of systems and system components important to nuclear safety:

a) which are proven and whose compliance is demonstrated;

b) the properties of which are known and approach the design limit with an appropriate safety margin;

c) which, if subjected to radioactive irradiation, are not susceptible to activation and their structure is such that the activated particles remain in the place of generation;

d) which provide for such surface finishing, which can be decontaminated to the extent possible during operation and decommissioning termination; and

e) which are fire resistant.

Arrangement

6.2.1.7600. Concerning an interim storage facility operating on a site that is in the vicinity of a nuclear power plant, the interaction of the interim storage facility and the power plant shall be taken into account in the safety analysis report of the interim storage facility. The compliance with the requirements related to the interim storage facility shall be demonstrated by taking account of the potential effects of the power plant and common usage and decommissioning of potentially shared systems.

6.2.1.7700. The systems, structures and components important to nuclear safety shall be designed to minimize the effect of internal and external hazards and hazard factors and the interaction of failed systems, structures and components.

6.2.1.7800. The buildings and the infrastructure shall be arranged at the site so that the following requirements shall be met within the site during normal service, anticipated operational occurrences, design basis accidents and occurrence of any internal, external hazard or hazard factor or failure:

a) alternative options shall be available for checking the areas significant from the viewpoint of safety for interventions;

b) alternative access to personnel rescue equipment shall be available in the areas with normal access, and shall be ensured in the areas potentially affected by design basis accidents;

c) the reasonable physical protection of site personnel shall be ensured against the direct or indirect impact of normal operation, anticipated operational occurrences and design basis accidents.

Qualification of system components

6.2.1.7900. In the design stage it shall be determined by system analysis for the scope of systems and system components important to nuclear safety that which systems and system components require the development of a qualification programme to ensure that they are able to comply with the requirements for the fulfilment of their safety function throughout their lifetime under the environmental conditions appearing at the time of demand of their activation.

6.2.1.8000. The scope of systems and system components playing a role in accident management and mitigation of consequences shall be determined. The qualification procedure of these systems and components shall be developed and implemented for the most extreme circumstance assumable during the accident.

6.2.1.8100. Testing, analysis and operating experience and combination thereof can be applied for the qualification of system components. In the selection of the method priority shall be given to testing, where possible.

6.2.1.8110. In the selection of the qualification procedures the environmental impacts and parameters at the location of installation of the system component shall be taken into account. That lifetime while the safety functions can be fulfilled under the expected operating and even accident conditions shall be determined for the system component designed or selected for the known environmental conditions. A mild environment can be taken into account from the aspect of qualification if the environmental conditions and parameters in normal operation do not change significantly, while harsh environment shall be taken into account of the environmental impacts and parameters in accident conditions substantially differs from those in normal operation.

6.2.1.8200. Seismic resistance of system components in seismic safety classes shall be qualified by analysis, testing, operating experience or by the combination thereof considering the effect of the design basis earthquake at the location of its installation.

6.2.1.8300. The qualification programme shall contain all those activities, which are necessary for the establishment and in-service sustention of the qualified state.

6.2.1.8400. The environmental conditions to be considered in the qualification process shall include those environmental circumstances induced by the hazards and hazard factors that were taken into account during the design. The specific service conditions and their ageing effect during normal service, anticipated operational occurrences and design basis accidents shall also be considered. Uncertainties from the fabrication and the qualification process shall also be taken into account during the qualification process of system components, in the

definition of the environmental conditions.

6.2.1.8500. Besides the safety classification and environmental parameters at the location of installation, the sensitivity of materials of the system component to changes of parameters shall also be taken into account during the determination of various levels of requirements in the qualification programme of system components.

Maintenance, surveillance and in-service inspection

6.2.1.8600. The design of the systems, structures and components of the interim storage facility shall support the practical implementation of reviews, inspections, maintenance, modification and repair and replacement throughout the lifetime of the facility.

6.2.1.8700. Functional tests and inspections of systems, structures and components shall be performed in order to maintain their reliability, structural integrity, leaktightness and to implement the in-service inspection programme in order to determine the effect of radiation, mechanical, thermal and chemical loads and to obtain information about ageing of structural materials.

6.2.1.8800. The frequency and performance requirements and conditions for functional testing, maintenance and inspection of systems and system components important to nuclear safety shall be determined to be conform to the safety class of the system and component important to nuclear safety.

6.2.1.8900. Type examination shall be carried out for systems and components important to nuclear safety under at least such circumstances, which are conform to the most adverse conditions during normal service, anticipated operational occurrences and design basis accidents. If experimental demonstration of component availability is not possible under the most extreme circumstances, then compliance shall be demonstrated by individual examination or reference data.

6.2.1.9000. Such maintenance, repair and ageing management programme shall be developed for systems, structures and components that takes into account the designer and manufacturer requirements and covers inspection, component repair and replacement, revision and general maintenance, replacement, testing and adjustment activities.

6.2.1.9010. The technical maintenance of systems, structures, components shall be performed in such a way, extent and with such frequency, which guarantees that their reliability and effectiveness complies with the design values, and excludes degradation of the safety during their operation.

6.2.1.9020. The list of systems and components covered by the preventive maintenance programme shall be compiled by taking account of their safety

classification; it shall be revised, if appropriate.

6.2.1.9030. The requirements for the frequency and scope of preventive maintenance shall be regularly updated and modified if appropriate during the operation, based on the safety classification, manufacturer requirements, and the analysis of operational experience and failures.

6.2.1.9040, The development of the preventive maintenance strategy shall take account of the design and expected service life of systems and components.

Commissioning and in-service inspection and testing programme shall be developed and implemented for the systems, structures and components important to nuclear safety.

6.2.1.9110. The inspection and testing programme shall be compiled based on the nuclear safety classification of systems, structures and components, and on the analysis of potential failures.

6.2.1.9200. Evaluation criteria of inspection and test results shall be established by taking into account designer requirements and standards.

6.2.1.9300. The inspection and testing programme shall cover visual and instrumental inspection of technical conditions and application of non-destructive and destructive material testing that takes into account the construction and continuous development of material testing methods.

Ageing management

6.2.1.9400. An ageing management system shall be developed and operated throughout the lifetime of the interim storage facility; the system shall harmonize with the maintenance processes and qualification procedures of system components.

6.2.1.9500. Anticipated ageing process and their effect shall be assessed during the design of systems and system components important to nuclear safety. It shall be verified that ageing processes of selected materials, considering uncertainties of the original status and ageing processes, do not impair the systems and system components in fulfilling their functions throughout the design lifetime.

6.2.1.9600. Effects of normal service, anticipated operational occurrences and design basis accidents shall be considered during the design of systems, structures and components important to nuclear safety.

6.2.1.9610. The licensee shall take into account environmental conditions, conditions of processes, service cycles, maintenance plans, design service life, schedule of tests and the spare part management strategy during the establishment and operation of the ageing management programme.

6.2.1.9700. Unambiguous service indicators, performance criteria shall be developed to determine the usage, allowed conditions and duration of operation

of systems, structures and components important to nuclear safety.

6.2.1.9800. Designer requirements for ageing management shall be developed for systems, structures and components important to nuclear safety. The requirements shall address:

a) identification of ageing locations and ageing processes of systems, structures and components important to nuclear safety;

b) estimation of anticipated progress of ageing processes;

c) maintenance, surveillance, testing and monitoring activities necessary for management of ageing processes during operation; and

d) determination of measures to slow down and reduce the ageing and degradation process.

Lifetime

6.2.1.9900. The design lifetime of the nuclear facility shall be determined during the design of the interim storage facility. The service life of irreplaceable systems, structures and components shall be at least as long as the design lifetime of the nuclear facility.

6.2.1.10000. The allowed service lifetime of the systems, structures and components important to nuclear safety, in particular those that cannot be replaced or can be replaced with difficulty, shall be analyzed, evaluated and determined already during the design stage. Unambiguous service indicators and performance criteria shall be developed to determine usage, allowed conditions and duration of operation of such systems, structures and components.

Capacity of the interim storage facility and unloading of fuel assemblies from the interim storage facility.

6.2.1.10100. In order to safely manage and store the fuel assemblies a reserve storage capacity required to be ensured and maintained to fulfil the determined safety functions during normal service, anticipated operational occurrences and design basis accidents shall be determined based on the safety analysis of the interim storage facility.

6.2.1.10200. The interim storage facility shall be designed in such a way that does not exclude application of other acknowledged further storage, transport and final disposal solutions.

6.2.1.10300. The design of the interim storage facility shall ensure that radioactive radiation exposure to the persons on the site of the facility, the population and the environment is as low as reasonably achievable also during unloading of fuel assemblies.

6.2.1.10400. The design of the interim storage facility shall ensure that the conditions of structures and parts of the fuel assemblies make possible the

planned movement of the assemblies within appropriate time at the end of the storage and at any time when it could be necessary. It shall be ensured that the fuel assemblies are retrievable from the interim storage facility by means of installed, service systems and components even after anticipated operational occurrences and design basis accidents. If it cannot be required for the structural elements of fuel assemblies, the placement of assemblies into such protection tubes or barrel shall be ensured, which are able to withstand the potential mechanical loads and confine any potential leakage from spent fuel to the environment.

Fire protection

6.2.1.10500. In the design of the spent nuclear fuel interim storage facility the relevant fire protection laws and technical requirements shall also be complied with. The requirements of the law on application and method of enforcement of special fire protection rules and requirements corresponding to use of atomic energy and respective activity of the authorities shall be taken into account during design.

6.2.1.10600. Such systems, structures and components shall be designed for the operation of the interim storage facility that ensure timely detection of any potential fire or explosion and mitigation of its consequences.

6.2.1.10700. During the installation of systems, structures and components the physical separation of the systems, structures and components important to nuclear safety shall ensure the ineffectiveness of the consequences of a fire or explosion should such an event occur on the redundant systems, structures and component, or on other systems, structures and components important to nuclear safety.

6.2.1.10800. Considering the effect of a fire or explosion, the concerned process systems and the risk of fire-fighting, the equipment to detect fire or explosion shall be designed to automatically provide warning signal for the workers to be able to perform the necessary protection measures.

6.2.1.10900. In the case of inflammable solid and liquid wastes, the conditions of effective fire alarm and fire-fighting shall be established in such a way that prevents, to the extent possible, any release of the radioactive materials contained in the system during the fire and fire-fighting.

6.2.1.11000. The consequences of the fire and fire-fighting, as well as the way how the generated waste can be collected shall be taken into account in the design.

6.2.2. Process design requirements

Design requirements for sub-criticality

6.2.2.0100. Sub-criticality shall be 0.05 ($k_{eff} \leq 0.95$) as a minimum during normal service, anticipated operational occurrences and design basis accidents, taking into account calculation uncertainties, fabrication tolerances, geometry and material composition of the storage system, and the changes of material composition due to radioactive decay.

6.2.2.0200. Appropriate design solution shall exclude

a) that any unplanned movement of any component of the interim storage facility or the fuel assemblies could cause failure entailing the increase of reactivity;

b) that faulty placement or removal of fuel assemblies or any structural component of the interim storage facility could increase the reactivity in such an extent that is greater than the value including uncertainty factor required for sub-criticality.

6.2.2.0210. Every possible form of heat generation and heat transfer shall be characterized qualitatively and quantitatively with due considerations of the uncertainties.

Design requirement for cooling of spent fuel

6.2.2.0300. In order to sufficiently and reliably cool the spent fuel, heat removal shall be ensured by passive systems requiring minimum maintenance. Appropriate design shall exclude that any unplanned movement, deformation of any component of the interim storage facility could cause a failure entailing a loss of coolant. Compliance with cooling requirements shall be demonstrated for normal service, anticipated operational occurrences and design basis accidents.

6.2.2.0400. Heat removal of the interim storage facility shall be design so that the system can transfer the generated heat

a) throughout the lifetime of the interim storage facility;

b) continuously and reliably;

c) under any weather condition considered in the design;

d) even if a single failure of the installed active systems occurs; and

e) during normal service, anticipated operational occurrences and design basis accidents

to the environment, irrespective of the accessibility of the interim storage facility or availability of external resources.

6.2.2.0500. Adequate heat removal shall be ensured even if the heat transfer conditions change adversely in order to prevent damage of the spent fuel and the nuclear facility during normal service, anticipated operational occurrences and design basis accidents. In the determination of heat removal margins

uncertainties existing in calculation methods and input data shall be taken into account.

6.2.2.0600. The design shall exclude such a change of the fuel assembly orientation, geometry that could adversely affect the heat transfer process or obstruct retrieval of the fuel assemblies from their storage positions.

6.2.2.0700. Thermal-hydraulic analysis of the interim storage facility shall demonstrate that such a loss of cooling during normal service, anticipated operational occurrences and design basis accidents could not occur which could cause unallowable increase of the temperature of the spent fuel.

6.2.2.0800. Reliable measurements of the heat generated in the interim storage facility shall be designed. If this is not reasonably achievable due to the features of the technical system, then an appropriate calculation method shall be applied.

Requirements for construction of the interim storage facility

6.2.2.0900. Civil engineering design and construction of process systems of the interim storage facility shall ensure that any displacement caused by design basis earthquake could not cause damage to systems or components important to nuclear safety.

6.2.2.1000. The design objective is to avoid any failure of the fuel assemblies during normal service, anticipated operational occurrences and design basis accidents and to maintain the cooling ability of the fuel. In order to duly consider these objectives the temperature limits for the storage of spent fuel shall be determined with sufficient safety margins.

6.2.2.1100. The gas environment shall be supervised and made-up as necessary if the storage of fuel assemblies takes place in inert gas medium.

6.2.2.1200. Depending on the technical solutions applied in the interim storage facility, the safe temporary placement of the fuel assemblies shall be provided before inserting to and after retrieval from the storage tube.

6.2.2.1300. The overpressure building up in the hermetically closed storage tubes filled with protective gas shall be determined conservatively in such a way that avoids damage of the fuel assemblies.

6.2.2.1400. Possibility of radiolysis and its potential consequences shall be taken into account during the design of the interim storage facility.

6.2.2.1500. Adequate lighting shall be ensured in the interim storage facility, especially for the operations with the fuel assemblies demanding visual control.

6.2.2.1510. Instruments shall be ensured to monitor the conditions of the fuel assemblies during the storage.

Requirements for fuel management and fuel movement systems

6.2.2.1600. The appropriate design of nuclear fuel management and movement systems shall ensure that the spent fuel operations are safe, and nuclear fuel, storage and transfer devices are not damaged during normal service, anticipated operational occurrences and design basis accidents.

6.2.2.1700. Should the individual movement of fuel elements become necessary at the interim storage facility, measures shall be taken to prevent the fuel from being dropped. The appropriate design of the rooms, equipment and building structures shall ensure that the fuel element is not damaged by an incident to such an extent which would result in a deformation preventing placement in the storage or shipping structure.

6.2.2.1800. If fuel elements are moved in groups in the interim storage facility, the sizing of the applied support structure shall ensure that the leaktightness of the fuel assemblies is not damaged during normal service, anticipated operational occurrences and design basis accidents.

6.2.2.1900. Systems serving for the purpose of moving nuclear fuel shall be sized depending on the fuel and applied technique, for the dropping of shipping and storage units containing the fuel.

6.2.2.2000. Fuel assemblies may only be griped in the fuel assembly management or movement systems by such devices that either provide a firm grip on the assembly, or do not lift it if this is not provided. Assemblies already griped shall only be released upon an impact by an external force. The griping device shall not release the unit lifted in case of a loss of electric power. The release of inhibited movement of faulty gripers shall be provided.

6.2.2.2100. Systems serving the purpose of moving fuel assemblies shall also be provided with manual operation, which ensures that the fuel is placed in a safe position in case of loss of electric power.

6.2.2.2200. If any activity is performed during the preparation of the fuel assemblies for storage, which entails heat generation, measures shall be taken to limit hydrogen generation and to prevent the build-up of explosive concentrations.

6.2.2.2300. The minimum instrumentation required for the safe operation of the temporary storage facility shall be determined. The adequacy of the minimum instrumentation shall be demonstrated.

6.2.2.2400. Systems, structures and components required for reliable operation of the interim storage facility, with particular attention to optical systems, shall be designed for environmental conditions and radiation exposure expected during

normal service, anticipated operational occurrences and design basis accidents.

6.2.3. Requirements for fuel shipment

6.2.3.0100. The container used for the shipment of fuel assemblies shall be designed and selected by taking into account the time of shipping in and from the interim storage facility and the processing technique of the destination nuclear facility receiving the fuel assemblies from the interim storage facility. If this is not feasible, then operability of the available containers shall be ensured by the adequate construction of the departure and destination points.

6.2.3.0200. The design basis of the shipping container shall be determined by taking into account the characteristics of fuel assemblies to be shipped, the design basis of the departure and destination nuclear facilities of shipping in and out, and the characteristics of the transport vehicle and transport routes between the two facilities.

6.2.3.0300. The shipping containers shall have anti-contamination coating.

6.2.3.0400. During the design process of the shipping container those documents shall be developed, which specifies the tasks to be performed during normal service, anticipated operational occurrences and design basis accidents.

6.2.3.0500. If the shipment of the fuel assemblies takes places within the site of the interim storage facility or between neighbouring sites and shipment outside the site can be excluded, it is sufficient to examine the initiating events corresponding to the initiating events determined for the two facilities, operations of shipment within the site and management and lifting operations inside the facility, and to comply with design requirements for these as part of the design basis.

6.2.3.0600. Safety classification of shipping containers, determination of safety functions, general and specific design requirements, requirements for the frequency of functional tests, maintenance and revisions shall be derived based on requirements of the departure and destination facilities of the shipment.

6.2.4. Instrumentation and control, informatics

6.2.4.0100. Control and measurement instrumentation shall be provided for the control of safety functions, systems and system components during normal service, anticipated operational occurrences and design basis accidents. Special attention shall be given to operating parameters of those systems and system components that may have an effect on the removal of the residual heat, the integrity of the fuel element, the cladding of it and the interim storage facility, and furthermore to the information required for safe and reliable operation of the interim storage facility.

6.2.4.0200. An appropriate communication system shall be established between various locations for the purpose of information flow and transmission of

instructions. Communication connection shall also be ensured to external organizations whose activities may be required during normal service, anticipated operational occurrences and design basis accidents. Communication systems shall have no detrimental or interfering effect on systems and system components important to nuclear safety.

6.2.4.0300. Instrumentation and control systems shall be implemented and applied in order to measure the parameters important to nuclear safety, automatically register instructions given to the systems and system components and of measurement results, and to provide an archiving option shall ensure the tracking and later analysis of normal operation, anticipated operational occurrences and design basis accidents.

6.2.4.0310. Separation of instrumentation and control systems important to nuclear safety shall be ensured, and these systems shall be free of reaction.

6.2.4.0320. Appropriate control and regulation instruments shall be applied to keep the service parameters of systems and components within the required service limits.

6.2.4.0400. A part of the control and instrumentation systems shall be capable of providing information for emergency response decision making with regard to the condition of the interim storage facility during an accident.

6.2.4.0500. The electric power supply of systems and system components important to nuclear safety shall be provided from such a source the reliability of which is conform to the safety class and power needs of the system and system components. The electric power supply of instrumentation and control, alarms and equipment providing communication tasks shall be provided from an uninterrupted power supply as necessary.

6.2.4.0600. When applying computers or other programmable devices for safety functions, it shall be verified that the design, production and installation of any programmable device satisfies the respective safety requirements.

6.2.4.0700. The instrumentation and control systems and components important to nuclear safety shall be designed so that their failure or exceedance of their measurement range shall be detectable.

6.2.4.0800. The necessity of the construction of a control room shall be assessed by taking into account the service states occurring during normal service, anticipated operational occurrences and design basis accidents. If it is necessary due to the interim storage process, the control room shall be constructed so that the conditions for human work in the control room is maintained irrespective of failures and effects of the systems and components.

6.2.4.0900. If a control room is constructed, the sufficient display, intervention and recording devices shall be available to the operator in normal operation,

anticipated operational occurrences, in design basis accidents and, if necessary, in accident situations, and the following shall be made available in the control room:

a) performance of operator actions

b) appropriate traceability of the condition of the interim storage facility and its system components,

c) clear and timely indication of changes affecting nuclear safety, and

d) possibility of identification and activation of all protection intervention.

6.2.4.1000. Appropriate working conditions shall be provided in the control room and measures shall be taken for the protection of the workers, so that the control room can be accessed even in design basis extension conditions and the radiation exposure to the staff working there remains below the prescribed limits.

6.2.4.1100. The operating personnel shall be provided with control and measurement instruments that provide a complete overview of the condition and operation of the interim storage facility.

6.2.4.1200. Such systems and system components shall be placed in the control room that can indicate any deviation from normal service states. Furthermore, appropriate and reliable data collection, processing and display systems and system components shall be provided that support the operation staff during anticipated operational occurrences, design basis accidents and as much as possible during beyond design basis accidents.

6.2.4.1210. The instrumentation and control configuration of systems and components important to nuclear safety shall be in direct, known and unambiguous connection with the behaviour and physical parameters of the interim storage facility.

6.2.4.1300. If the measurement of a physical parameter is necessary but cannot be implemented in practice, then the derived value taken into consideration instead of it shall have a close physical and time relationship to the parameter to be detected. All interference and conditions that might distort the information shall be examined and measures shall be taken so that any interference is reduced to the possible minimum.

6.2.4.1400. It shall be ensured that instrumentation and control configuration and actuation logic of the systems and system components important to nuclear safety or the related data can only be changed in a planned, tested manner.

6.2.4.1500. Signals indicating an accident condition shall not be self-acknowledging, regardless of whether the initial event still exists. Alarms for the workers shall only be possible to be acknowledged by workers authorized to do so, even after the limit is no longer exceeded.

6.2.4.1600. Accidents that potentially occur due to a single failure of the

instrumentation systems and system components important to nuclear safety shall be analyzed.

6.2.4.1700. The instrumentation shall be applicable to measure the parameters of the nuclear facility and to withstand the environmental conditions induced by initiating events taken into account in the design basis of the interim storage facility.

6.2.5. Design requirements for auxiliary systems

6.2.5.0100. Auxiliary systems important for the operation of systems and system components important to nuclear safety shall be available as necessary.

6.2.5.0110. A failure of an auxiliary system, independently of its importance and role to safety, shall not risk the safety of the nuclear facility.

6.2.5.0200. Auxiliary service supply shall be provided with a backup solution according to its impact on nuclear safety should a failure occur. The reliability, performance and availability of each backup shall comply with the same requirements relevant for the systems and system components supplied by it. Every backup shall remain in operation as long as the safe condition of the interim storage is reached and maintained or as long as the original auxiliary system is put in operation.

6.2.5.0300. In the case of electric power supply systems, the loss of external AC power supply shall not lead to unacceptable consequences.

6.2.5.0310. Requirements for the quantity, duration, level and continuity of electric power supply shall be determined in harmony with the requirements related to the supplied systems and components important to nuclear safety.

6.2.5.0320. Compartments shall be divided into physically separated zones. These zones shall be vented in such a way that pressure differentials developing between the zones should prevent the dispersion of radioactive contamination. The venting system shall involve such devices whose duty is to limit the release of radioactive contamination.

6.2.5.0400. During normal service, anticipated operational occurrences and design basis accidents the venting systems of the interim storage facility shall provide:

a) the workers with such an environment suitable for work which ensures that operation of the systems and system components important to nuclear safety is possible;

b) the appropriate environmental conditions for the operation of systems and system components, also including the auxiliary service and storage rooms;

c) air-flow from rooms of lower contamination levels to rooms of higher contamination levels;

d) separation of process zones from those with breathable air;

e) minimization of the inherent risk in toxic and other chemical attributes of process materials as well as explosive mixtures of gases and steam;

f) that airborne discharges of the nuclear facility can only be released to the environment through controlled discharge points; and

g) limits the spread of contamination and contributes to reduce the airborne contamination concentration in the atmosphere of the nuclear facility compartments and in the released air.

6.2.5.0500. During planning, the possible wind velocity and the pressure modification effect of natural features and structures in the environment shall be taken into account. Filters shall also be installed in the ventilation system inlets if it is required in order to ensure that the air drawn from the environment will not be contaminated.

6.2.5.0600. Filters of the ventilation system shall be placed in a manner that radiation exposure to the personnel on the site is the reasonably achievable lowest and biological shields shall be installed wherever it is needed. The safe replacement of filter cartridges and the safe removal of contaminated filter cartridges shall be ensured. Tools shall be provided for the filters to be replaced without any degradation in the efficiency of ventilation.

6.2.5.0700.

6.2.6. Radiation protection

6.2.6.0100. In order to protect the persons, the public and the environment against harmful effects of ionizing radiation on the site of the interim storage facility:

a) any radiation hazardous activity shall be justified,

b) dose limits shall be complied with,

c) protection shall be optimized,

d) the intermediate storage facility, its systems and system components shall be carefully designed in order to reduce any human activity where radiation exists and to reduce the possibility of exposure to the persons staying on the site of the interim storage facility;

e) the systems, system components containing radioactive substances and their shielding shall be appropriately established;

f) radioactive materials shall be managed safely; and

g) appropriate solutions shall be used to decrease the quantity and activity-concentration of the radioactive materials generated, and to contain their

dispersion within the interim storage facility and their release to the environment at a reasonable level.

6.2.6.0200. During the design of the barriers meant to prevent leakage of fission products, it shall be ensured that any release during normal service, anticipated operational occurrences and design basis accidents remain on the reasonably minimum value.

6.2.6.0300. Requirements for in-service inspection of the protective barriers confining the releases, including the frequency of inspections and the acceptance criteria for the barriers shall be determined. Such structural design shall be favoured that ensures the repair of the barrier without removal of the fuel assemblies.

6.2.6.0400. Appropriate instruments shall limit the radiation exposure to the people during their stay at certain locations of the interim storage facility, and operability of the interim storage facility shall be ensured without accessing or staying at such locations where the dose-rate is high.

6.2.6.0500. At every part of the interim storage facility which is reasonably anticipated to be approached by the personnel, adequate protection against radioactive radiation and contamination shall be ensured during normal service, anticipated operational occurrences and design basis accidents. The protection shall ensure adequate and safe access to and stay of the personnel in the compartments that are needed to reach and maintain safe condition of the interim storage facility.

6.2.6.0600. The working areas shall be grouped by zones according to radiation levels, surface contamination and airborne activity levels. In every zone the control of entry and stay as well as the necessary protective equipment shall be ensured.

6.2.6.0700. Where radiation exposure reaching a significant portion of the annual limits is expected, such physical equipment shall be applied to prevent an unauthorized access, like remotely controlled doors, closed doors or intruder detection. There shall not be such design solution which would obstruct the escape of any person from such places. Where such control measures cannot be reasonably implemented, other tools shall be applied to ensure the same level of protection.

6.2.6.0800. The protection of personnel entering into and working in contaminated places and periodic instrument control and assessment of airborne radioactivity, surface contamination and the spread of external radiation shall be adequately ensured within and between the individual zones. The solutions shall cover the venting of contaminated places to limit the spread of contamination and contain adequate measures to prevent the dispersion of contamination.

6.2.6.0900. Where it is necessary, the measuring instruments shall be made

applicable to indicate immediately, reliably and accurately the radiation and airborne activity levels and shall be supplied with an alarm system to be able to indicate if the levels change significantly. All such tools shall be applicable to provide reliable indication and alarm under the currently prevailing environmental conditions.

6.2.6.1000.

6.2.6.1100. Manipulation of high activity objects shall be carried out by remotely controlled equipment. The manipulation of highly contaminated pieces shall be under such circumstances that provide proper protection against spread of contamination.

6.2.6.1200. Estimation of radiation exposure of persons on the site of the interim storage facility shall be ensured, in which the operational and work organization circumstances shall be taken into account. The dose estimation shall demonstrate the highest annual individual dose, the distribution, average and magnitude of individual and collective doses.

6.2.6.1300. Exposure to those who are not occupied in radiation hazardous job positions on the site of the interim storage facility shall be determined by estimation. Exposure to the population in the vicinity of the site shall be determined from such source data, which relate to the critical reference group of the population and consider the radiation exposure resulting from all sources at the given location.

6.2.6.1400. Such margins shall be provided for estimation of all kind of dose, which consider the uncertainties existing in the calculation of internal and external radiation exposure. Estimations of calculations shall be verified based on the respective measurement data. Where the accumulation of radioactive materials from radioactive contamination influences the results of dose calculations, the maximum value assumed for the entire lifetime of the interim storage facility shall be taken into account.

6.2.6.1410. Such design solutions shall be applied, which facilitate the reduction of radiation exposure during the decommissioning stage.

6.2.6.1500. Such dosimetry control instruments shall be installed in order to comply with the radiation protection requirements, which can ensure the measurements of radiation levels during normal service, anticipated operational occurrences and design basis accidents, and to the extent possible, in beyond design basis accident situation.

6.2.6.1600. These systems and components providing dosimetry control shall be as a minimum:

a) installed dose-rate meters for periodic instrumental control of spaces regularly served by the staff if accessibility of these spaces may be limited

due to change in the radiation levels during normal service anticipated operational occurrences and design basis accidents;

b) such dose rate meters installed at appropriately selected locations for the measurement and indication of general radiation levels during normal service, anticipated operational occurrences and design basis accidents and as much as possible in beyond design basis accidents, which can provide sufficient information to initiate the necessary interventions in the control room as well as for emergency response purposes;

c) systems, system components and laboratory equipment to determine the concentration of specified isotopes in gas and liquid samples from process systems and the environment;

d) tools for instrumental regular monitoring of environmental releases and environmental radiation conditions;

e) tools for determination of radioactive surface contamination; and

f) appropriate tools for measurement of personal dose and surface contamination of those staying on the site of the interim storage facility.

6.2.6.1700. Personal dosimetry, regular instrumental monitoring of radiation conditions and evaluation of personal radiation exposure and radiation conditions shall be ensured in the interim storage facility and its vicinity.

6.2.6.1800. Appropriate levels shall be defined in the radiation protection control system:

a) to prevent exceedance of authority limits; and

b) to forecast increase of radiation hazard caused by processes, degradation of condition of systems and system components or by unanticipated incidents.

6.2.6.1900. Biological protections, shielding and the corresponding systems and system components shall be designed so to reasonably reduce

a) intensity and consequences of radiation occurred;

b) unplanned or unregulated displacement of the biological protection and shielding;

c) the number of parts located behind biological protection, shielding and requires regular management or access except if the parts are the radiation sources requiring the biological protection, shielding themselves;

d) the possibility of unplanned or uncontrolled removal of any radiation source from behind the shielding if the radiation source could cause impermissible radiation exposure;

e) number of such locations, where radioactive material may accumulate, and

f) radiation dose to the personnel handling or accessing radioactive sources during operations with them.

6.2.6.2000. If the existence of locations per Par 6.2.6.1900. *e)* cannot be avoided, then such measures shall be taken, which make the evaluation of presence and accumulation of radioactive material possible and facilitate their safe removal and placement.

6.2.6.2100. The inspection and, if required, decontamination of controlled areas, the persons entering and exiting the controlled areas, the reusable protective clothing as well as objects exiting and entering the controlled areas shall be ensured.

6.2.6.2200. It shall be ensured that the material, design, and construction of system components that come functionally in contact with radioactive materials or are exposed to radioactive contamination allow for decontamination and complete removal of the decontaminating solution.

6.2.6.2300. The decontamination process shall be designed to ensure that the surface quality of the affected system components meet the requirements even after decontamination.

6.2.6.2400. The licensee shall prepare for the decontamination of potentially contaminated transport containers and other packaging materials.

6.2.6.2500. Where necessary, decontamination made by remotely operated devices shall be designed.

6.2.6.2600. The place and resource needs of decontamination shall not decrease the level of nuclear safety.

6.2.6.2700. A new decontamination technology or in the case of a chemical decontamination technology a new chemical agent shall be introduced only after justified by safety analysis. The safety analysis shall contain:

a) the method of generation of radioactive waste;

b) justification that the decontamination can be performed without deteriorating the safety functions of the facility;

c) justification that the radioactivity can be removed, including the physical and chemical properties of the contamination;

d) in the case of introduction of a new chemical decontamination technology or new chemical agent

da) justification of its use;

db) results of corrosion analysis of structural materials including demonstration

by tests and the evaluation of the results.

6.2.6.2800. The decontamination process shall be optimized at least in terms of:

a) amount of secondary wastes generated;

b) radiation exposure of the personnel; and

c) effectiveness of decontamination.

6.2.6.2900. Regarding decontamination of rooms and equipment of nuclear facilities, as minimum, the planned direction of dispersion of contamination between the rooms and equipment shall be taken into account and together with the limitations on use of chemicals and technologies in the given room.

6.2.6.3000. For those equipment and tools, which can be safely transported, a room shall be designed for the decontamination, where the process can be performed without impact on nuclear safety.

6.2.6.3100. In the case of those rooms, where release of contaminated water can occur, decontaminable surfaces shall be designed and the dispersion of contamination shall be prevented. In these rooms, appropriate boundary surfaces and solutions to direct the dispersion shall be applied to limit the contaminated surfaces, quick drainage and collection of the discharged medium.

6.2.6./A. Decontamination

6.2.6.3200. Contaminated places and objects originating from contaminated places, which or whose environment the personnel may approach or pass by shall be decontaminated. Locally installed decontamination equipment shall be ensured for activities entailing significant radiation contamination or it shall be demonstrated that the main decontamination equipment can be effectively used under the given conditions.

6.2.7. Management of radioactive materials

6.2.7.0100. The design of the facility shall provide the quantity of the generated radioactive waste at the minimum and the capability of management, processing, transport, storage, inspection and disposal of all radioactive material shall be in line with the ALARA principle.

6.2.7.0200. The radioactive waste management systems shall be designed to be capable of collecting, monitoring and processing of radioactive wastes generated during normal service, anticipated operational occurrences and design basis accidents.

6.2.7.0300. Systems shall be established to manage radioactive wastes and fluids in order to keep the quantity and concentration of the discharged radioactive material below the prescribed limits.

6.2.7.0400. Systems shall be established to measure and register the radioactive

materials discharged to the environment; this function shall be performed during

a) normal service,

b) anticipated operational occurrences,

c) design basis accidents and

d) - to the extent possible - during beyond design basis accidents.

6.2.7.0500. The location and layout of discharge points shall take into account the environmental terrain conditions, the least favourable weather conditions, the effect of surrounding buildings and stacks, the aerodynamics of releases, the effect of activities performed in nearby buildings in order to minimize the consequences of radioactive discharges.

6.2.7.0600. The potentially contaminated fluids and surfaces shall be considered as radioactive, unless measurements justify their uncontaminated condition.

6.2.7.0610. For efficient waste management, radioactive waste shall be classified and separated and classified according to the states of matter. In the determination of classification aspects the requirement to keep the amount of waste at a minimum shall be considered. Further aspects shall include half-life, physical and chemical properties, radionuclide composition, activity concentration and volume.

6.2.7.0620. The activity, quantity of radioactive wastes generated during commissioning, operation and termination, including secondary wastes, shall be kept at minimum.

6.2.7.0700. The safety aspects of all future on-site and off-site processing methods shall be taken into account during the design of on-site radioactive waste management. The generation of such types and forms of radioactive wastes shall be prevented, which are incompatible with the available short and long term storage and disposal technologies.

6.2.7.0800. Such form of the on-site radioactive storage shall be applied, which:

a) provides the possibility of retrieval, as well as any subsequent storage, transport and disposal solution;

b) provides the possibility of the regular instrumental inspection of the safe condition of stored radioactive wastes as well as of the maintenance of the safe condition;

c) makes possible to determine and document each important characteristic of radioactive wastes in a way that provides the storage of such documentation during the interval expected until their disposal; and

d) makes it possible to estimate the quantity of waste generated and to be transported, to determine the rate of volume change during conditioning

and the volume and activity of radioactive wastes stored in each storage location.

6.2.7.0900. Suitable and sufficient storage place shall be provided within the nuclear facility, where the media, the parts of the components of the interim storage facility, the components and parts from the failure, maintenance, renewal of the interim storage facility, and other support materials can be stored in a way, which provides the measurement of the extent of their contamination, chemical and physical properties, as well as their decontamination, repair and transport.

6.2.7.1000. Design provisions shall ensure the selective collection and temporary storage of generated radioactive wastes, with the observation of the acceptance criteria defined for final disposal of radioactive wastes.

6.2.7.1100. Design provisions shall provide the potential release of a part of the radioactive wastes generated in the nuclear facility from the effect of limitations.

6.2.7.1200. In the determination of storage capacity it shall be considered to provide appropriate reserves that can ensure additional capacity for unanticipated events.

6.2.7.1300. The container types used for storage of radioactive wastes shall ensure the isolation of the radioactive waste from the environment for a determined storage duration.

6.2.7.1400. Management of radioactive wastes requiring special management shall be designed.

6.2.7/A. Management of airborne radioactive wastes

6.2.7.1500. Systems, structures and components suitable for management of airborne radioactive waste shall be designed to comply with the respective limits and keep the releases at a minimum.

6.2.7.1600. Volatile radioactive wastes shall be removed from the gaseous radioactive wastes to the extent reasonably achievable.

6.2.7.1700. Measures shall be designed to avoid generation of or remove flammable or explosive compounds.

6.2.7/B. Management of liquid radioactive wastes

6.2.7.1800. In the design of liquid radioactive waste processing systems the composition and properties of the liquid shall be taken into account.

6.2.7.1900. The different type of waste shall be appropriately separated and the most effective method of processing shall be selected to achieve the principal of justification.

6.2.7.2000. Appropriate tank capacity shall be available for the storage of

radioactive media to keep the environmental release at a minimum.

6.2.7/C. Management of solid radioactive wastes

6.2.7.2100. Suitable waste management procedures shall be designed in line with the principal of keep the wastes at a minimum.

6.2.7.2200. In the case of mobile conditioning equipment measures shall be designed to avoid spread of contamination.

6.2.8. Demonstration of nuclear safety

Safety analyses

6.2.8.0100. The compliance with the nuclear safety design requirements shall be assessed, evaluated and demonstrated during the design, construction, commissioning and operation of the interim storage facility. The evaluation can be based on technical considerations, deterministic and probabilistic analyses, or both.

6.2.8.0200. The compliance with the nuclear safety design requirements shall be assessed and evaluated by well documented, well tested and verified analysis tools, methods, based on a representative database. The data used in analyses shall be derived by a conservative approach.

6.2.8.0210. Models shall be applied to support the design and demonstrate its adequacy, as well as to describe the conditions related to the safety of the interim storage facility in normal service, anticipated operational occurrences and design basis accidents. Proven scientific interpretation shall support these models, and the necessary assumptions and applied approximations shall enhance safety in a certified manner.

6.2.8.0300. The analysis models shall be verified by models in parts and in entirety, as appropriate, by experiments that the most precisely describe the anticipated state of the interim storage facility. The uncertainties appearing during the experimental analysis of the anticipated state of the interim storage facility shall be taken into account. If the data cannot be duly grounded, extrapolation shall not be allowed. Where appropriate, the analyses shall be independently validated by the application of various methods or analysis models.

6.2.8.0400. The adequacy of data used in designs and safety analyses shall be justified by physical data, experiments or other tools. Where uncertainties appear in the application of data, the uncertainties shall be eliminated by conservatism towards safety. The initial and boundary conditions shall be conservatively established.

6.2.8.0500. The design and analysis tools, as well as the input data shall be verified and validated prior to the design phase. within that the analysis tools shall be demonstrated via benchmarking with real processes, appropriate experiment

or inspection results. If this is not possible then benchmarking with different calculation methods is necessary. An technical expert independent of the designer employee or designer working group shall also verify and validate the analysis.

6.2.8.0600. Sensitivity analyses shall be performed in order to evaluate the uncertainties in analyses, assumptions, input data and calculation methods. The results of uncertainty analyses and the conclusions drawn shall be summarized. If the analysis result is sensitive to model assumptions, then additional analyses shall be performed with the use of methods and procedures independent of those applied previously.

6.2.8.0610. The deterministic safety analysis shall contain the response of the interim storage facility to the postulated initiating events that may lead to anticipated operational occurrences or accident conditions. These analyses shall be used to design the systems important to nuclear safety and to ground the operational limits and conditions.

6.2.8.0620. Deterministic safety analyses shall

a) specify and analyze the postulated initiating events;

b) analyze event sequences and consequences induced by the postulated initiating events, and the effect of event sequences on the processes of the nuclear facility;

c) compare the results with the radiation protection acceptance criteria and design conditions;

d) describe that the anticipated operational occurrences, design basis accidents and certain accident situations can be managed by automatic actuation of the systems important to nuclear safety and by prescribed operator interventions; and

e) determine the operational limits and conditions.

6.2.8.0630. Applicability of analyses methods shall be demonstrated.

6.2.8.0640. It shall be demonstrated concerning all hazards and hazard factors that the safety aspects determined during the design and analyses have been taken into account by the designer and the relevant criteria have been complied with. Exclusion of events from the design basis shall be based on their frequency, or it shall be demonstrated that the given hazard factor is appropriately distant and no effect is reasonably expected on the interim storage facility.

6.2.8.0650. The most adverse operation of the systems important to nuclear safety shall be taken into account during design basis accidents.

6.2.8.0700. The design of technology systems shall be justified by strength analysis; additionally, it shall be verified that the lifetime of the load bearing component is sufficiently long by taking account of the loads, ageing processes

and environmental conditions anticipated during its whole service life. The analyses shall be performed by verified methods, as well as by model examinations, if appropriate.

6.2.8.0710. The results of strength analysis shall demonstrate that the structural components, the dimensions and materials, so the load bearing capacity of the components are appropriate for the loads and load combinations assumed in normal service, anticipated operational occurrences and design basis accidents of the interim storage facility.

6.2.8.0720. All load combinations taken into account in the design of the systems, structures and components important to nuclear safety shall be considered together with the respective occurrence frequencies.

6.2.8.0730. The change of material properties of the structural materials of the examined systems, structures or components caused by ageing effects shall be considered during the strength analysis. Where it is necessary the sensitivity of the obtained results to the selected analysis method shall also be examined.

6.2.8.0800. The safety analyses shall

a) demonstrate that the stored spent fuel complies with the limits throughout the entire period of storage, and

b) present the system of environmental monitoring.

6.2.8.0900. It shall be demonstrated for systems and components important to nuclear safety that they are able to perform each required safety function, and that they can be applied for the successful management of normal operation, anticipated operational occurrences and design basis accidents. Consequently, it shall be demonstrated that

a) the subcriticality and sufficiently cooled state of the spent fuel is guaranteed;

b) the parameters characterizing the states occurring during normal operation or as a consequence of anticipated operational occurrences or design basis accidents remain below the approved design values in the technological systems of the interim storage facility, as well as in the rooms accommodating these systems;

c) the structural materials have sufficient safety margin during normal operation, anticipated operational occurrences and design basis accidents; and

d) the releases remain below the prescribed limit values.

6.2.8.0100. The analysis of anticipated operating occurrences and design basis accidents shall be conducted with conservatism in a way that the requirements are complied with great reliability.

6.2.8.1010. Safety analyses shall be documented in such a way and to such a

depth that ensures that they can be repeated or audited by independent technical experts throughout the whole lifetime of the interims storage facility, can be reviewed or modified if necessary, and the conservatism applied and the available margins can be reviewed and re-evaluated.

6.2.8/A. Design basis

6.2.8.1020. Data and limits to determine the detailed design basis shall be derived from the theoretical or experimental analysis of consequences of design basis accidents, or from engineering judgment generally accepted in practice in order to ensure the compliance of the systems, structures and components with the functional requirements.

6.2.8.1030. Operating states of the nuclear facility shall be identified; the postulated initiating events shall be categorized. The categories shall cover normal service, anticipated operational occurrences and design basis accidents. Acceptance criteria shall be assigned to each category by observing the requirement that frequent initiating events may only entail very limited radiological consequences, while during design basis accidents of significantly lower frequency, the compliance with the release limits specified for accidents shall be ensured.

6.2.8.1040. Design basis shall be systematically determined and documented in such a way that the nuclear facility always complies with its current design basis.

Accident analysis

6.2.8.1100. All of those assumed initiating events entailing hazard to nuclear safety shall be taken into account during the design, which

a) are in connection with the site of the interim storage facility or its environment;

b) are the consequences of intentional or unintentional on-site or off-site human activities; and

c) may originate from the operation of the nuclear facility, including all operation condition of the interim storage facility.

6.2.8.1200. The event sequences occurring as consequences of assumed initiating events, as well as their effect on operational processes shall be identified. The initiating events identified shall be grouped as follows:

a) external natural and human origin hazard factors,

b) internal hazard sources, and

c) process and workers, or hazard sources caused by the failure thereof.

6.2.8.1210. Individual loads and environmental conditions affecting the systems, structures and components initiated by the following internal events shall be

considered in the design as a minimum:

a) flooding,

b) drop of load,

c) explosion,

d) fire.

6.2.8.1220. Loads and environmental conditions induced by site-specific natural and artificial external events affecting the systems, structures and components shall be considered in the site-specific criteria:

a) extreme wind,

b) extreme external temperature,

c) extreme precipitation and site flooding,

d) earthquake,

e) fire,

f) explosion,

g) airplane crash, and

h) effect of transport, industrial activities in the vicinity of the site.

6.2.8.1230. The deterministic safety analysis shall demonstrate that those harmful effects, which are induced by the consequences of event sequences, do not endanger the operability and performance of the systems and components important to nuclear safety.

6.2.8.1240. It shall be demonstrated that cooling of the fuel elements can be maintained during design basis accidents.

6.2.8.1300. The design basis of the interim storage facility shall be established with the consideration of the assumed initiating events. Additionally, the possible combinations of assumed initiating events shall also be taken into account. If the simultaneous occurrence of events can be excluded by logical or mathematical methods, then such combinations shall not be taken into account during the design process.

6.2.8.1400. The following events can be screened out of the initiating events included in the design basis:

a) internal events caused by failures of systems and components or by human failures, the occurrence frequency of which is lower than 10^{-6}/year;

b) events caused by external human actions that are characteristics on the site, the occurrence frequency of which is lower than 10^{-7}/year, or if the hazard

factor is at a sufficient distance and any effect on the interim storage facility cannot be reasonably anticipated; and

c) external hazard factors among natural phenomena, the occurrence frequency of which is lower than 10^{-4}/year.

6.2.8.1500. The cumulative effect of those screened out internal events caused by failures of systems and components or by human failures and those screened out events caused by external human actions that are characteristic on the site shall be assessed and evaluated.

6.2.8.1600. If any initiating event occurs, then at least one physical barrier among those aiming at preventing a release shall remain intact, or the meeting of the radiation protection objective shall be demonstrated for the case when each barrier is damaged. An aggravating single failure of that system of the interim storage facility shall be assumed, which provides the greatest limitation of the consequences of the given event, or a human failure having identical effect.

6.2.8.1700. It shall be demonstrated that the adverse effects induced by event sequences do not endanger the operation and functionality of the required systems and components important to safety.

6.2.8.1800. The internal and external radiation exposure to the persons staying on and off the site of the interim storage facility, within the endangered area shall be estimated for those event sequences that may lead to the discharge of radioactive materials or radiation exposure.

6.2.8.1900. Acceptance criteria shall be established for each event sequence. The meeting of the acceptance criteria shall be evaluated with the consideration of the occurrence frequency of the event and its consequences.

6.2.8.2000. The direct radiation, the inhalation and ingestion of radioactive materials, as well as the physical and chemical properties of the discharged radioactive materials shall be taken into account during radiation protection calculations.

6.2.8.2100. The event sequences can be grouped for the purpose of failure analyses; bounding case can be specified for each group. The bounding cases shall have at least as severe consequences as any member of the represented group without any further independent failure with the consideration of the relevant physical and chemical processes, and the signals inducing the actuation of systems and components important to nuclear safety. It is sufficient to conduct the analysis of the bounding case.

6.2.8.2200. The circumstances and time needs of operational inspections, operating state evaluation, decision making and execution shall be taken into account during the analysis of interventions to be performed to manage design basis accidents. The analysis shall justify that the necessary actions can be

implemented during the available period of time.

6.2.8.2300. The correctness of data used for analyses shall be justified through comparison with grounded real data or the deployment of experimental results, or by any other way; these shall be performed for extrapolated data as well.

Analysis of accidents

6.2.8.2400. All postulated initiating events and the emergencies induced by the combination of nuclear and conventional hazards and hazard factors, as well as the nuclear emergencies induced by conventional emergencies shall be analyzed. The analysis shall be appropriately detailed to ground the compliance with the nuclear emergency preparedness requirements and to preliminary plan the protective actions for the public living off the site. The accident analysis shall be duly realistic to develop the accident management strategies. Reasonably conservative assumptions shall be made where realistic analysis is not possible. As a minimum, the analysis shall comply with the following requirements:

a) the dominant event sequences leading to an accident shall be identified;

b) every process and activity shall be identified, when the assumed nuclear emergency requires the implementation of on-site or off-site protective actions;

c) the existing design margins of the interim storage facility shall be assessed, including the operation of certain systems and components important to nuclear safety under conditions differing from their original design state and function, as well as the application of some temporary systems and components for the mitigation of accident consequences;

d) such solutions shall be designed, which can reduce the occurrence probability of the accident and mitigate the consequence;

e) accident management procedures shall be developed by taking account of the representative and dominant accident event sequences;

f) those defects shall be determined, which occur on physical barriers meant to prevent discharges or on direct radiation shielding; additionally, the extent of radiological consequences and characteristic properties of the assumed defects shall also be determined.

6.2.8.2500. In addition to design basis accidents, the operator interventions shall be verified and validated for the identified accident situations.

6.2.8.2600. The accident analysis shall provide such information, which can be used as a basis for the planning of actions for the protection of the public living off the site, depending on the extent of the radioactive discharge.

6.2.8.2610. Arrangements shall be made for the technological and radiological analysis of the emergency situation, to estimate the occurred or predicted source-

term and to forecast the consequences of the release. The analysis, to the extent possible, shall be based on measured data.

Content of the Final Safety Analysis Report

6.2.8.2700. The demonstration of the compliance with the requirements for the design and construction of the interim storage facility shall be documented in the Final Safety Analysis Report. The Final Safety Analysis Report shall describe:

a) the site, including the determination of the site boundaries by EOV coordinates, the layout of the nuclear facility and the realization of safe operation;

b) the design basis;

c) the safety functions, the systems and system components important to nuclear safety, their design basis as well as their operation during normal service, anticipated operational occurrences and design basis accidents;

d) the applied legislation, requirements and standards;

e) the organization operating the nuclear facility and its operation;

f) the safety evaluation of the site, including the seismic safety design basis, the most important assumptions of the design, the evaluation of the safety limits, and the earthquake protection and registering system;

g) the general design principles of the nuclear facility and the methods applied for the fulfillment of the fundamental safety objectives;

h) the safety analyses performed for the demonstration of compliance with the safety criteria and limits for radioactive discharges for the occurrence of assumed initiating events in order to evaluate the nuclear safety of the nuclear facility;

i) the emergency operating procedures and accident management guidelines, the preparation for inspections and testing, the qualification requirements for workers and their training, the programme of operating experience feedback, and ageing management;

j) the technical background of Operational Limits and Conditions;

k) the radiation protection policy, strategy, methods and regulations;

l) the design basis and adequacy of the on-site emergency preparedness, and the contacts and coordination with those off-site organizations, which play a role in emergency response;

m) the way how the decommissioning and dismantling aspects are taken into account during operation;

n) the proof that the relations between the steps of radioactive waste production and management are taken into account;

o) the system, requirements and the substantiation of on-site radioactive waste management;

p) how the long term storage of radioactive wastes and fuel assemblies is carried out;

q) the system monitoring the prescribed environmental conditions within the nuclear facility;

r) the programme for the demonstration of that the properties of fuel assemblies will comply with the storage limit values in the future;

s) the commissioning programme of the nuclear facility and its fundamental considerations; and

t) the programmes of maintenance, testing, condition monitoring and in-service material tests, and their fundamental considerations.

6.2.8.2800. The Final Safety Analysis Report shall include the nuclear facility, and spent fuel and its nuclear safety related properties.

6.2.8.2900. The effect of the planned modifications on nuclear safety shall be evaluated based on the Final Safety Analysis Report.

6.2.8.3000. The Final Safety Analysis Report shall contain the extent of differences of operational, design and safety parameters of the systems, structures and components and the safety substantiation of it.

6.2.8.3100. The Operational Limits and Conditions of the nuclear facility with regard to systems, structures and components and experimental devices shall be finalized on the basis of the analyses of the Final Safety Analysis Report, commissioning tests and the operational experience, as well as those requirements for employees and activities shall be finalized, which are necessary for:

a) preventing the occurrence of situations inducing accident conditions and

b) mitigating the consequences under accident conditions.

6.2.9. Planning of emergency response

6.2.9.0100. The threats identified during design shall be categorised into threat categories based on their potential severity. During preparation the ability to eliminate the most severe emergency situation defined by analyses shall be achieved. It shall be demonstrated that the preparation ensures the timely execution of appropriate actions (i.e. classification, notification, activation and implementation of emergency response measures) in every postulated initiating

event and possible emergency situation.

6.2.9.0200. An emergency response centre shall be established for the personnel taking part in emergency response. Sufficient instrumentation and tools shall be available for the management of necessary actions during the emergency situation, and for the communication with the on-site organizational units and locations as well as with off-site organisations responsible for nuclear emergency response.

6.2.9.0300. Personnel in the emergency control centre shall be protected against hazards induced by the nuclear emergency situation. The option to regularly check the functioning of the emergency control centre shall be ensured.

6.2.9.0400. An on-site alarm system shall be operated that is capable of alarming all the people staying on the site; rescue routes shall be designated that are in compliance with labour safety, radiation protection, fire protection and industrial safety requirements, simply, clearly and permanently marked and reliably enlightened; other conditions for their use shall be provided.

6.3. NUCLEAR SAFETY REQUIREMENTS FOR OPERATION

6.3.1. Organizational structure of the licensee

6.3.1.0010. In order to use the scope of authority and perform the tasks in compliance with the safety regulations, the commitment to nuclear safety shall be considered as an essential aspect during the assignment of the management. The responsibility covers the products made and activities performed by the own organization of the licensee, as well as those needing the involvement of contractors.

6.3.1.0100. The applicability of the organizational structure shall be demonstrated and documented in order to safely and securely operate the interim storage facility and properly respond to emergency situations.

6.3.1.0200. The licensee is responsible for the safe operation of the interim storage facility in compliance with every legal and nuclear safety regulatory requirement, whether own or external workers are employed.

6.3.1.0300. The structure of organization units shall take into account the functions of the organization. The workers shall be selected and entitled according to the performance of these functions. The person entitled to lead an organizational unit is responsible for the nuclear safety aspects of the work of the unit lead by him/her. The most important aspect of the establishment of the organization is the safe operation of the interim storage facility in every possible operating state.

6.3.1.0400. The obligations and responsibilities, organizational relations and

reporting lines as well as the rights and authorizations required for the fulfilment of the obligations shall be clearly defined and documented for every employee.

6.3.1.0500. The personal responsibility for the safety of the nuclear facility shall rest with the top leading officer of the interim storage facility.

6.3.1.0600. The establishment of the appropriate organizational structure and the selection of the management of the interim storage facility shall be the task of the top leading officer of the interim storage facility. If an organizational unit is responsible for the supervision of the compliance with nuclear safety requirements, then the leader of this organizational unit, as well as the leader responsible for radiation protection shall work under the direct leadership of the top leading officer of the interim storage facility.

6.3.1.0700. The below listed functions shall be adequately separated during the establishment of the organizational structure:

a) management functions,

b) executive functions of operation,

c) independent supervisory functions, and

d) functions supporting operation.

6.3.1.0800. The licensee shall establish and maintain appropriate relations with:

a) authorities, for the clarification of and compliance with safety requirements;

b) operators of other interim storage facilities and other organizations having interest in the use of atomic energy, for collection and analysis of experiences;

c) national and international scientific and research institutes, other organizations having interest in the use of atomic energy, for the deployment of up to date scientific and technical information, and

d) public organizations, organizations and persons representing the public opinion, for the public acceptance of the use of atomic energy and for the fulfilment of legal public reporting obligations.

6.3.1.0900. The inspection of inservice functional tests shall be assigned to an organizational unit that is independent of the organizational unit performing the operation. The internal supervision of modifications shall be assigned to an organizational unit independent of that demanding the modification.

6.3.1.1000. The operational processes shall be properly controlled to ensure that the nuclear safety related decisions are based on sufficient and reliable information.

6.3.1.1010. During the design of operational processes, sufficient safety margins shall be assigned to exclude any reactivity accident if any change occurs in the

operational processes, excluding the cases when two, independent changes occur concurrently with a frequency of 10-6/year.

6.3.1.1100. The adequacy of the organizational structure shall be assessed at the introduction of such organizational changes, which may have nuclear safety significance. The effect of such changes on nuclear safety shall be assessed in advance, and then carefully planned; the fulfillment of the objectives set shall be assessed after realization.

6.3.1.1200. The systems and components important to nuclear safety shall be inspected by an organizational unit having adequate competence; a system of formal liaison to the authority shall be established.

6.3.1.1300. The workers shall always comply with the legal requirements for their number, education, qualification and health conditions.

6.3.1.1400. The licensee shall guarantee the availability of the necessary technical and scientific support in every nuclear safety related field during the entire lifetime of the nuclear facility.

6.3.2. Requirements for workers

Suitability and training of workers

6.3.2.0100. The licensee shall elaborate a training policy that demonstrates the commitment of the management towards training, emphasizes the importance of training in the reliable operation and maintenance activity. A training plan shall be prepared based on the training policy to meet the long term operational objectives and demands. The training plan shall take into account the experience gained during construction, operation and decommissioning, as well as the experience of other facilities, and the modifications, organizational changes and changes in the regulatory requirements.

6.3.2.0200. The licensee shall elaborate a comprehensive training programme based on the long term professional qualification needs and training objectives, which shall strengthen the crucial role of nuclear safety.

6.3.2.0300. Systematic approach shall be applied to training in order to provide a logical way from the identification of the professional qualifications required for the work performance, through the elaboration of training programmes to obtain the identified professional qualifications, to their implementation and the follow-up evaluation.

6.3.2.0400. Only those qualified workers shall take a job position important to nuclear safety, who have the necessary professional knowledge, skills and commitment to safety. The licensee shall take care of the proper training and qualification of the workers.

6.3.2.0500. The licensee shall determine and document the professional

knowledge requirements for workers.

6.3.2.0600. Training records as well as records justifying the fulfilment of the qualification requirements shall be established and maintained for every employee working in a job position important to safety.

6.3.2.0700. The work on systems and components important to nuclear safety performed by an employee of a contractor shall be approved and checked by an employee of the licensee, who has appropriate professional knowledge with regard to the specific work.

6.3.2.0800. A training programme, which is based on work performance shall be developed for employees working in job positions important to nuclear safety. The training programme shall include basic trainings for the preparation of the workers for the given job position, as well as refresher trainings.

6.3.2.0900. The technical workers shall have basic nuclear safety, radiation protection, fire protection, on-site emergency response and industrial safety knowledge.

6.3.2.1000. The refresher training of the operating personnel shall especially include:

a) actions to be performed for the safe operation of the interim storage facility during normal operation, anticipated operational occurrences and design basis accidents;

b) cooperation of the operating personnel; and

c) operating experience, technical and procedural modifications.

6.3.2.1100. The workers shall have thorough knowledge regarding the content of the operational documents and procedures, including their changes.

6.3.2.1200. The licensee shall always have own personnel in sufficient number and with adequate qualification, who knows and understands the design basis of the interim storage facility, its actual construction, as well as the operation of the interim storage facility during its each operating state.

6.3.2.1300. The operational documents and procedures shall be available for every worker at his/her workplace.

6.3.2/A. Radiation protection training of employees

6.3.2.1310. Beyond the training requirements laid down in the government decree on radiation protection the specific attributes of the nuclear facility shall also be trained during the radiation protection training.

Activity of the employees

6.3.2.1400. Any work performance shall be planned and achieved in compliance

with the effective regulations, standards, requirements, practice and administrative procedures during the entire service life of the nuclear facility. The work shall be performed under controlled conditions by the application of approved and valid operating, maintenance, testing and emergency response instructions, procedures, plans, drawings or other rules (hereinafter referred to as operational documents), which shall be regularly and systematically reviewed for the sake of adequacy and effectiveness.

6.3.2.1500. Only those workers can make changes in the operation mode of the interim storage facility, who are entitled to perform this action and have the necessary qualification. Other persons shall not intervene in the nuclear safety related decision making, development and achievement of actions.

6.3.2.1600. The top leading officer of the operating organization shall be responsible for the necessary revision of the Operational Limits and Conditions and for the compliance with effective instructions. The revision of the Operational Limits and Conditions shall take into account the own and international experience, the scientific and technological development, the performed modification and the changes in the safety analyses of the interim storage facility.

6.3.2.1700. The practicing of task performance and the development of operational procedures shall be in full harmony for the workers with the planning of tasks, and design of systems and system components. The approval process of the operational procedures shall include the verification whether they are understandable and realizable. The requirements for systems and system components important to nuclear safety shall be taken into account; the areas of the potential improvement of nuclear safety culture shall be identified. The effects of human relations, especially the dependencies, on the performance of the workers shall be analyzed.

6.3.2.1800.

6.3.3. Rules of operation

6.3.3.0010. It shall be demonstrated through analyses, observations, operational tests and scene inspections, during the commissioning activity subsequent to the completion of the assembly works that the physical condition and operation of interim storage facility systems and components are in compliance with their design, the relevant nuclear safety requirements and the Operational Limits and Conditions.

6.3.3.0020. Every such operational limit and condition shall be finalized during commissioning, which is important for the safe operation of the nuclear facility.

6.3.3.0030. In order to comply with the above requirements, the commissioning organization, with the involvement of designers, shall elaborate a detailed

programme, which shall include and control activities and responsibilities of the participants from the preparation for the commissioning, through the individual system and component tests, to the completion of the test operation.

6.3.3.0040. The "0" state of systems and components important to nuclear safety shall be examined and documented during commissioning in a way that the modifications during the operational period shall be identifiable and data shall be comparable to later examination results.

6.3.3.0050. The commissioning shall be performed based on work programmes elaborated by the commissioning organization. Prior to the commencement of commissioning, as a minimum, work programmes shall be developed with regard to the activities listed below:

a) preliminary tests;

b) official tests;

c) commissioning of technology systems; and

d) test operation.

6.3.3.0060. As a minimum, the work programmes shall include:

a) the description of the task to be completed, the examinations to be performed, their expected values and acceptance criteria, and their relation to design operating parameters,

b) arrest points,

c) the procedure, sequence and documentation of examinations,

d) organizational questions and responsibilities,

e) the minimum number of workers, their necessary professional qualifications,

f) fire and labour safety requirements and radiation protection requirements for radiation hazardous activities, which shall be complied with during the work, and

g) the management of deviations between the parameters defined in the work programme and those experienced during practical performance, with the consideration of the relevant quality management requirements.

6.3.3.0070. The completion of tasks identified in the commissioning work programmes and the authenticity of the collected information shall be confirmed by the responsible workers taking part in the activities.

6.3.3.0080. The appropriateness of the operating instructions of interim storage facility systems, structures and components shall be verified during commissioning.

6.3.3.0090. The experience gained during commissioning and the further specification of interim storage facility data shall be included in the Final Safety Analysis Report.

6.3.3.0110. The operation related activities in the interim storage facility shall provide nuclear safety of the nuclear facility during normal service, anticipated operational occurrences and design basis accidents.

6.3.3.0110. The operation, maintenance, reviews and tests of the interim storage facility shall be made in accordance with detailed procedures and operating rules, which takes into account the design and manufacturer instructions, the requirements for the establishment of work places and that the Operational Limits and Conditions can be complied with reasonable safety margins, and which guarantees the maintenance of the qualified state of components having qualification.

6.3.3.0200. The actions to be made during normal service, anticipated operational occurrences and design basis accidents shall be performed based on written rules.

6.3.3.0300. The rules of operation related activities shall be elaborated and actualized based on background documents of the operation of the interim storage facility, relevant designer and manufacturer prescriptions, experiences, and on nuclear safety requirements and standards for the establishment and conduct of various operation related activities.

6.3.3.0310. The operating rules document shall be compiled with in a way that any designated worker shall easily complete them in the required sequence.

6.3.3.0320. The operating rules documents shall be developed, reviewed, issued, revised, modified and withdrawn according to a written procedure.

6.3.3.0330. The operating rules documents and procedures shall be elaborated in such a way that the nuclear facility be in compliance with the operational limits and conditions during their implementation.

6.3.3.0400. The events occurring at the interim storage facility shall be

investigated; their recurrence or occurrence of similar events shall be prevented by the implementation of the necessary corrective measures.

6.3.3.0500. The scope of data having significance in the nuclear safety evaluation of the operation shall be collected, evaluated and then utilized in order to guarantee nuclear safety.

6.3.3.0600. Procedures on the necessary actions to manage accidents shall be developed. As the most important goals of the procedures, the licensee shall be prepared for accident management based on approved action plans for the restoration of the basic safety functions, the long term recovery and limitation of radiological consequences. The persons staying on the site of the interim storage facility shall be prepared for their obligations in an accident.

6.3.3.0610. Emergency operating procedures shall be developed for potential design basis accidents that are analysed in the Final Safety Analysis Report of the nuclear facility or recognized later, the compliance with which allows the workers to safely manage the design basis accidents. The workers shall follow the emergency operating procedures during design basis accidents. The emergency operating procedures shall include the basic criteria for the recommencement of normal operation.

6.3.3.0620. The emergency operating procedures shall be systematic, and shall be substantiated by purpose oriented analyses. The emergency operating procedures shall be in harmony with other operating procedures.

6.3.3.0630. The emergency operating procedures shall support the operators in the selection of the proper procedure and in navigation between instructions.

6.3.3.0700. Specific emergency operating procedures and measures shall be determined for earthquakes. The organization of the operation and service of the interim storage facility, as well as the evaluation of the post-earthquake state shall be regulated.

6.3.3.0800. The number of temporary modifications influencing the operation of the interim storage facility shall be minimized.

6.3.3.0900. The operation of the interim storage facility shall take into account the dismantling plans.

6.3.3.1000. The rule of documentation of the interim storage facility parameters shall be regulated in the operational documents. The use of automatic registration results of the instrumentation and control data collection system shall make it possible to follow the anticipated operational occurrences and design basis

accidents, as well as to evaluate the results in a later time.

6.3.3.1100. The operating personnel shall keep an operator log. The operator log shall include the nuclear safety related facts, activities, parameters, but as a minimum:

a) automatic operations;

b) the implementation and results of tests;

c) the operational interventions;

d) the measures, their implementation and results;

e) the repairs and replacements, and

f) the change of the shift personnel.

6.3.3.1200. The operating documentation shall be drawn up according to uniform content and formal requirements, which are clear and well known by the operators.

6.3.3.1300. Prior to the issuance of operating documentation, their harmony and consistency shall be confirmed.

6.3.3.1400. The employees shall be well aware of the content of operational documentation, including their actual modifications.

6.3.3.1500. The effective versions of the operational documentation shall be available for the workers.

6.3.3.1600. The management of the licensee shall be responsible for preparing, approving and maintaining the operational documentation and procedures, and for committing the employees to comply with them, as well as for verifying the compliance.

6.3.3.1700. If an employee deviates from the approved rules and procedures, then the deviation shall be logged, together with the reason for deviating and with the identification of the employee ordered the deviation; furthermore, the deviation shall be investigated as an event.

6.3.4. Management of fuel assemblies

6.3.4.0100. The fuel assemblies shall be intact during the operation of the interim storage facility. The licensee shall have an effective programme for ensuring the intactness of the fuel assemblies.

6.3.4.0200. The adequacy of the storage of fuel assemblies shall be continuously demonstrated during the operation of the nuclear facility.

6.3.4.0300. The fuel assemblies to be stored in the interim storage facility shall comply with the acceptance criteria.

6.3.4.0400. The Licensee shall perform suitable acceptance inspection,

examinations and tests at the acceptance of the fuel assemblies. The compliance with the acceptance criteria shall be assessed, demonstrated and documented at the acceptance of the fuel assemblies.

6.3.4.0500. The interim storage facility shall be operated with the maintenance of the reserve storage capacity defined by analyses.

6.3.4.0600. Internal regulation shall be applied to the safe management of fuel assemblies being not in compliance with the acceptance criteria.

6.3.4.0610. The Licensee shall ensure even after the planned storage period

a) the possibility of transport, movement and storage in harmony with the relevant regulations

b) the possibility of implementation of management and conditioning of the fuel assemblies needed for a later final disposal, in agreement with the resepective requirements and radioactive waste disposal strategy.

6.3.4.0700. Internal regulations shall be applied to the safe management of any potential degradation of the fuel assemblies resulting in the exceedance of the storage limits. Possibility of later management shall still be provided. The licensee shall operate a comprehensive accountancy and control system, which demonstrates the compliance with every requirement of the nuclear fuel related international treaties and national legislations.

6.3.4.0800. The stored fuel assemblies shall be registered; their safeguards inspection shall be provided.

6.3.4.0900. Approved requirements, rules and procedures shall be applied during every activity in connection with fuel assemblies; especially in the case of:

a) transport into the facility,

b) verification of incoming fuel assemblies,

c) movement of the fuel assemblies within the site of the nuclear facility,

d) storage of fuel assemblies, and

e) transport of the spent nuclear fuel from the site of the nuclear facility.

6.3.5. Radiation protection activity

6.3.5.0100. The radiation exposure to persons staying on the site of the interim storage facility, the quantity of radioactive materials discharged to the environment, as well as the public overexposure shall be kept as low as reasonably achievable.

6.3.5.0200. The radiation exposure to persons staying on the site of the interim storage facility, the quantity of radioactive materials discharged to the

environment shall not exceed the regulatory limits.

6.3.5.0300. In addition to the optimization of the radiation exposure to the workers, the interim storage facility shall be operated with the application of the ALARA principle, by observing the radiation protection aspects.

6.3.5.0400. The performance of radiation hazardous activities shall be justified.

6.3.5.0500-6.3.5.0700.

6.3.5/A. Radiation protection programme

6.3.5.0800. In addition to the provisions of the government decree on radiation protections, the radiation protection programme of the licensee shall take into account the provisions of this Code.

6.3.5.0900. The operating organization shall ensure the correct implementation of and compliance with the radiation protection programme by supervision, inspection and audits of fulfilment of the radiation protection methods and procedures.

6.3.5.1000. The radiation protection programme shall ensure that in each operating condition in the facility the dose from ionizing radiation and all planned radioactive discharges are kept below the allowed limits and as low as reasonably achievable.

6.3.5.1100. Within the operating organization, the radiation protection programme shall receive sufficient independence and resources for the enforcement of the radiation protection prescriptions, standards, procedures and of safe working methods and for development of proposals based on them.

6.3.5.1200. Besides the requirements of the government decree on radiation protection, the employees shall be aware of the obligations relevant for him/her from the radiation protection programme and his/her personal responsibilities in the practical realization.

6.3.5.1300. In addition to the application of authority personal dosimeter, all employees, including the contractors, who perform work within the controlled area or those who are regularly present in the supervised area shall be monitored for occupational radiation exposure according to the respective requirements. Personal doses shall be registered and shall be made available for the employees and the authority.

6.3.5.1400. The radiation protection programme shall contain the health examination to justify applicability of the employee exposed to radiation and the advice to be provided in the case of an emergency exposure situation.

6.3.5.1500. Dose rates shall be monitored based on the radiation protection programme at the locations where systems, structures and components may emit

radiation, especially during inspection, maintenance and fuel handling activities. The radiation protection programme shall cover the exposure during activities performed in the facility with chemical liquids, coolant medium and liquids of the auxiliary systems. The radiation protection programme shall contain provisions that ensure compliance of the above exposure situations with ALARA principle.

6.3.5.1600. The licensee shall develop the Workplace Radiation Protection Rules (hereinafter referred to as: WPRPR) within the radiation protection programme. The WRPR shall contain as a minimum:

a) description and operation of the radiation protection organization, within that

aa) the name of the radiation protection officer and his/her deputy, his/her job, required professional education and radiation protection education;

ab) structure and tasks of the radiation protection organization, tasks of the radiation protection officer(s);

ac) radiation protection related tasks of the licensee and description of radiation protection related tasks (obligations) of the management of the operator of the facility;

ad) list of the responsibilities;

ae) determination of frequency of necessary review of the WPRPR;

af) name and address of the occupational health service contracted by the licensee, order of radiation health examinations (i.e. frequency, mode of organization, management of inhibitions);

b) provisions for the employees, within that

ba) requirements for internal and external radiation exposure monitoring of employees, its frequency and mode;

bb) if the personal radiation exposure is estimated based on measurement results performed on other employees, description of the calculation methods used for the estimation;

bc) list of radiation protection rights and responsibilities of the employees working at radiation hazardous workplace;

bd) description of radiation hazardous work areas and jobs, radiation protection classification of the employees;

be) professional and radiation protection education requirements of the employees working at a radiation hazardous workplace, the order of internal and external radiation protection trainings;

c) provisions for supervision of radiation protection workplace, within that

ca) determination of controlled and supervised areas, system of requirements

(measures to control access), measure to supervise for radiation protection of particular areas;

cb) order of control and elimination of surface contamination;

cc) mode of collection and management and order of registration of radioactive waste at the workplaces and facility;

cd) description of radiation protection monitoring systems, description of personal protective equipment, provisions for their use, description of radiation protection devices and dosimeters, provisions on the use, management, maintenance, calibration;

ce) radiation protection organization measures necessary at the particular workplaces;

cf) regulation of radiation protection supervision tasks, with special attention to the monitoring and measurement of ionizing radiation;

cg) all those radiation protection knowledge, that shall be known for safe work performance;

d) management of registers, reports, and events, within that

da) order of keeping radiation protection registers (personal dose measurement, training, medical examinations, radiation protection monitoring and assessment, accountancy of radioactive sources and wastes) and retention of certificates, order of compliance with authority reporting obligations;

db) tasks to be performed in case of abnormal events;

e) management of sealed radioactive sources, within that

ea) in case of use of Category 1, 2 and 3 radioactive sources the WPRPR contains the rules for their use, storage and accountancy;

eb) action plan to search for and recovery of missing radioactive or nuclear material.

6.3.5/B. Radiation protection service

6.3.5.1700. The tasks of the radiation protection officer shall be performed by the facility radiation protection organization established within the licensee's organization. The organization shall consist of professionally educated employees of the licensee who are well aware of the current licensing documents and the radiation protection implications of hazards imposed by the operation and the activities carried out in the facility.

6.3.5.1800. The management of the radiation protection organization shall directly report to the senior management of the licensee.

6.3.5.1900. The radiation protection officer and his/her deputy shall hold a

license to conduct radiation protection expert activity.

6.3.5/C. Classification of workplaces

6.3.5.2000. The area of the facility shall be divided to controlled, supervised and free areas taking into account the anticipated and measured dose rates, radioactive contamination and the anticipated doses.

6.3.5.2100. The classification of workplaces and rooms within the controlled areas, and the work conditions shall be reviewed regularly and in the case of changes related to radiation protection..

6.3.5.2200. The potentially contaminated areas and the areas imposing radiation exposure risk shall be identified and indicated such a way that the persons entering and staying in the area are aware the radiation conditions and their effects.

6.3.5.2300. In the case of facility areas, where a radiation exposure can be anticipated up to a significant portion of the limits specified either in the laws, regulatory resolutions or internal regulation documents, technical solutions and administrative measures shall be applied to control, regulate and limit the entrance and stay. The control, regulation and limitation shall be proportional to the risk of radiation exposure.

6.3.5.2400. Spread of radioactive contamination shall be monitored, regulated and kept as low as reasonably achievable.

6.3.5/D. Optimization of radiation hazardous works

6.3.5.2500. During the optimization of radiation protection the type of the facility, design aspects and those operational changes, events, modifications shall be considered that may influence the radiation protection arrangements.

6.3.5.2600. All radiation exposure shall be kept as low as achievable, considering the aspects of the radiation protection requirements and the environmental conditions.

6.3.5/E. Dose constraint

6.3.5.2700. In addition to the provisions of the government decree on radiation protections reference levels shall be used for the employees for the optimization of radiation protection.

6.3.5.2800. The occupational dose constraint shall be determined for employees exposed to occupational radiation and used as a planning value for personal dose received from a given facility or activity during an appropriately determined length of time, and shall be specified in personal effective or equivalent dose.

6.3.5.2900. The dose constraint shall be determined according to the following

aspects:

a) type and nature of the radiation and the equipment for it prevention,

b) regional factors,

c) consideration of the expected benefits.

6.3.5.3000. Considering the ALARA principle, to comply with the relevant dose limits and constraints, the licensee shall determine dosimetry and technology investigation levels under the permitted limits. These alarm levels shall be specified in the WPRPR. The licensee shall investigate the exceedance of the investigation level and shall determine and implement corrective actions accordingly.

6.3.5.3100. Investigation levels shall be applied for external and internal hazards based on individual dose, and for work place monitoring system for quantities determined based on dose rates, contamination or on operating experience.

6.3.5.3200. Investigation levels shall be applied for external and internal hazards based on individual dose, and for work place monitoring systems for quantities determined based on dose rates, contamination or operating experience.

6.3.5/F. Shielding

6.3.5.3300. The reasonably achievable level of radiation shielding shall be provided to decrease doses.

6.3.5.3400. The licensee shall ensure shielding devices of different type and material, which are to be used as temporary shielding for various special works.

6.3.5/G. Personal protective equipment

6.3.5.3500. The licensee shall check and regulate the use of protective equipment, take care of their appropriate condition, and ensure that the users are aware of their intended use.

6.3.5/H. Dose planning

6.3.5.3600. Dose planning shall be performed to optimize occupational radiation exposure from work processes significant from radiation protection aspects.

6.3.5/I. Limiting of radioactive materials and sources

6.3.5.3700. Unnecessary radioactive materials shall be removed from the workplaces to optimize radiation protection.

6.3.5/J. Major radiation hazardous work

6.3.5.3800. Those rooms, tools and equipment shall be identified, where performance of the work is, occasionally or always, qualified as major radiation hazardous work. The classification shall be regularly reviewed and updated.

6.3.5.3900. Those major radiation hazardous works (hereinafter referred to as:

KISUM), the performance of which is repeated under the same technical and personal conditions, typically under the same circumstances, can be managed as permanent KISUMs. In this case, a permanent KISUM work programme can be used to perform the work, if it can be justified according to the safety aspects.

6.3.5/K. Personal dosimetry monitoring

6.3.5.4000. The licensee shall ensure that personal radiation protection monitoring of the individuals within the controlled area takes place by passive and continuously readable, electronic dosimeters and, as needed, by beta and neutron dosimeters, and by accredited procedures for internal radiation exposure.

6.3.5.4100. The licensee shall ensure equivalent protection for the contractors and the authorities during their work at radiation hazardous workplaces in the same way as it is provided for its own employees.

6.3.5.4200. The personal radiation protection monitoring results:

a) shall be made available for the authority and the employer of external employees;

b) shall be made available for the employees of the facility;

c) shall be handed over to the occupational health service for evaluation.

6.3.5.4300. The personal dosimeters shall be worn by the employees at the radiation hazardous workplaces.

6.3.5.4400. The licensee shall provide an appropriately trained employee with due skill in the local radiation protection rules to accompany the visitors of the facility. The accompanying employee shall inform the visitors about the appropriate conduct and provide them with appropriate protective equipment.

6.3.5/L. Discharge monitoring

6.3.5.4500. The licensee shall develop and operate a programme to monitor the discharges and environmental radiation. The objective of the programme is to ensure the compliance with the regulatory requirements, including the conditions that existed during the derivation of the discharge limits. The environmental monitoring programme shall be suitable, with due reliability, to determine the radiation exposure of the critical group.

6.3.5.4600. The discharge and environmental monitoring system shall be designed to be able to detect, in near real time, any significant increase of discharge. The system shall provide a near real time notification of the detection.

6.3.5.4700. The radiation protection and the environmental monitoring systems shall be designed that the loss of one of their components shall not influence the operability of the other components of the system.

6.3.5.4800. Before commissioning the facility, the radiation protection and the

environmental monitoring systems shall be tested via a test programme that shall be as close as possible to the real situation. Meanwhile, consequences of accident situations shall be simulated, including failures and environmental conditions (temperature, overpressure, humidity, vibration, radiation).

6.3.5.4900. Effectiveness and efficiency coefficient of the filter equipment used during the operation of systems and components shall be regularly inspected and maintained.

6.3.5/M. Decontamination

6.3.5.5000. The potential for decontamination shall be provided at all locations, where radiation exposure of the personnel can be reasonably decreased. The need for decontamination shall be minimized by preventing leakages of radioactive media, closed design of the discharge, deaeration and overflow lines.

6.3.5.5100. Remotely operated decontamination devices shall be provided at the necessary location.

6.3.5.5200. Monitoring and, if necessary, decontamination of controlled areas, individuals entering and leaving the areas, protective clothes and the objects taken in and out shall be provided.

6.3.5.5300. The space and resource needs of decontamination shall not decrease the level of nuclear safety.

6.3.5.5400. During decontamination, the initial and final state to be achieved shall be determined and the actual final state shall be documented.

6.3.5.5500. The decontamination process shall be optimized, at least, as follows:

a) amount of generated secondary wastes;

b) personal radiation exposure;

c) effectiveness of decontamination.

6.3.5.5600. An appropriate room shall be provided for the equipment and tools that can be safely transported, where the decontamination can be performed without influencing nuclear safety.

6.3.5.5700. Appropriately trained personnel shall be ensured for conducting decontamination including a professional to direct the task who is skilled in decontamination.

6.3.6. Radioactive waste management

6.3.6.0100. The licensee shall implement the activities related to management of radioactive wastes in accordance with the parliament resolution on the national policy for spent fuel and radioactive waste management and the government resolution on the national programme for spent fuel and radioactive waste management, enforcing the aspects of nuclear safety and radiation protection,

keeping the quantity of radioactive materials discharged to the environment under the regulatory limits.

6.3.6.0110. The licensee shall implement the activities related to management of radioactive wastes in accordance with the parliament resolution on the national policy for spent fuel and radioactive waste management and the government resolution on the national programme for spent fuel and radioactive waste management, considering the plans regarding the future off-site management of the waste.

6.3.6.0200. The following shall be provided regarding radioactive wastes

a) the inspection of radioactive waste generation;

b) the collection, classification and storage of radioactive wastes, and their inspection;

c) the qualification of radioactive wastes;

d) the transport of radioactive wastes;

e) management of solid radioactive waste,

f) qualification of low and intermediate level radioactive waste packages to be transported from the site of the nuclear facility;

g) documentation, verification and supervision of items a)-f), including instrumentation and employees , and

h) existence of the necessary procedures, technology and requirements.

6.3.6.0300. The radioactive waste management activities shall be performed on the basis of written operational procedures approved by the management of the licensee that shall cover the whole radioactive waste management.

6.3.6.0400. The quantity and activity of radioactive wastes produced during operation shall be minimized.

6.3.6.0500. The storage of radioactive wastes shall be selective according to their activity concentration and physical state.

6.3.6.0600. Larger accumulation of radioactive wastes waiting for management or conditioning shall be avoided as justified.

6.3.6.0700. Isolation of radioactive wastes from the environment shall be ensured by the container types used for interim storage and final disposal of radioactive wastes for the determined storage duration.

6.3.6.0800. In the annual report, the amount of radioactive wastes generated in and transported from the facility during the year, and the amount of the radioactive waste stored in the facility at the beginning and end of the subject half

year shall be reported by waste types.

6.3.6./A. Airborne radioactive wastes

6.3.6.0900. An appropriate procedure shall be developed for the operation of the systems, structures and components suitable to manage airborne radioactive wastes to comply with the relevant limits and minimize the discharges. Those parameters that are critical to the effective operation of the system, shall be regularly monitored.

6.3.6.1000. Volatile radioactive materials shall be removed from the gaseous state radioactive wastes to the extent reasonably achievable.

6.3.6/B. Liquid radioactive wastes

6.3.6.1100. In the operation of the liquid waste processing systems, the composition and properties of the liquid shall be taken into account.

6.3.6.1200. The different types of wastes shall be separated, and the most effective processing shall be applied considering the principle of justification.

6.3.6.1300. The barrel or container suitable for conditioning the waste shall be filled, closed and labelled in a way that the packages are suitable for further management, transportation and disposal.

6.3.6/C. Solid radioactive wastes

6.3.6.1400. In the case of solid radioactive wastes, effort shall be made to provide representative sampling because of unhomogeneity when justifying the compatibility of the planned process.

6.3.6.1500. In the case of using mobile conditioning equipment measures shall be taken to prevent spread of contamination.

6.3.7. Inspection and examinations

6.3.7.0100. The activities related to management of radioactive wastes shall be implemented in accordance with the parliament resolution on the national policy for spent fuel and radioactive waste management and the government resolution on the national programme for spent fuel and radioactive waste management, considering the plans regarding the future off-site management of the waste.The change in natural and human induced events and conditions shall be monitored and regularly assessed during the entire lifetime of the nuclear facility in order to implement effective measures to maintain the risk at an acceptable level. The monitoring shall be commenced prior to construction and then continue until dismantling.

6.3.7.0200. Due to the rare occurrence and severe consequences of natural and human induced events and conditions considered during the design and in the safety analysis of the interim storage facility, the events, especially those occurring at similar sites or facilities shall be assessed during the entire lifetime of the

nuclear facility, in order to prevent their occurrence at the given facility.

6.3.7.0300. The meteorological conditions of the site shall be monitored throughout the service life of the nuclear facility.

6.3.7.0400. Ageing management programme shall be developed for the observation of the materials of buildings and building structures, and systems and system components important to nuclear safety, the execution of which shall identify the effects of radiation, mechanical, thermal and chemical loads on the states of structural materials and welds, and consequently on the reliability of the operation of systems and system components important nuclear safety.

6.3.7.0500. The buildings and building structures, and systems and system components important to nuclear safety shall be examined in the scope and with the frequency as determined by the background documents of operation, in compliance with the conditions and requirements for the examinations.

6.3.7.0600. An execution programme shall be established for the examinations of buildings and building structures, and systems and system components important to nuclear safety. The assessment of examination results and the identification and execution of the necessary safety measures shall be performed in accordance with internal rules.

6.3.7.0700. The existence of structural materials, applied media and the required values of the physical and chemical properties of the inert gas surrounding the fuel assemblies shall be continuously verified; these values shall be maintained within limit values. The structures shall be maintained and replaced during operation.

6.3.7.0800. The examination results shall be assessed on the basis of

a) the compliance with acceptance criteria for examinations;

b) the compliance with the requirements for the examined system, system component;

c) the ability to perform the safety function; and

d) the reliability of the performance of the safety function.

6.3.7.0900. The deviations from the "0" state and the preliminary examination results shall be determined based on the examination results; the changes shall be evaluated from the viewpoints of the performance of the safety function and the safety of the interim storage facility.

6.3.7.1000. The environment of buildings and building structures, and systems and system components important to nuclear safety shall be regularly inspected in order to verify the compliance with the assumptions relating to the operational environment as considered in safety analyses.

6.3.7.1100. If the examination results reveal any nuclear safety related deficiency,

then it shall be eliminated by the identification and execution of appropriate measures.

6.3.7.1200. The execution of examinations, their results, as well as the measures identified to eliminate the deficiencies and the characteristics of their execution shall be documented.

6.3.7.1210.If the documentation pursuant to Para 6.3.3.0040. was not prepared during commissioning, then the "0" state of systems, structures, components and experimental devices shall be assessed for the effective execution of the tests; the ability to compare test results shall be ensured.

6.3.7.1220.The evaluation of inspection results, the process of the identification, implementation and inspection of the necessary repair and preventive measures shall be regulated in writing.

6.3.7.1300. The examination programmes elaborated based on the documents substantiating the operation of the nuclear facility shall be regularly and if necessary revised to feed back the experience of application and to follow the development of examination methods.

6.3.7.1400. The requirements for buildings and building structures, and systems and system components important to nuclear safety shall be applied to primary tools needed for emergency response.

6.3.8. Pressure retaining equipment and pipelines

6.3.8.0100. A precondition for putting into operation and operation of pressure retaining equipment and pipelines falling under regulatory licensing procedures shall be the valid and successful periodic in-service technical safety inspection. A pressure retaining component or pipeline shall not be put into operation and shall not be operated, if its repair, modification or extraordinary inspection was not performed as planned.

6.3.8.0200. A pressure retaining component or pipeline having unsuccessful in-service inspection can only be put into operation, if the cause of unsuccessfulness was eliminated and the inspection was repeated with successful result.

6.3.8.0300. The licensee shall operate an approved quality control procedure, which establishes the requirements for conduct, the method of execution and conditions for documentation of examinations at the manufacturer, prior to putting into operation at the first time, as well as for regular and extraordinary examinations in connection with manufacturing, maintenance, repair and operation of pressure retaining equipment and pipelines; such examinations are

a) the structural examination,

b) the integrity and hydrostatic pressure test,

c) the opening pressure and leaktightness test,

d) the inspection of functionality and operability,

e) the operational checks, and

f) the extraordinary tests and programmes.

6.3.8.0400. The examinations shall be performed according to approved programmes, which are approved by the authorized organizational unit of the licensee.

6.3.8.0500. Subsequent to any extraordinary event, the licensee shall re-demonstrate the safety functions and the functional integrity of the affected systems and system components; the necessary corrective measures, including inspection, testing, maintenance and repair shall be executed.

6.3.8.0600. If such an event occurred that may have effect on leaktight conditions, then the boundary of the pressure retaining equipment shall be checked prior to putting back to operation.

6.3.8.0700. The pressure retaining boundary of the pressure retaining equipment shall be subject to integrity test at the end of each major inspection cycle.

6.3.8.0800. Every pressure retaining equipment and pipeline shall have passport. The passport shall include the basic technical and administrative data, which characterize the pressure retaining equipment and pipeline and justify the operability.

6.3.8.0900. The passport shall be actualized subsequent to any inspection, modification and repair.

6.3.8.1000. The licensee shall ensure all the human, material, labour safety, safety and technical conditions for the inspections of the inspection organization to perform them in a professional, safe and correct manner without disturbance.

6.3.8.1100.

6.3.9. Modifications

General requirements

6.3.9.0010. The licensee shall establish the procedural system guaranteeing the technical and safety adequacy of modifications and the compliance with nuclear safety requirements according to the life cycle of modifications as well as its significant phases, with the consideration of the following aspects:

a) the adequacy of activities connecting to a modification shall be assessed and justified both as a condition of execution and subsequent to the execution;

b) a Modification Form shall be prepared regarding the decided modification;

c) Modification Substantiating Documentation shall be prepared for the substantiation of the modification;

d) the Documentation Substantiating the Commencement of the Operation subsequent to the Modification shall be prepared and submitted to the nuclear safety authority, subsequent to the execution of the modification, but prior to the commencement of its putting into operation.

6.3.9.0100. The licensee shall regulate the conduct of modification related activities in internal rules fitting into its management system.

6.3.9.0200. The licensee shall guarantee the technical and nuclear adequacy of modifications and the compliance with the nuclear safety requirements by the system of independent reviews that are built onto each other.

6.3.9.0210. The modification shall not decrease the level of nuclear safety.

6.3.9.0300. The modifications shall be supervised and the individual nuclear safety regulatory prescriptions shall be enforced by an independent organizational unit. The structure of the organizational unit shall be determined based on the tasks and the level of nuclear safety risk of the nuclear facility.

6.3.9.0400. The modifications shall be categorized according to their nuclear safety importance.

6.3.9.0500. The licensee shall guarantee the technical and nuclear safety adequacy of the modifications and the compliance with the nuclear safety requirements by the application procedures that are graded according to modification categories.

6.3.9.0600. The licensee shall execute the modifications with the assessment of their nuclear safety consequences and the demonstration of the compliance with the following modification related requirements:

a) the nuclear safety consequences shall be assessed with the consideration of the aim and scope of the modification as well as of the modification relevant requirements, then based on the results the preliminary safety assessment supporting the categorization shall be prepared;

b) for modifications in Category 1 and 2, with the consideration of the background documents of the execution plan and the purchase, the adequacy of the planned modification and the compliance with the relevant requirements shall be demonstrated by safety analysis; and

c) for modifications in Category 1 and 2, as a condition for the commencement of activities of putting into operation, the adequacy of the planned modification, the compliance with the modification relevant requirements and the safe operability of the interim storage facility with the modified system shall be demonstrated by a comprehensive safety assessment.

6.3.9.0700. The licensee, with the application of a procedure fitting into its management system, shall classify those modification to Category 1, which can be characterized by at least one of the below listed features:

a) the modification has significant effect on the radiation risk of the persons staying on the site of the interim storage facility or the population;

b) the modification alters those principles and conclusions, which served as basis for the design and licensing of the nuclear facility;

c) the modification alters the scope of design basis accidents or their evolution;

h) the modification alters such technical solutions, which are necessary for the fulfillment of the safety objectives identified in the Nuclear Safety Code.

6.3.9.0800. The licensee, by the application of a procedure fitting to its management system, shall classify those modifications to Category 2, which are not classified either to Category 1 or 3.

6.3.9.0900. The licensee, by the application of a procedure fitting to its management system, shall classify those modifications to Category 3, which can be characterized by at least one of the following attribute:

a) the modification cannot not have nuclear safety consequences, thus the assessment of potential consequences is not justified;

b) the components belonging to the scope of the modification are not important according to the safety classification and cannot cause decrease of safety functionality ;

c) the components belonging to the scope of the modification do not belong to the scope of components important to nuclear safety and there are no regulatory licences containing requirements for them;

d) the modification, even in the case of a design or execution defect, cannot entail increase in the fuel damage frequency;

e) the modification, even in the case of a design or execution defect, cannot not entail significant increase in the radiation exposure to people being at present on the site of the interim storage facility or to the public.

6.3.9.1000. In order to maintain the stability of operation, the licensee may modify the systems, structures or component with important or major importance to nuclear safety, organizational structure and the management system only if it is substantially justified.

Preparation, execution, review and documentation of modifications

6.3.9.1100. Being aware of the objective, scope and modification relevant requirements, the licensee shall prepare a safety assessment of the modification

related nuclear safety consequences, and then carry out the categorization of the modification. Based on the safety assessment performed on the basis of the Final Safety Analysis Report and on the identified category, the licensee shall fill in the Modification Form. The above described preparatory activity shall be followed by a documented internal review; accordingly, the evaluation of the preparatory activity of the technical modification shall also be documented.

6.3.9.1200. The further preparation and execution of the modification shall be performed being aware of the category of the modification determined as described above and agreed with the nuclear safety authority.

6.3.9.1300. Documentation Substantiating the Modification shall be prepared based on

a) technical designs serving as basis for the detailed execution planning of technical modifications of systems and system components;

b) the determination of conditions needed for the preparation and application of the modified versions of regulating documents, if they are modified independently of the technical modification; and

c) the preparation of new and altering internal rules and determination of conditions and processes needed for the introduction if the organizational structure and the management system is to be modified.

6.3.9.1400. Concerning category 1 and 2 technical modifications, when the so categorized documents shall be subject to regulatory approval or when the organizational or management system is modified, a comprehensive safety evaluation of graded content shall be performed in harmony with the nature of the modification for the development of the Documentation Substantiating the Modification. This documentation shall take into account every such safety effect of the modification that will occur during the modification and after its execution. The Documentation Substantiating the Modification shall justify that the concept of the modification is in compliance with the legal requirements, and that the full meeting of the internal regulations of the nuclear facility makes the execution of the modification and the operation of the modified system, structure, component, and organization, as well as the application of the modified document and management system safe.

A guideline is provided with regard to the structure and content of the Documentation Substantiating the Modification.

6.3.9.1500. Concerning every modification in Category 1 and 2, the Documentation Substantiating the Modification and its background documentation shall be subject to a documented independent technical expert review.

6.3.9.1600. The Documentation Substantiating the Modification and its

background documentation and the documents of the independent technical expert review shall be approved by that organizational unit of the licensee, which supervises the modifications.

6.3.9.1700. The selection of components during modifications shall be performed in compliance with the requirements relevant to the seismic safety and safety classification; this process shall be supported by the configuration management system of the licensee. Qualified products shall be used for repairs and reconstructions.

6.3.9.1800. The licensee shall complete f the modification related training programme and update the operational documents before putting into operation of the modified system . The effect of modification shall be analyzed and described to the employees.

6.3.9.1900. In addition to analyses, the adequacy of the modified system, structure and component, and the safe operability of the interim storage facility with the modified system shall be demonstrated by practical examinations, tests and the assessment of the operating experience.

6.3.9.2000. A precondition of the execution of the modification related to the organizational structure, the management system, or to the technical and regulating documents is that the actual versions of the regulating documents describing the operation of the nuclear facility in general and in details shall be available, and the workers shall be aware of the changes occurred in the regulation due to the change of the organization.

6.3.9.2100. Subsequent to the execution of the technical modification (prior to putting into operation and test operation) the licensee shall prepare the Documentation Substantiating the Commencement of the Operation subsequent to the Modification based on the documents of the execution of the modification. The Documentation Substantiating the Commencement of the Operation subsequent to the Modification shall demonstrate that the execution of the modification is in full compliance with the technical and quality requirements. Guidance is provided with regard to the structure and content of the Documentation Substantiating the Commencement of the Operation subsequent to the Modification.

6.3.9.2200. Before implementation of a modification of the organizational structure, management system, technical and regulating documents, a summary description shall be prepared and submitted to the authority to describe the completed preparatory actions and their compliance with the requirements. A guideline is provided with regard to the structure and content of the summary description.

6.3.9.2300. The Documentation Substantiating the Commencement of the Operation subsequent to the Modification and the summary description and their

background documents for every modification in category 1 shall be subject to a documented independent expert review.

Completion of modifications and documentation of their experience

6.3.9.2400. A Modification Evaluation Report shall be prepared after the execution of every modification, which shall present and evaluate the design, purchase, assembly, training, putting into operation, initial operation, etc. experience gained with regard to preparation for and execution of the modification, as well as the modification process as a whole.

6.3.9.2500. The documentation substantiating the application for the modification of the operating license of the interim storage facility shall be prepared in parallel to the Modification Evaluation Report for a modification belonging to Category 1 by taking account of *Para 1.2.5 of Volume 1 of the Nuclear Safety Code*.

6.3.9.2600. The information flow shall be continuous between the workers and the management in order to describe, evaluate the introduced modification and to feedback the experiences and to prepare for the corrections, if appropriate. The concerned external organizations shall be involved into this process.

6.3.10. Maintenance

6.3.10.0100. The practical compliance with the design data taken into account in the documents substantiating the operation of the nuclear facility with regard to the technical characteristics of buildings and civil structures, and systems and components important to nuclear safety shall be provided by the execution of maintenance.

6.3.10.0200. The systems and system component important to nuclear safety shall be maintained with the frequency defined in the documents substantiating the operation of the nuclear facility.

6.3.10.0300. The systems and system component important to nuclear safety shall be maintained by the application of approved programmes and according to plans; the experiences shall be evaluated, the necessary measures shall be identified and implemented, the implementation shall be verified according the approved rules.

6.3.10.0310.The licensee can implement the maintenance programme or its certain parts with the involvement of contractors; however, the licensee shall take full responsibility for the contracted activities as well.

6.3.10.0320. The licensee shall take responsibility for administrative, technical engineering and inspection activities during maintenance; special attention shall be paid to:

a) the organization of maintenance activities, compliance with radiation dose

limits with the consideration of the as low as reasonably achievable principle; and

b) meeting the requirements for clean assembly.

6.3.10.0400. Subsequent to the maintenance of system components important to nuclear safety, as a condition for putting into operation, the compliance with the technical, qualification and quality management requirements for the components and the installation location shall be demonstrated.

6.3.10.0500. The experience gained during the maintenance of systems and system components important to nuclear safety shall be evaluated with regard to the following aspects

a) ability to perform the safety function,

b) reliability of the safety function performance,

c) occurrence of unanticipated failure phenomena, and

d) effectiveness of the applied maintenance technology.

6.3.10.0600. If the evaluation of the maintenance experience reveals a nuclear safety relevant deficiency, then the deficiency shall be eliminated by the identification and implementation of the necessary measures.

6.3.10.0700. The maintenance of systems and system component important to nuclear safety, its results, the evaluation of its results, as well as the measures identified for the elimination of the deficiencies and the characteristics of the execution of such measures shall be documented.

6.3.10.0800. The systems and system components shall be maintained by taking account of the designer and manufacturer instructions, as well as of the results of in-service inspections. In order to apply state-of-the-art maintenance technologies, the maintenance programmes shall be regularly and, if needed, by utilizing the operating experience, reviewed.

6.3.10.0900. As a part of the preparation for the replacement of components, the quantity of the necessary spare parts shall be determined with the consideration of the designer and manufacturer prescriptions, and commissioning, operational, examination and maintenance experience; the determined quantity of spare components shall be available with the appropriate storage conditions.

6.3.10.1000. The keeping of components in reserve shall be performed according to approved rules.

6.3.10.1100. The adequacy of spare components shall be demonstrated prior to installation by the assessment of the compliance of the spare components with the technical specifications and of the installation locations with the technical, qualification and quality management requirements.

6.3.10.1200. The ageing of components stored as spare parts shall be considered

during the planning of maintenance activities.

6.3.10.1300. The requirements for systems and system components important to nuclear safety shall be applied for primary tools of emergency preparedness.

6.3.10.1400. In the frame of the maintenance of the general housekeeping:

a) the disassembled cabinets, frame fastening elements shall be recovered to their design states after maintenance;

b) the anchors, fixing bolts, pipeline supports, and vibration dumpers requiring maintenance and inspection shall be recovered to their design states after maintenance; and

c) the maintenance tools shall be stored safely and in order in the service areas.

6.3.10.1500. The regular testing, maintenance, inspection and monitoring of the integrity and functionality of systems and system components important to nuclear safety shall be planned in such a way that they shall not cause unjustified risk to the workers and reduce the availability of the systems. If this cannot be realized, then justified alternative or indirect methods shall be identified, and measures shall be implemented to compensate the risk induced by potentially unrevealed deficiencies.

6.3.11. Execution of repairs and replacements

6.3.11.0100. The execution of repair activities on components shall not reduce the safety of the interim storage facility.

6.3.11.0200. Subsequent to the maintenance of a system component important to nuclear safety, as a condition for putting into operation, the compliance with the technical, qualification and quality management requirements for the components and the installation location shall be demonstrated.

6.3.11.0300. The components important to nuclear safety shall be repaired according to approved repair programmes.

6.3.11.0400. The experience gained from repair actions shall be assessed with regard to the following aspects

a) the applied repair technology,

b) the technical condition of the repaired system, and

c) the ability of the repaired components to perform their safety functions and adequacy of the reliability of the safety function performance.

6.3.11.0500. The execution of repair of components important to nuclear safety, and the assessment of the experience gained from the repair activity shall be

documented.

6.3.11.0600. In order to utilize the experience and apply state-of-the-art repair technologies, the repair technologies developed on the basis of designer and manufacturer specifications shall be reviewed regularly and if needed.

6.3.11.0700. As a part of preparation for the replacement of components, the quantity of the necessary spare parts shall be determined with the consideration of the designer and manufacturer prescriptions, and operational, examination and maintenance experience; the determined quantity of spare components shall be available.

6.3.11.0800. Keeping of components in reserve shall be performed according to the management system and approved rules of the licensee.

6.3.11.0900. The licensee shall monitor the availability of spare components and operate with such a procedure that guarantees the usability and prevention and monitoring of the potential ageing processes of spare components.

6.3.11.1000. Only such spare components can be installed, which are adequately stored, documented and checked and are in compliance with the same requirements applied to original ones.

6.3.12. Ageing management

6.3.12.0100. The ageing of system components important to nuclear safety shall be maintained by the application of adequate procedures in order to ensure the continuous performance ability of the safety function and the nuclear safety of the operation of the interim storage facility.

6.3.12.0200. The ageing of system components important to nuclear safety shall be maintained by the application of approved programmes and according to the plans; the experience shall be evaluated, the necessary measures shall be identified and executed, the execution shall be verified according to approved rules.

6.3.12.0210.The interim storage facility, during its entire service life, shall have a comprehensive ageing management programme which:

a) identifies every potential ageing mechanism of systems, structures and components important to nuclear safety;

b) determines the potential consequences of the mechanisms;

c) determines and implements the actions needed for preventing the occurrence of ageing mechanisms, mitigating their consequences and for monitoring the progress of the degradation; and

d) the comprehensive ageing management programme shall be in harmony with the procedures of operation, maintenance, repair, inspection activities and tests, as well as with the component qualification procedures and with timely taking

necessary preventive, corrective actions.

6.3.12.0300. The experience gained in connection with the ageing management of components important to nuclear safety shall be assessed with regard to the following aspects

a) ability to perform the safety function,

b) reliability of safety function performance,

c) occurrence of anticipated ageing effects,

d) occurrence of unanticipated ageing effects, and

e) adequacy of the applied ageing management procedure.

6.3.12.0400. If the assessment of the experience gained from ageing management reveals any nuclear safety relevant deficiency or its potential occurrence, then measures shall be identified and implemented to maintain and guarantee the nuclear safety of the nuclear facility.

6.3.12.0410. Such database shall be operated for the effective ageing management programme, which is applicable to collect, store, analyse the information in connection with systems, structures and components belonging to the scope of the programme, as well as to support the identification, optimization and coordination of the implementation of the necessary actions.

6.3.12.0500. The implementation of the ageing management activity and the related experience and its evaluation, as well as the measures identified to eliminate potential deficiencies and their implementation shall be documented.

6.3.12.0600. In order to utilize the experience gained during operation, examinations, maintenance and ageing management and to apply state-of-the-art repair technologies, the repair technologies developed on the basis of designer and manufacturer specifications shall be reviewed and updated regularly and if needed. Accordingly, any new information revealed in the meantime shall be managed, the tools and methods developed further in the meantime shall be taken into account, and the effectiveness of the maintenance practice applied during the operation of the research reactor shall be evaluated. The previously assumed effects of degradation processes shall be compared with the monitoring results during the revision; corrective actions shall be implemented, if appropriate.

6.3.12.0700. The requirements for the ageing management of components important to nuclear safety shall be applied to spare components stored for the execution of technical maintenance.

6.3.13. Maintenance of the qualified state of components

6.3.13.0100. The qualified state of system components important to nuclear safety belonging to the scope of environmental qualification shall be maintained during the operation of the interim storage facility in order to ensure the

continuous ability of the components to perform their safety functions as well as the nuclear safety of the operation of the interim storage facility.

6.3.13.0200. The qualified state of system components important to nuclear safety belonging to the scope of environmental qualification shall be maintained by the application of approved programmes, according to plans. These programmes shall be elaborated and their effectiveness shall be evaluated based on approved rules.

6.3.13.0300. The effectiveness of the activities ensuring the maintenance of the qualified state of components shall be documented and evaluated; the activities shall be reviewed periodically or if needed to modernize the relating procedures.

6.3.13.0400. It shall be verified whether the conditions applied during component qualification covers the environmental conditions occurring during normal operation, anticipated operational occurrences and design basis accidents, in order to guarantee that the environmental resistance of the component as assumed during the design has not changed adversely during the operation.

6.3.14. Evaluation of the safety performance of operation

6.3.14.0100. The safety of the operation of the interim storage facility shall be regularly reviewed to reveal the safety relevant deficiencies and to identify the necessary measures, in order to eliminate such deficiencies.

6.3.14.0200. The safety of operation shall be reviewed in the scope of the influencing aspects in a way that every aspect shall be considered within the period of operation between two Periodic Safety Reviews.

6.3.14.0300. The topics having influence on the safety of operation shall be identified as follows:

a) technical condition of the nuclear facility;
b) component qualification and maintenance of the qualified state;
c) ageing management;
d) scope, content and actual state of safety analyses;
e) characteristics of safe operation and utilization of own operating experience;
f) utilization of operating experience of other facilities and of research and development results;
g) procedures;
h) organizational and administrative factors;
i) human factors;
j) emergency preparedness;
k) environmental effects;

l) radiation exposure to people staying on the site of the interim storage facility; and

m) hazard factors.

6.3.14.0400. The topics shall be revised based on the relevant nuclear safety requirements, relevant standards and authoritative recommendations.

6.3.14.0500. The revision of the topics shall be scheduled and the regularity of the revision of certain topics shall be determined with the consideration of the experience gained during the performance of operation related activities; the adequacy of scheduling shall be reviewed annually and according to the development of the requirements that are relevant to the topics.

6.3.14.0600. If the revision of the topics reveals a nuclear safety relevant deficiency, then these deficiencies shall be eliminated by the identification and implementation of the necessary measures.

6.3.14.0700. The review of safe operation, the implementation of measures and the verification of implementation shall be performed according to approved rules, by the application of the approved revision programmes.

6.3.14.0800. The conduct of the safety revision and its results, the evaluation of these results, the measures identified to eliminate the potential deficiencies and the specific of their implementation shall be documented.

6.3.15. Fire protection

6.3.15.0100. The licensee shall comply with the legislation on the specific requirements in connection with the use of atomic energy and the enforcement methods of these requirements during the activity of the authorities. The licensee, in cooperation with competent national, regional and local organizations, shall prepare for the protection against fire and the technical rescue.

6.3.15.0200. The workers shall support the fire fighters to commence, as soon as possible, the fight against the fire on the spot of the fire. Consequently, fire protection rules and a fire alarm plan shall be developed for the entire site of the nuclear facility.

6.3.16. Event reporting and investigation

6.3.16.0100. The licensee shall prepare event reports on reportable events.

6.3.16.0200. The workers shall be obliged to report the reportable events, and the so-called near misses that are hazardous situations in connection with the nuclear safety of the nuclear facility.

6.3.16.0300. As a part of the establishment of the operational conditions of the reporting system, the licensee shall provide the event investigation and analysis tasks that are necessary for preparing the event report, and the determination of those persons, who are authorized to report the events to the nuclear safety

authority.

6.3.16.0400.

6.3.16.0500. The licensee shall have a procedure determining the appropriate investigation methods, which includes methods to analyse the human factor.

6.3.16.0600. The event investigation shall

a) identify the part events in time sequence;

b) compare the event with previous similar domestic and foreign events;

c) evaluate the nuclear safety influence, the real and potential consequences;

d) evaluate the activity of the workers and the management, the adequacy of the internal rules and procedures;

e) identify the deviations and the nuclear safety consequences of the event;

f) include the identification of direct, contributing and root causes of the event and

g) determine the corrective measures to be implemented to prevent the occurrence of similar events and to eliminate deviations.

6.3.16.0700. The licensee shall keep contact with organizations taking part in the design and construction, in order to feed back the operating experience and to request assistance in the case of a component failure or event, if appropriate.

6.3.16.0800. Corrective actions bound to deadlines shall be identified as a result of the analysis to recover the safety, prevent the recurrence of the event and, if necessary, to enhance safety.

6.3.17. Operating experience

6.3.17.0100. The licensee shall develop and implement a systematic programme for the regular and continuous collection, screening, analysis and documentation of operational data, operating experience and operational events throughout the commissioning, operating and decommissioning phases of the nuclear facility. Operating experience and operational events reported by other operators, if relevant to the facility, shall also be regularly and continuously collected, screened, analysed and documented.

6.3.17.0200. Based on the above information, the state of the nuclear facility shall be analysed and evaluated in order to:

a) maintain and improve the safety level of operation, by identification and implementation of corrective measures, if necessary;

b) reveal every hidden, nuclear safety relevant failure, potential precursor event or deviation, which lead or may lead to the real or potential failure of defence in depth, especially the near misses;

c) reveal any tendency leading towards decreasing safety performance or safety margin; and

d) substantiate the decommissioning plans.

6.3.17.0300. During the analysis and evaluation of operating experience, primary attention shall be paid to the investigation and root cause analysis of nonconformities and safety related events experienced during operations (including maintenance, repair, inspections and reviews), as well as to the determination of the severity of their actual and potential consequences, and to the identification of the necessary measures to avoid similar nonconformities.

6.3.17.0310. In order to identify nonconformities, the operator shall regularly review the actual design, and if the operational experience changes or a new safety related information rises by the application of both deterministic and probabilistic approaches, in the mirror of the effective requirements and practice. The significance of the identified nonconformities shall be determined in the mirror of the properly substantiated potential design improvements, corrections or other measures.

6.3.17.0400. The licensee shall appoint suitable workers to implement the programmes, to distribute new safety important information, and if appropriate for the development of recommendation on actions. The more significant opinions and trends shall be reported to the top management of the licensee.

6.3.17.0500. The workers responsible for the evaluation of operating experience and investigation of events shall receive appropriate training and resources. Their work shall be supported by the top management.

6.3.17.0600. The licensee shall ensure that results are produced, the necessary conclusions are deducted, the measures are implemented, good practices are contemplated and effective and timely corrective actions are executed to prevent recurring problems and evolving occurrences that are adverse to nuclear safety.

6.3.17.0700. The licensee shall have appropriate rules regarding the content, scope and methodology of the collection, analysis and documentation of operational data and experience. The information shall be stored in such a way that provides easy access, systematic searching, screening and evaluation possibilities for those assigned.

6.3.17.0800. The list of safety issues revealed shall be continuously maintained, together with the methods of solution and the planned actions.

6.3.17.0900. The top management of the licensee shall continuously monitor the list and deadlines of planned actions. The planned actions shall be modified, if appropriate, by taking account of new experience.

6.3.17.1000. The information learned from operating experience shall be available for the workers and the competent national and international

organizations.

6.3.17.1100. The licensee shall request information on experience of other facilities and from other national and international organizations interested in the application of atomic energy. This information shall be utilized after appropriate evaluation by taking account of the specific nature of the interim storage facility.

6.3.17.1200. The effectiveness of the operating experience feedback process shall be regularly reviewed based on performance criteria and shall be documented in the frame of the self-assessment programme of the licensee or an independent review requested by the licensee.

6.3.17.1300. Such process shall be developed, which guarantees the appropriate utilization of operating experience regarding events occurred in the interim storage facility or in other facilities in the training programme of the workers.

6.3.17.1400. The new data, scientific results and reports on operating experience of other facilities shall be continuously assessed and utilized in the entire service life of the nuclear facility.

6.3.17.1500. The design and residual lifetimes of systems and components important to nuclear safety shall be compared based on the analysis of safety indicators and trends; the results shall be taken into account during the planning of in-service inspections, replacements and reconstructions.

6.3.17.1600. All available operational data and experience shall be utilized when making decisions on modifications as well as during the planning of modifications.

6.3.17.1700. The probabilistic based analysis shall take account of the operating experience to better specify the input data.

6.3.17.1800. The safety indicators applied to the operation of the nuclear facility shall be regularly assessed, and then corrective measures shall be identified, if appropriate.

6.3.17.1900. The operating experience shall be taken into account during the review of operational documents.

6.3.17.2000. The licensee shall take care of the systematic analysis and application of the relevant operational experience, the international evolution of safety standards and of new results of R&D projects, in order to further improve the operational activity.

6.3.18. Operational documentation

6.3.18.0100. For systems, structures and components important to nuclear safety a qualification procedure or other method shall be used to ensure that data ara available collected from manufacturing, inspection, review, operation and maintenance during the service lifetime in order to justify the safe conditions.

6.3.18.0200. The licensee shall establish documentation rules for maintenance

and repair activities, with the consideration of the minimum aspects listed below:

a) it shall prepare for identification, classification and registration of defects occurring during operation or revealed during inspections;

b) it shall determine the conditions for taking systems and components scheduled for maintenance out of service, the methods of preparation and approval of such activities;

c) taking into account the ageing processes, it shall maintain the qualified state via scheduling of the maintenance and repair activities of systems, structures and components and experimental devices ; and

d) shall document the maintenance and repair activities to make possible the subsequent evaluation and the subsequent assessment of responsibilities.

6.3.18.0300. The licensee shall have written procedure on the management of the operational documentation relating to the whole service life of systems, structures and components and experimental devices important to nuclear safety.

6.3.18.0400. The rules of documentation management shall cover:

a) technical scope: list of systems, structures components and activities concerned by the regulation;

b) scope of the document: list of and reference to documents concerned by the regulation;

c) identification of documents;

d) rules of preparation, checking, approval and issuance;

e) rules of modification and withdrawal;

f) rules of use and archiving,

g) rules of regular review of the document, and

h) if more than one organizational unit is concerned by the preparation, use and archiving of an operational document, then the rules of harmonization among documents of various organizational units and the transfer of documents between organizational units shall be defined.

6.3.18.0500. The documents prepared in relation to operation shall be gathered, archived and stored until the end of the service life of the research reactor in compliance with the relevant requirements.

6.3.18.0600. The documented information shall at all times conform to the physical configuration of systems, structures and components of the nuclear facility and both shall comply with the design requirements. The conformity shall

be ensured during the whole life cycle.

6.3.19. Accountancy

6.3.19.0100. The licensee shall establish and operate an accountancy system recording the place and characteristics of every fuel assembly stored in the interim storage facility, including its owner and origin.

6.3.19.0200. The licensee shall apply such tagging system, which ensures the individual identification of every fuel assembly during the period of interim storage.

6.3.19.0300. The licensee shall apply such system, which provides up-to-date information on the inventory of fuel assemblies stored within the interim storage facility.

6.3.19.0400. The owner shall provide the protection and up-to-date state of sufficient information on the condition under interim storage to support the management of the fuel assemblies and the implementation of the final disposal strategy.

6.3.20. Emergency preparedness

On-site emergency preparedness

6.3.20.0100. In the case of an emergency having effect on the site, the emergency preparedness of the nuclear facility shall provide the necessary conditions for the coordinated and effective management at the appropriate time and place, with appropriate command and control; the licensee shall be able to utilise the available resources in a trained and practiced manner.

6.3.20.0200. The licensee together with the competent central, regional and local organisations shall prepare for the response to accidents resulting in significant radioactive release and the mitigation of the consequences.

6.3.20.0300. The licensee shall establish a nuclear emergency response organization with appropriate responsibilities and competencies that is prepared to act in emergency situations and is able to fulfil its tasks from decision making to operative activities in all phases of an emergency situation. The manager of the nuclear emergency response organization is the top manager of the nuclear facility or his/her fully authorized representative. Persons shall be designated in advance to each position of the organization. The number of staff for the emergency response organisation shall be defined in a way that guarantees a sufficient number of trained personnel available for performing the emergency response activities. The operation of the organisation as well as its certain actions shall be regulated in properly approved documents.

6.3.20.0310.During the period of nuclear emergency preparedness, the licensee shall be responsible for the maintenance of tools, facilities and documentation

necessary for nuclear emergency response activities, the regular inspection of their suitability, the planning and conduct of emergency response trainings and drills, as well as for the communication with external institutions.

6.3.20.0400. The licensee, with the consideration of effective regulations and the lessons learned from operation and exercises, shall develop and continuously update the Nuclear Emergency Preparedness and Response Plan for the site of the facility while ensuring its consistency with legislations, national, regional and local nuclear emergency preparedness and response plans, international recommendations, and with the fire protection plan of the nuclear facility as well as with plans relating to the protection against other catastrophes. The Nuclear Emergency Preparedness and Response Plan shall include response actions to each emergency resulting in radioactive material discharge or radiation exposures that are identified in safety analyses. The Nuclear Emergency Preparedness and Response Plan and the subordinated documents shall regulate the activities required to be performed in any operational phase of the nuclear emergency response organization.

6.3.20.0500. The licensee shall be prepared to identify nuclear emergency situations and immediately start emergency response activities. Accordingly, it shall develop an emergency classification system. A guideline including recommendations on the establishment of the emergency classification system is available.

6.3.20.0600. A worker shall always be available on the site of the nuclear facility with the authority and responsibility to promptly classify the nuclear emergency, and upon classification to announce the nuclear emergency and its termination, to initiate emergency response actions and to notify off-site organisations. Additionally, this worker shall be responsible for the prompt performance of these tasks; the information necessary for effective action shall be at his/her disposal; he/she shall have commanding competencies as well as tools necessary for the execution of the aforementioned tasks.

6.3.20.0610.The nuclear emergency preparedness activities of the nuclear facility shall be in harmony with the preparation for the response to conventional emergencies.

6.3.20.0700. An effective alarm and communication system shall continuously be available in the nuclear facility to alarm and direct the persons staying on the site as well as the external contacts in the case of an emergency.

6.3.20.0800. The licensee shall prepare for alarming the public, developing protective actions and for providing professional assistance to the defence committees responsible for off-site emergency response.

6.3.20.0900. The licensee shall prepare for the mustering of persons being at present on the site, the identification of actions to be implemented on the site, the

provision of the protective tools required for the implementation of the protective actions, the protection of the people involved in emergency response, as well as for the assistance of persons contaminated or exposed to radiation in the extent possible under emergency conditions.

6.3.20.0910.The necessary tools for the execution of nuclear emergency response activities shall be placed close to the location of their expected use in a way that ensures their efficient use under the expected conditions.

6.3.20.1000. The licensee shall be prepared to analyse the emergency situation from technology and radiation protection viewpoints, to estimate the actual and future discharges and to prognose the consequences of the discharges.

6.3.20.1100. The licensee shall prepare to record the occurrences of the emergency situation, the executed measures and the contents of emergency communications; the licensee shall prepare to inform the public and the media as required by legislation.

6.3.20.1200. Basic training and refreshing training and exercises shall be organized, with the regularity defined in the regulation, for workers performing tasks in the emergency response organisation in order to make them familiar with and practice the emergency tasks assigned to them.

6.3.20.1210. It shall be ensured that the employees determined in the Nuclear Emergency Response Plan receive appropriate and regularly updated information about the health risks of their interventions, and about the protective actions to be taken in such a case. The information shall cover the full scale of potential emergencies and the type of interventions. When an emergency occurs, the information shall immediately and appropriately be updated considering the circumstances of the given special case.

6.3.20.1220. The licensee shall provide for the emergency training to the employees, that shall include practical training, as appropriate.

6.3.20.1300. Regular drills and exercises shall be organized to verify the preparedness of the emergency response organisation. The lessons learned from emergency drills and exercises shall be utilized during emergency preparedness. A full scope exercise involving the entire emergency response organization shall be organized at least once every two years, in which the off-site emergency response organizations shall also be involved.

6.3.20.1400. The licensee shall provide basic emergency response training for all persons who are authorized to be present at the site of the nuclear facility without supervision; the scope of the training shall include the emergency actions to be performed.

Emergency response

6.3.20.1500. The nuclear emergency response activity shall aim at mitigating the

consequences of the occurred nuclear emergency situation.

6.3.20.1600. The emergency response activity shall be performed according to the emergency response plan.

6.3.20.1700. The emergency preparedness organisation of the licensee shall immediately commence its activities after the announcement of the nuclear emergency situation; its activities shall be so organised and managed to avoid detaining or endangering the performance of safety functions and emergency response related actions.

6.3.20.1800. The emergency classification of the event shall immediately be followed by the implementation of the necessary on-site protective actions.

6.3.20.1900. The licensee shall provide useful, consistent and clear information to the public throughout the elimination of the nuclear emergency situation.

6.3.20.2000. The emergency response organization of the licensee shall continuously evaluate the evolution of the nuclear emergency from technology and radiation protection aspects. The licensee shall provide regular information on the results of the evaluation to the designated organizations of the national emergency response system in condition and technology information reports.

6.3.20.2100. If the facility shall be shut down in an unplanned manner due to an accident, its bringing to a safe state shall be in accordance with Paragraph 8.2.3.0100.