DS462

Amendments to the IAEA Safety Requirements:

- GSR Part-1 on Governmental, Legal and Regulatory Framework for Safety
- NS-R-3 on Site Evaluation for Nuclear Installations
- SSR-2/1 on Safety of Nuclear Power plants: Design
- SSR-2/2 on Safety of Nuclear Power plants: Commissioning and Operation
- GSR Part 4 on Safety Assessment for Facilities and Activities

Status
STEP 10: Second internal review

Below the text submitted to the MS for comments, you will find the set of individual comments and then the individual answers

The overall resolution is to be found on the right column, highlighted in yellow

Lessons learned	Current text	Proposal for MS consultation	Proposed resolution of MS comments after NUSSC WG meeting Track changes version, compared to what was submitted to the Member States for comments		
Country X Number of the comment	Proposed text	Rationale	Accepted	Accepted with modification	Rejected and reason
Country Y Number of the comment	Proposed text	Rationale	Accepted	Accepted with modification	Rejected and reason

In some cases, there are proposal for additional amendments not initially proposed by the IAEA. They are highlighted in Blue

Amendments to SSR-2/2

Lessons Learned	Current Text	Proposal for Member States consultation	Proposed resolution of MS comments		
ENISS general	Notion of "beyond design basis accidents" has been superseded by DEC (Design Extension Conditions) for existing NPPs (see SSR 2/1). The vocabulary of SSR 2/2 has to be modified to be consistent with SSR 2/1		**Accepted, See Canadian comments on Req. 19**		
	1.3 The present publication reflects the safety principles of the Fundamental Safety Principles [1]. It has been harmonized with IAEA Safety Standards Series No. GS-R-3 on The Management System for Facilities and Activities	No initial IAEA proposal but an agreement that these comments would be considered after MS consultation	1.3. The present publication reflects the safety principles of the Fundamental Safety Principles [1]. It has been harmonized with the IAEA Safety Standards Series publications No. ~~GS-R-3 on The Management System for Facilities and Activities~~ GSR Part 2 on Leadership and Management for Safety [2], No. SSR-2/1 Rev.1 on Safety of Nuclear Power Plants: Design [4], No. GSR Part 7 on Preparedness and Response for a Nuclear or Radiological Emergency [5], No. GSR Part 5 on Predisposal Management of Radioactive Waste [7], and No. GSR Part 6 on Decommissioning of Facilities [9].		
Germany SSR-2/2 1	1.3 The present publication reflects the safety principles of the Fundamental Safety Principles [1]. It has been harmonized with the IAEA Safety Standards Series publications No. GSR Part 2 on Leadership and Management for Safety [2], No. SSR-2/1 on Safety of Nuclear Power Plants: Design [4], No. GSR Part 7 on Preparedness and Response for a Nuclear or Radiological Emergency [5], No. GSR Part 5 on Predisposal Management of Radioactive Waste [7], and No. GSR Part 6 on Decommissioning of Facilities [9].	Clarification and completion. With respect to the harmonization with the IAEA Safety Requirements mentioned at the left, see our related proposals on • Para 5.7 (harmonization with GSR Part 7), • Paras 5.8 and 5.18 (harmonization with GSR Part 5), Requirement 33 (harmonization with GSR Part 6).	**Accepted**		
		No initial IAEA proposal			
Pakistan 1	Commissioning may be added wherever applicable in clauses 3.1, 3.2 (d), 3.2 (e), 3.8, 3.9, 3.11, 4.4, 4.25, 4.26, 4.52			**Accepted for next full revision of the document (comment not specific to Fukushima)**	
		No initial IAEA proposal			
Pakistan 2	**Requirement 1** **The operating organization shall have the prime responsibility for safety in the *commissioning and* operation of a nuclear power plant.**	Since commissioning and operation are different phases of a NPP and also in the scope of SSR-2/2 safe commissioning is included.		**Accepted for next full revision of the document (comment not specific to Fukushima)**	
(Editorial)	Requirement 3.2(c): Operating functions, which include executive decision making and actions for the operation of a plant for all operational states and accidents conditions.	Requirement 3.2(c): Operating functions, which include executive decision making and actions for the operation of a plant for all operational states and accidents conditions.	Requirement 3.2(c): Operating functions, which include executive decision making and actions for the operation of a plant for all operational states and accident conditions.		
Pakistan 3	3.2 (c) change *Commissioning stages and* operating functions, which include executive decision making and actions for *the commissioning and* operation of a plant for all *commissioning stages*, operational states and accident conditions.	Since commissioning and operation are different phases of a NPP and also in the scope of SSR-2/2 safe commissioning is included.		**Accepted for next full revision of the document (comment not**	

				specific to Fukushima)	
		No initial IAEA proposal			
Pakistan	**Requirement 4** **The operating organization shall be staffed with competent managers and sufficient qualified personnel for the safe *commissioning and* operation of the plant.**	Since commissioning and operation are different phases of a NPP and also in the scope of SSR-2/2 safe commissioning is included.		**Accepted for next full revision of the document (comment not specific to Fukushima)**	
		No initial IAEA proposal			
Pakistan 5	**Requirement 5:** **The operating organization shall establish and implement *commissioning and* operational policies that give safety the highest priority.**	Since commissioning and operation are different phases of a NPP and also in the scope of SSR-2/2 safe commissioning is included.		**Accepted for next full revision of the document (comment not specific to Fukushima)**	
		No initial IAEA proposal			
Pakistan 6	4.1 The *commissioning and* operational policies~~y~~ established and implemented by the operating organization shall give safety the utmost priority, overriding the demands of production and project schedules *by replacement or repair/maintenance of failed equipment*. The safety …	Failure of some equipment and its replacement or repair maintenance during commissioning may delay project		**Accepted for next full revision of the document (comment not specific to Fukushima)**	
		No initial IAEA proposal			
Pakistan 7	4.18 … Managers shall participate in determining the needs for training and in ensuring that *commissioning and* operating experience is taken into account in the training. Managers and super …	Commissioning experience is also beneficial and supportive during training		**Accepted for next full revision of the document (comment not specific to Fukushima)**	
	4.31 The responsibilities and authorities for restarting a reactor after an event leading to an unplanned shutdown, scram or major transient, or to an extended period of maintenance, shall be clearly established in writing. An investigation shall be carried out to determine the cause of the event and corrective actions shall be taken to make its recurrence less likely. Prior to the restart or the resumption of full power of the affected plant, the operating organization shall carry out necessary remedial actions, including inspection, testing and repair of damaged structures, systems and components, and shall revalidate the safety functions that might be challenged by the event. Restart conditions and criteria shall be established and followed after the timely implementation of the necessary corrective actions.	No initial IAEA proposal	4.31 … An investigation (root cause analysis wherever necessary) shall be carried out to determine the cause of the event and corrective actions shall be taken to make its recurrence less likely. Prior to the		
Pakistan 8	4.31 … An investigation (root cause analysis wherever necessary) shall be carried out to determine the cause of the event and corrective actions shall be taken to make its recurrence less likely. Prior to the	For some events root case analysis is required by regulatory body	Accepted		
43.1/	Requirement 4.44: Safety reviews shall be carried out at regular intervals. Safety	Requirement 4.44: Safety reviews shall be carried out at regular intervals. Safety reviews	Requirement 4.44: Periodic s~~S~~afety reviews or equivalent shall be carried out throughout		

43.2	reviews shall address, in an appropriate manner, the consequences of the cumulative effects of plant ageing and plant modification, equipment requalification, operating experience, current standards, technical developments, and organizational and management issues, as well as siting aspects. Safety reviews shall be aimed at ensuring a high level of safety throughout the operating lifetime of the plant.	shall address, in an appropriate manner, the consequences of the cumulative effects of plant ageing and plant modification, equipment requalification, operating experience, current standards, technical developments, and organizational and management issues, as well as ~~siting~~ site related aspects. Safety reviews shall be aimed at ensuring a high level of safety throughout the operating lifetime of the plant.	the life of the plant, at regular intervals as frequently as necessary, typically not less than once in 10 years. Safety reviews shall address, in an appropriate manner, the consequences of the cumulative effects of plant ageing and plant modification, equipment requalification~~,~~ own, national and international operating experience, current national and international standards, technical developments, and organizational and management issues, as well as site related aspects. Safety reviews shall be aimed at ensuring a high level of safety throughout the operating lifetime of the plant~~.~~		
USA 2 (NRR)	4.44 Safety reviews shall be carried out throughout the life of the plant, and at regular intervals.	Additional text added to emphasize the regulated body's responsibility to perform safety reviews throughout the entire lifespan of the plant	Accepted		
Hungary 1	4.44 Safety reviews shall be carried out at regular intervals. Safety reviews shall address, in an appropriate manner, the consequences of the cumulative effects of plant ageing and plant modification, equipment requalification, own and worldwide operating experience, current standards, technical developments, and organizational and management issues, as well as ~~siting~~site related aspects. Safety reviews shall be aimed at ensuring a high level of safety throughout the operating lifetime of the plant by using the international best practices.	Using of International experience is very important to improve of safety reviews. The proposed text better (broader) reflects the lesson learnt No. 43.1 in part of the understanding of natural hazards.		Accepted with modification	
46.15	Requirement 4.47: On the basis of the results of the systematic safety assessment, the operating organization shall implement any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards aiming at enhancing the safety of the plant.	Requirement 4.47: On the basis of the results of the systematic safety assessment, the operating organization shall implement any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards aiming at enhancing the safety of the plant~~.~~ and further reducing the likelihood and consequences of severe accidents.	Requirement 4.47: On the basis of the results of the systematic safety assessment, the operating organization shall implement any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards aiming at enhancing the safety of the plant ~~and~~ by further reducing the likelihood and consequences of ~~severe~~ accidents.		
USA 1 Case (RES)	4.47 "…likelihood and consequences of ~~severe accidents~~ accident conditions."	Current language is too restrictive to a very small portion of the accident spectrum.	Accepted		
Hungary 2	4.47 On the basis of the results of the systematic safety assessment, the operating organization shall implement any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards aiming at enhancing the safety of the plant and particularly further reducing the likelihood and consequences of severe accidents.	Generally this requirement is reducing the likelihood of all accidents, and the severe accidents here are emphasized especially.		Accepted with modification	
Pakistan 10	4.47 On the basis of the results of the systematic safety assessment, the operating organization shall implement any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards aiming at enhancing the safety of the plant and further reducing the likelihood and consequences of accident conditions ~~severe accidents~~.	Accident conditions cover severe accidents.	Accepted		
France 1	4.47 On the basis of the results of the systematic safety assessment, the operating organization shall implement any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards aiming at enhancing the safety of the plant ~~and~~ inter alia by further reducing the likelihood and consequences of severe accidents.	Reduction of likehood and consequences of SA is a part of safety enhancement		Accepted with modification	
		No initial IAEA proposal			

Canada **1**	**Requirement 13** **"The operating organization shall ensure that a systematic assessment is carried out to provide reliable confirmation that safety related items are capable of the required performance for all operational states, for design basis accidents, and, to the extent practicable, for design extension conditions. ~~and for accident conditions.~~"**	The requirement for EQ to include accident conditions means that full EQ is required for DECs. This exceeds the requirements of SSR-2/1 given below. SSR-2/1 para 5.48 "The environmental conditions considered in the qualification programme for items important to safety at a nuclear power plant shall include the variations in ambient environmental conditions that are anticipated in the design basis for the plant." SSR-2/1 para 5.27: "the design of the plant is such as to prevent accident conditions not considered design basis accident conditions, or to mitigate their consequences, **as far as is reasonably practicable**." and "The effectiveness of provisions to ensure the functionality of the containment could be analysed on the basis of the **best estimate approach**."			Not accepted The necessary EQ is addressed in SSR-2/1.In SSR2/2 only reliable confirmation for the operability of the equipment as necessary and in accordance with the initial EQ for all operational states is required
		No initial IAEA proposal			
Pakistan 9	**Requirement 13** **The operating organization shall ensure that a systematic assessment is carried out to provide reliable confirmation that safety related items are capable of the required performance for all *commissioning stages,* operational states and for accident conditions.**	Since commissioning and operation are different phases of a NPP and also in the scope of SSR-2/2 safe commissioning is included.		**Accepted for next full revision of the document (comment not specific to Fukushima)**	
44.1	Requirement 5.7: Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions. 7.8 The emergency control room and the shutdown panel and all other safety related operational panels outside the control room shall be kept operable and free from obstructions, as well as from non-essential material that would prevent their immediate operation. The operating organization shall periodically confirm that the emergency control room or the shutdown panel and all other safety related operational panels are in the proper state of operational readiness, including proper documentation, communications, alarm systems and habitability.	Requirement 5.7: Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for the accident management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions. The operating organization shall ensure that relevant safety parameter information is available in the emergency centre and technical support centre and communication is effective between the control rooms and these centres in accident conditions. These capabilities shall be tested periodically.	Requirement 5.7: Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those needed for off-site communication and the accident management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable ~~by,~~during accidents ~~conditions~~ for which they are needed. The operating organization shall ensure that relevant safety parameter information is available in the emergency centre and technical support centre and communication is effective between the control rooms and these centres in case of accidents ~~conditions~~. These capabilities shall be tested periodically. 7.8. The ~~emergency control room and the shutdown panel~~ supplementary control room and all other safety related operational panels outside the control room shall be kept operable and free from obstructions, as well as from non-essential material that would prevent their immediate operation. The operating organization shall periodically confirm that the ~~emergency~~ supplementary control room ~~or the shutdown panel~~ and all other safety related operational panels are in the proper state of operational readiness, including proper documentation, communications, alarm systems and habitability.		
USA 1 (On	"5.7 Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for **offsite communication and** the accident	The maintenance of offsite communication is a key component of emergency preparedness command and control.	Accepted		

resolving Comment USA 1) Carlson, NRO	management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions."				
USA 2 (On resolving Comment USA 2) Carlson, NRO	5.7 "The operating organization shall ensure that relevant safety parameter information is available in the emergency centre and technical support centre and communication is effective between the control rooms and these centres in accident conditions. These capabilities shall be tested periodically."	The current terminology does not seem consistent with GS-R-2 (GSR Part 7 / DS457). GSR Pt. 7, 6.27 contains requirements for the TSC, OSC and emergency center. The terms in question (i.e., "emergency centre," "emergency support centre," "technical support centre") do not appear in GS-R-2 or the IAEA Safety Glossary. If such terms are to be used, they should be defined (e.g., distinguishing between onsite and offsite centres) and used consistently. Alternatively, we think it is not a good idea to cover all three onsite facilities in both this document and GSR Pt. 7. The requirements should be in GSR Pt. 7.	Accepted. The description of emergency response facilities and locations separate from the main control room and supplementary control room are left in GSR pt 7.		
Finland **SSR-2/2** **1**	Requirement 5.7: Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for the accident management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions. The operating organization shall ensure that relevant safety parameter information is available in the emergency centre and technical support centre and communication is effective between the control rooms and these centres in accident conditions. These capabilities shall be tested periodically.	This requirement should be consistent with the SSR-2/1. see comments SSR-2/1, reg. 67, 6.42 and 6.42a	Accepted, text modified to be consistent with SSR2/1		
Hungary 1	5.7 Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for the accident management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by accident conditions. The operating organization shall ensure that relevant safety parameter information is available in the emergency centre and in supplementary emergency centre and also in technical support centre and communication is effective between the control rooms and these centres in accident conditions. These capabilities shall be tested periodically.	For enhancing emergency preparadness a full scope supplementary emergency centre also shall be available identical to the emergency centre.			Rejected, Terminology is consistent with GSR part 7 is used
Japan	5.7 Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for the accident management programme, shall be kept available in the site and out of the site(if necessary), and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions.	Enforcement. In the case of procuring the tools, equipment and documentation from outside of the plant, they should be maintained in good condition as well.		Accepted with modification	

Pakistan **11**	5.7 …The operating organization shall ensure that relevant safety parameter information is available in the ~~emergency centre and~~ technical support centre and communication is effective between the control rooms and this~~ese~~ centre~~s~~ in accident conditions. These capabilities shall be tested periodically.	The requirements of emergency centre are already discussed in GSR part 7.			The text is consistent with GSR part7, however the emphasis is here on the testing which need to be done by the operator.
France 1bis	5.7 Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for the accident management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions**, for which they are needed**. The operating organization shall ensure that relevant safety parameter information ~~is available~~ **can be obtained** in the emergency centre and technical support centre and communication is effective between the control rooms and these centres in accident conditions. These capabilities shall be tested periodically.	For clarification, that only the equipment needs to be protected, that is needed in certain accident conditions. Information does not need to be available online in these centers, but needs to be there for making decisions.	Accepted		
ENISS 1 **WNA 1**	5.7 Facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those for the accident management programme, shall be kept available and shall be maintained in good operational condition in such a manner that they are unlikely to be affected by, or made unavailable by, accident conditions**, for which they are needed**. The operating organization shall ensure that relevant safety parameter information ~~is available~~ **can be obtained** in the emergency centre and technical support centre and communication is effective between the control rooms and these centres in accident conditions. These capabilities shall be tested periodically.	For clarification, that only the equipment needs to be protected, that is needed in certain accident conditions. Information does not need to be available online in these centers, but needs to be there for making decisions.		Accepted with modification	
(consistency with DEC in SSR-2/1)	Requirement 19: **The operating organization shall establish an accident management programme for the management of beyond design basis accidents.**	Requirement 19: **The operating organization shall establish an accident management programme for the management of ~~beyond design basis accidents~~design extension conditions[1].** New footnote 1: 'Design extension conditions' has replaced the term 'beyond design basis accidents' used previously in SSR-2/2. The definition of 'design extension conditions' is as given in SSR-2/1.	Requirement 19: **The operating organization shall establish and maintain an accident management programme ~~for the management of design extension conditions .~~** ~~New footnote 1:~~ ~~'Design extension conditions' has replaced the term 'beyond design basis accidents' used previously in SSR-2/2. The definition of 'design extension conditions' is as given in SSR-2/1.~~		
Germany **SSR-2/2** **2**	**Requirement 19: Accident management programme** **The operating organization shall establish an accident management programme for the management of design extension conditions** [footnote]**, if such are not considered in the plants design.** Footnote: 'Design extension conditions' has replaced the term 'beyond design basis accidents' used previously in SSR-2/2. The definition of 'design extension conditions' is as given in SSR-2/1.			Accepted with modification. The provisions to be used in the AMP are dealt within SSR 2/1. The accidents for which accident management programme or accident guidelines are needed will be described in the NS-	

				G-2.15. The SSR2/2 is dealing only with the procedural and organisational matters which are needed to develop the AMP, implement, regularly review, maintain the required operability and adequately to train the plant staff. As formulated now Requirement 19 is valid both for old and new plants.	
Japan	**Requirement 19:** **The operating organization shall establish an accident management programme for the management of design extension conditions[1] including accidents scenario caused by low frequency and high consequent events.**	Clarification for accidents scenario in case of "low frequency and high consequent" events.		Accepted with modification (see German comment above)	
Russia 15	**Requirement 19:** **The operating organization shall establish an accident management programme for the management of physically possible accident conditions~~design extension conditions~~.**	Replacing "beyond design basis accident" by "design extension conditions" is unacceptable since accident management program shall cover all physically possible accidents and cannot be restricted to DBC and DEC sets.		Accepted with modification (see German comment above)	
Canada 2	**Requirement 19:** **The operating organization shall establish an accident management programme for the management of ~~design extension conditions~~ accidents with significant fuel damage.** See also use of "design extension conditions" in para 5.8 and 5.9 (2 occurences).	Emergency management does not map well onto plant states. For example, SAMGs are entered based on plant conditions indicating that fuel damage may occur. Emergency management actions are based on measured parameters, not the classification of the accident.		Accepted with modification (see German comment above)	
Pakistan 12	**Requirement 19** **The operating organization shall establish *and maintain* an accident management programme for the management of design extension conditions**	To enhance the scope of requirement 19, by adding "maintain", periodic review, re-assessment etc. may be required.	Accepted		
UK 19	**Requirement 19** **The operating organization shall establish an accident management programme for the management of accidents, including for design extension conditions.**	This statement could limit the requirement of an operating organization to have accident management programme that only considered conditions that are considered in the design of the facility. Accident management should consider possible states and include hazards not considered in the design of the facility, i.e. beyond design extension conditions.		Accepted with modification (see German comment above)	
ENISS 2 WNA 2	**Requirement 19** **The operating organization shall establish an accident management programme for the management of beyond design basis accidents for existing plants and for design extension conditions[3] for new plants.**	The simple replacement of BDBA by DEC in this requirement is not feasible, as this requirement fully applies to existing NPPs as well as new ones. The existing NPPs were not designed according to the new SSR2-1, so they are not incorporating the DEC concept fully. Additionally in SSR2-1 it is explicitly stated, that "it might not be		Accepted with modification (see German comment above)	

	1 'Design extension conditions' has replaced the term 'beyond design basis accidents' used previously in SSR-2/2. The definition of 'design extension conditions' is as given in SSR-2/1 **for new plants**.	practicable to apply all requirements … to NPPs that are already in operation…" – this notion is missing here. This leads to a fundamental change in the IAEA philosophy. We therefor suggest changes in the text as well as in the footnote.			
46.1/ 21.2/ 46.17/ 46.2	Requirement 5.8: An accident management programme shall be established that covers the preparatory measures and guidelines that are necessary for dealing with beyond design basis accidents. The accident management programme shall be documented and periodically reviewed and revised as necessary. It shall include instructions for utilization of the available equipment — safety related equipment as far as possible, but also conventional equipment — and the technical and administrative measures to mitigate the consequences of an accident. The accident management programme shall also include organizational arrangements for accident management, communication networks and training necessary for the implementation of the programme.	Requirement 5.8: 5.8 An accident management programme shall be established that covers the preparatory measures and guidelines that are necessary for dealing with ~~beyond design basis accidents~~design extension conditions, including for spent fuel storage. The accident management programme shall be documented and periodically reviewed and revised as necessary. 5.8a For a site where several units are co-located, the accident management programme shall consider concurrent severe accidents on multiple units due to, for example, external hazards. Resource in terms of trained and experienced personnel, equipment, supplies and external support shall be available to cope with the above. 5.8b It shall include instructions for utilization of the available equipment — safety related equipment as far as possible, but also conventional equipment. 5.8c It shall include contingency measures such as alternative supply of water, compressed air or other gasses and mobile electrical power sources to mitigate severe accidents, including any necessary equipment. This equipment shall be located and maintained so that it can withstand and will be readily accessible in postulated emergency conditions. 5.8d It shall include the technical and administrative measures to mitigate the consequences of an accident, organizational arrangements for accident management, communication networks. 5.8e It shall include training necessary for the implementation of the programme. 5.8f When developing the accident management programme and associated procedures, accessibility, adverse working conditions (e.g. elevated radiation levels, elevated temperatures, lack of lighting, access to plant from off-site) for operating staff, as well as degraded operating conditions for equipment shall be taken into account to ensure expected accident management actions will be feasible and reliable.	Requirement 5.8: 5.8 An accident management programme shall be established that covers the preparatory measures, procedures and guidelines and equipment that are necessary for ~~dealing with~~prevention of escalation and mitigation of consequences of ~~design extension conditions~~ accidents, including accidents more severe than the design basis accidents ~~for spent fuel storage~~. The accident management programme shall be documented and periodically reviewed and revised as necessary. 5.8a For a multi-unit site ~~where several units are co-located~~, the accident management programme shall consider concurrent ~~severe~~ accidents on multiple units ~~due to~~, ~~for example, external hazards~~. Resources in terms of trained and experienced personnel, equipment, supplies and external support shall be available to cope with the above. Potential interaction between the units shall be considered in the accident management programme. 5.8b It shall include instructions for utilization of the available equipment — safety related equipment as far as possible, but also conventional equipment. 5.8c It shall include contingency measures such as alternative supply of water~~, compressed air or other gasses and mobile~~ and electrical power ~~sources~~ to mitigate ~~severe~~ accidents, including any necessary equipment. This equipment shall be located and maintained so that it can be functional~~withstand,~~ and ~~will be~~ readily accessible when needed~~.in postulated emergency conditions~~. 5.8d It shall include the technical and administrative measures to mitigate the consequences of an accident, organizational arrangements for accident management~~,~~ and communication networks. 5.8e It shall include training necessary for the implementation of the programme. 5.8f When developing the accident management programme and associated procedures~~, accessibility,~~, degraded regional infrastructure, adverse working conditions (e.g. elevated radiation levels, elevated temperatures, lack of lighting, limited access to plant from off-site) for operating staff, as well as degraded operating conditions for equipment shall be taken into account to ensure expected accident management actions will be timely feasible and reliable.		
USA 1 (-Johnson)	5.8 Fix grammar by adding, "…including those affecting spent fuel pool storage."	Clarity. The phrase "including for spent fuel storage" indicates that fuel storage is itself a DEC.		Accepted with modification (see the German comment on Requirement 19)	

Germany **SSR-2/2** **3**	5.8 An accident management programme shall be established that covers the preparatory measures ~~and~~, guidelines and hardware updates and additions that are necessary for prevention or mitigation of~~dealing with~~ design extension conditions, resulting from destruction of the fuel in the reactor core or the~~including for~~ spent fuel storage. The accident management programme shall be documented and periodically reviewed and revised as necessary.	The measures implemented by AM have not the same level as measures in next generation plants. Hardware updates and additions are typically elements of AM programmes - for prevention and mitigation - in current NPPs, not only procedures and guidelines. This should be mentioned. That such "design extension conditions" can develop from both – core melting and SFP accidents – should be made clear here also.		Accepted with modification	
Hungary **8**	5.8 An accident management programme shall be established that covers the preparatory measures and guidelines that are necessary for dealing with design extension conditions, including ~~for~~ spent fuel storage. The accident management programme shall be documented and periodically reviewed and revised as necessary.	Appropriate wording.		Accepted with modification	
USA 2 Case (RES)	5.8a, 5.8c "5.8a For a site… consider concurrent ~~severe~~ accidents…" "5.8c It shall include… mitigate ~~severe~~ accidents…"	Overly restrictive. Maybe "complex" is a more appropriate term.	Accepted		
Germany **SSR-2/2** **4**	5.8 a For ~~a~~ multi-unit site ~~where several units are co-located~~, the accident management programme shall consider concurrent severe accidents on multiple units~~ due to, for example, external hazards~~. Resource in terms of trained and experienced personnel, equipment, supplies and external support shall be available to cope with the above. Potential interaction between the units due to accident conditions shall be considered in the accident management programme.	First sentence: wording and the deletion of the last part of the sentence should avoid that the focus is laid only on external hazards. The third sentence was added to underline that simultaneous accidents may influence the neighbouring units or that even an accident in one unit may influence the operation of other units as well.	Accepted		
Hungary **9**	5.8 c It shall include contingency measures such as alternative supply of water, compressed air or other gas~~s~~es and mobile electrical power sources to mitigate severe accidents, including any necessary equipment. This equipment shall be located and maintained so that it can withstand and will be readily accessible in postulated emergency conditions.	Appropriate spelling.	Accepted (text was deleted)		
Japan	5.8 c **….** This equipment shall be located and maintained so that it can withstand and will be readily accessible in postulated emergency conditions.	Clarify the postulated emergency conditions. What is this different from the design extension conditions?	Accepted		
Russia 17	5.8 c first sentence It shall include contingency measures such as alternative supply of water, compressed air or other gasses and mobile electrical power sources to mitigate severe accidents, including any necessary equipment.	In this sentence the term "mobile" is used. In standards SSR-2/1 Rev.1 in the same sense the term "not permanent" is used. It is reasonably to use identical terminology in both standards	Accepted (text was deleted)		
France 3	5.8 c It shall include contingency measures such as alternative supply of water~~, compressed air or other gasses and mobile~~ or electrical power ~~sources~~ to mitigate severe accidents, including any necessary equipment. This equipment shall be located and maintained so that it can withstand and will be readily accessible in postulated emergency conditions.	It could be too precise for a requirement. For example, SSR-2/1 does not require compressed air for DEC (it depends on the design)…	Accepted		
Japan	5.8 d It shall include … organizational arrangements for accident management~~,~~ and communication networks.	Editorial	Accepted		
Hungary **3**	5.8f When developing the accident management programme and associated procedures, ~~affected~~degraded regional infrastructure~~accessibility~~, adverse working conditions (e.g. elevated radiation levels, elevated temperatures, lack of lighting, restricted access to plant from off-site) for operating staff, as well as degraded operating conditions for equipment shall be taken into account to	Although it is not indicated in DS462, this addition comes from the lessons learned 46.6, but access issues are representing only partially the potential problems related to damaged surroundings of the site mentioned there. At the same time not access in general is the problem, but possible restrictions of it. Double mentioning of it in the sentence is proposed to correct in the editorial category as well.	Accepted		

	ensure expected accident management actions will be feasible and reliable.				
Hungary **2**	5.8f When developing the accident management programme and associated procedures, accessibility, adverse working conditions (e.g. elevated radiation levels, elevated temperatures, lack of lighting, limited access to plant from off-site) for operating staff, as well as degraded operating conditions for equipment shall be taken into account to ensure expected accident management actions will be feasible and reliable.	Better understanding.	Accepted		
France 4	5.8 f When developing the accident management programme and associated procedures… to ensure expected accident management actions will be timely feasible and reliable.	Time could be a parameter to highlight in accident management conditions.	Accepted		
Ukraine **15**	It is proposed to add a new subparagraph 5.8e 5.8 e It shall include the requirement that emergency personnel has to be informed with according confirmation note (such as personal signature) about the risks related to the works in adverse conditions (e.g., increased levels of radiation), and has to have preliminary concluded contracts specifying compensation and guarantees due to disability related to liquidation of the accident	In case of liquidation of emergency at initial stages, here can appear situations that need quick interference from personnel, that will cause overexposure exceeding normatives established by government. It is necessary to prepare appropriate package of documents, to avoid loss of time related to getting approval from government agencies and consideration of law requirements. Emergency plans are to consider personnel who provided their written agreement and are able to realize the works. It will provide no violations of human rights after liquidation of the emergency.			Not operational safety related. Rejected, if necessary shall be addressed in EPP standards
ENISS 3 **WNA 3**	5.8 An accident management programme shall be established that covers the preparatory measures and guidelines ~~that are necessary for dealing with design extension conditions~~, including for spent fuel storage. The accident management programme shall be documented and periodically reviewed and revised as necessary.	To avoid distinction between new and existing plants, as stated above.		Accepted with modification	
ENISS 4 **WNA 3**	5.8 a For a site where several units are co-located, the accident management programme shall consider concurrent severe accidents on multiple units due to **the same cause**, for example, external hazards. Resource in terms of trained and experienced personnel, equipment, supplies and external support shall be available to cope with the above.	For clarification, that the accidents occur due to the same initiating event/hazard (until now external events is only an example!).	Accepted		
ENISS 5 **WNA 3**	5.8 c It shall include contingency measures such as alternative supply of water, compressed air or other gasses and mobile electrical power sources to mitigate severe accidents, including any necessary equipment. This equipment shall **be maintained and shall** be located ~~and maintained~~ so that it can withstand and will be readily accessible in **the** postulated ~~emergency~~ **accident** conditions**, where it is needed**.	First equipment shall be maintained and second it should be stored in a safe place, so that it is accessible for the postulated condition, where it is needed. Following the logic of what is needed for an accident management program para 5.8c and 5.8d should be swapped.		Accepted with modification	
21.2	Requirement 5.9: Arrangements for accident management shall provide the operating staff with appropriate systems and technical support in relation to beyond design basis accidents. These arrangements and guidance shall be available before the commencement of fuel loading and they shall address the actions necessary following beyond design basis accidents, including severe accidents. In addition, arrangements shall be made, as part of the emergency plan, to expand the emergency response arrangements, where necessary, to include the responsibility for long term actions.	Requirement 5.9: Arrangements for accident management shall provide the operating staff with appropriate systems and technical support in relation to ~~beyond design basis accidents~~design extension conditions. These arrangements and guidance shall be available before the commencement of fuel loading, be validated and then periodically tested in exercises to ensure that they support~~, and they shall address~~ the actions necessary following ~~beyond design basis accidents~~design extension conditions, including severe accidents. In addition, arrangements shall be made, as part of the emergency plan, to	Requirement 5.9: Arrangements for accident management shall provide the operating staff with appropriate competence, systems and technical support ~~in relation to design extension conditions~~. These arrangements and guidance shall be available before the commencement of fuel loading, be validated and then periodically tested in exercises to ensure that they support, the actions necessary ~~following design extension conditions, including severe accidents~~. In addition, arrangements shall be made, as part of the accident management programme and of the emergency plan, to expand the emergency response arrangements,		

		expand the emergency response arrangements, where necessary, to include the responsibility for long term actions.	where necessary, to include the responsibility for long term actions.		
Germany **SSR-2/2** **5**	5.9 Arrangements for accident management shall provide the operating staff with appropriate systems and technical support in relation to design extension conditions. These arrangements and guidance shall be available ~~before the commencement of fuel loading~~ in all operational states of the plant, be validated and then periodically tested in exercises to ensure that they support the actions necessary following ~~design extension conditions, including severe accidents~~accidents and severe accidents. In addition, arrangements shall be made, as part of the emergency plan, to expand the emergency response arrangements, where necessary, to include the responsibility for long term actions.	Accident Management is always realised after the plant went into operation, as the term exists only for the current generation of NPPs and a ”commencement before fuel loading” is not possible. But AM provisions should be available under all NPP operational states. Accident management is known only for current plants to enhance the safety for severe accidents being outside the plant design, not for next generation plants. If something should be specified related to severe accident considerations in next generation plants (EPR, AP1000, …) a special chapter is needed.		Accepted with modification	
Hungary **4**	5.9 2nd sentence These arrangements and guidance shall be available before the commencement of fuel loading, be validated and then periodically tested in exercises to ensure that they support ~~and they shall address~~ the actions necessary during and following design extension conditions~~beyond design basis accidents~~, including severe accidents.	The mentioned in para 5.9. arrangements are equally important during the design extension conditions and severe accidents as well.		Accepted with modification	
Pakistan **13**	5.9 Arrangements for accident management shall provide the operating staff with *sufficient knowledge of* appropriate systems and technical support in relation to design extension conditions. These arrangements and guidance shall be available before the commencement of fuel loading, be validated and then periodically tested in exercises to ensure that they support the actions necessary following design extension conditions~~, including severe accidents~~. In addition, arrangements shall be made, as part of the emergency plan, to expand the emergency response arrangements, where necessary, to include the responsibility for long term actions.	The operating staff for implementation of accident management programme should be skilled for the management of appropriate systems so “sufficient knowledge” may be added. Accident conditions cover severe accidents.		Accepted with modification	
ENISS 6 **WNA 4**	5.9 Arrangements for accident management shall provide the operating staff with appropriate systems and technical support ~~in relation to design extension conditions~~. These arrangements and guidance shall be available before the commencement of fuel loading, be validated and then periodically tested in exercises to ensure that they support the actions necessary ~~following design extension conditions, including severe accidents~~. In addition, arrangements shall be made, as part of the ~~emergency plan~~ **accident management programme**, to expand the emergency response arrangements, where necessary, to include the responsibility for long term actions.	Deletion done due to changes suggested for Req. 19. Emergency plan should be changed to accident management programme.		Accepted with modification	
	5.14 All site personnel, including contractors, who are working in a controlled area or who are regularly present in a supervised area shall have their occupational exposures assessed in accordance with the requirements of Ref. [6]. Dose records shall be kept and shall be made available to personnel on demand and to the regulatory body.	No initial IAEA proposal	5.14 All site personnel, including contractors, who are working in a controlled area or who are regularly present in a supervised area shall have their occupational exposures assessed in accordance with the requirements of ~~Ref.~~ [6]. Dose records shall be kept and shall be made available to personnel on demand and to the regulatory body.		
Hungary **5**	5.14 All site personnel, including contractors, who are working in a controlled area or who are regularly present in a supervised area shall have their occupational exposures assessed in accordance with the requirements of ~~Ref.~~ [6]. Dose records shall be kept and shall be made available to personnel on demand and to the regulatory body.	Editorial remark. No other places “Ref.” is written before references in SSR 2/2.	Accepted		
	5.18 The operating organization shall establish and implement a	No initial IAEA proposal but an agreement that these comments	5.18 … The programme for the management of radioactive waste shall		

	programme for the management of radioactive waste. The programme for the management of radioactive waste shall include the pretreatment, characterization, classification, treatment, conditioning, transport, storage and disposal of radioactive waste, as well as regular updating of the inventory of radioactive waste. Treatment and storage of radioactive waste shall be strictly controlled in a manner consistent with the requirements for the predisposal management of radioactive waste [7]. Records shall be maintained for waste generation and waste classification, as well as for the storage, treatment and disposal of waste.	would be considered after MS consultation	include the ~~pretreatment,~~ characterization, classification, processing (i.e. pretreatment, treatment~~,~~ and conditioning), transport, storage and disposal of radioactive waste, as well as regular updating of the inventory of radioactive waste. ~~Treatment~~ Processing and storage of radioactive waste shall be strictly controlled in a manner consistent with the requirements for the predisposal management of radioactive waste [7]. Records shall be maintained for waste generation and waste classification, as well as for the processing, storage~~, treatment~~ and disposal of waste.		
Germany **SSR-2/2** **7**	5.18 … The programme for the management of radioactive waste shall include the ~~pretreatment,~~ characterization, classification, processing (i.e. pretreatment, treatment~~,~~ and conditioning), transport, storage and disposal of radioactive waste, as well as regular updating of the inventory of radioactive waste. ~~Treatment~~ Processing and storage of radioactive waste shall be strictly controlled in a manner consistent with the requirements for the predisposal management of radioactive waste [7]. Records shall be maintained for waste generation and waste classification, as well as for the processing, storage~~, treatment~~ and disposal of waste.	Ensuring consistency with the General Safety Requirements No. GSR Part 5 “Predisposal Management of Radioactive Waste”, see Paras 1.2, 1.4 and 1.12. According to the IAEA Safety Glossary (2007 Edition), the term ‘processing’ includes ‘pretreatment’, ‘treatment’ and ‘conditioning’.	Accepted for consistency with the other IAEA Requirements		
(Proposal from Finland)	Requirement 5.24: The operating organization shall be responsible for ensuring that appropriate procedures are in place for effectively coordinating and cooperating with all firefighting services involved. Periodic joint fire drills and exercises shall be conducted to assess the effectiveness of the fire response capability.	Requirement 5.24: The operating organization shall be responsible for ensuring that appropriate procedures and competent staffing are in place for effectively coordinating and cooperating with all firefighting services involved. Periodic joint fire drills and exercises shall be conducted to assess the effectiveness of the fire response capability.	Requirement 5.24: The operating organization shall be responsible for ensuring that appropriate procedures, equipment and competent staffing are in place for effectively coordinating and cooperating with all fire fighting services involved. Periodic joint fire drills and exercises shall be conducted to assess the effectiveness of the fire response capability.		
WNA 5	5.24 ..and cooperating with all ~~firefighting~~ fire fighting services involved.	editorial, Required to correct typo	Accepted		
Pakistan	5.24 The operating organization shall be responsible for ensuring that appropriate procedures, equipment and competent staffing are in place for effectively coordinating and cooperating with all firefighting services involved. Periodic joint fire drills and exercises shall be conducted to assess the effectiveness of the fire response capability.	n our opinion, the appropriate equipment should also be addressed here.	Accepted		
45.1	Requirement 5.27: The operating organization shall establish and implement a programme to report, collect, screen, analyse, trend, document and communicate operating experience at the plant in a systematic way. It shall obtain and evaluate information on relevant operating experience at other nuclear installations to draw lessons for its own operations. It shall also encourage the exchange of experience within national and international systems for the feedback of operating experience. Relevant lessons from other industries shall also be taken into consideration, as necessary.	Requirement 5.27: The operating organization shall establish and implement a programme to report, collect, screen, analyse, trend, document and communicate operating experience at the plant in a systematic way. It shall seek to obtain and evaluate information on relevant operating experience at other nuclear installations to ~~draw~~ incorporate lessons for its own operations including emergency related arrangements. It shall also encourage the exchange of experience within national and international systems for the feedback of operating experience. Relevant lessons from other industries shall also be taken into consideration, as necessary.	Requirement 5.27: The operating organization shall establish and implement a programme to report, collect, screen, analyse, trend, document and communicate operating experience at the plant in a systematic way. It shall ~~seek to~~ obtain and evaluate available information on relevant operating experience at other nuclear installations to draw and incorporate lessons for its own operations including emergency related arrangements. It shall also encourage the exchange of experience within national and international systems for the feedback of operating experience. Relevant lessons from other industries shall also be taken into consideration, as necessary.		
Germany **SSR-2/2** **8**	Requirement 5.27: The operating organization shall establish and implement a programme to report, collect, screen, analyse, trend, document and communicate operating experience at the plant in a systematic way. It shall ~~seek to~~ obtain and evaluate information on relevant operating experience at other nuclear installations to incorporate lessons for its own operations including emergency	“seek to” has to be deleted. It is a weakening of the requirement.	Accepted		

	related arrangements. It shall also encourage the exchange of experience within national and international systems for the feedback of operating experience. Relevant lessons from other industries shall also be taken into consideration, as necessary.				
	5.32 The operating organization shall maintain liaison, as appropriate, with support organizations (manufacturers, research organizations and designers) involved in the design, in order to feed back information on operating experience and to obtain advice, if necessary, in the event of equipment failure or in other events.	No initial IAEA proposal	5.32 The operating organization shall maintain liaison, as appropriate, with support organizations (e.g. manufacturers, research organizations and designers) involved in the design, construction, commissioning -and operation, in order to feed back information on operating experience and to obtain advice, if necessary, in the event of equipment failure or in other events.		
Hungary 6	5.32 The operating organization shall maintain liaison, as appropriate, with support organizations (e.g. manufacturers, research organizations and designers) involved in the design, construction and operation, in order to feed back information on operating experience and to obtain advice, if necessary, in the event of equipment failure or in other events.	Operating experience shall be fed back not only for the design, but e.g. for maintenance organisations (contractors) as well.	Accepted		
(consistency with DEC in SSR-2/1)	Requirement 7.3: Procedures shall be developed for use in the event of anticipated operational occurrences and design basis accidents. Emergency operating procedures and guidance for managing beyond design basis accidents shall also be developed. Both event based approaches and symptom based approaches shall be used, as appropriate. The related analysis and justifications shall be documented.	Requirement 7.3: Procedures shall be developed for use in the event of anticipated operational occurrences and design basis accidents. Emergency operating procedures and guidance for managing ~~beyond design basis accidents~~design extension conditions shall also be developed. Both event based approaches and symptom based approaches shall be used, as appropriate. The related analysis and justifications shall be documented.	Requirement 7.3: Procedures shall be developed for use in the event of anticipated operational occurrences and design basis accidents. ~~Emergency operating procedures and guidance for managing design extension conditions shall also be developed.~~ Guidelines or procedures shall be developed for the management of accidents more severe than the design basis accidents. Both event based approaches and symptom based approaches shall be used, as appropriate. The related analysis and justifications shall be documented.		
Germany **SSR-2/2** **9**	Add at the end of 7.3: If not realized in the plant design, such provisions for design extension conditions are to be done as a part of the accident management programmes.	It should be formulated in accordance to NS-G-2.15. There SAMG and other provisions are described as part of accident management concept for current NPPs.		Accepted with modifications (see German comment on Requirement 19)	
Russia 18	7.3 second sentence Emergency operating procedures and guidance for managing design extension conditions and other less probable accidents shall also be developed.	This sentence shall be added with words: and other less probably accidents by the same reason as in comment 18		Accepted with modifications	
ENISS 7 **WNA 6**	7.3 Procedures shall be developed for use in the event of anticipated operational occurrences and design basis accidents. Emergency operating procedures and guidance for **accident management** ~~managing design extension conditions~~ shall also be developed. Both event based approaches and symptom based approaches shall be used, as appropriate. The related analysis and justifications shall be documented.	Changes done due to changes suggested for Req. 19.		Accepted with modifications	
		No initial IAEA proposal			
Hungary 7	7.20 2nd sentence Decisions on, and the planning, evaluation, conduct and control of, all operations or modifications involving the fuel and other core components that are liable to affect reactivity control shall be undertaken by using approved procedures and respecting predefined operational limits for the core.	Not only the fuel, but other core components (e.g. absorbers) may seriously affect reactivity control.		Accepted for future revision **of the document (comment not specific to Fukushima)**	

		No initial IAEA proposal but an agreement that these comments would be considered after MS consultation			
Germany **SSR-2/2** **10**	General note: The paras in this Section dealing with preparation for decommissioning should be rearranged to follow a logical order. Proposal for new sequence of paras: 9.1, 9.2, 9.5, 9.4, 9.3, 9.6.	For the sake of consistency. The statements in Paras 9.4, 9.3 and 9.6 should be placed at the end since they are in particular relevant for the transitional phase prior to the commencement of decommissioning (i.e. between the permanent shutdown of operations and approval of the final decommissioning plan).		**Accepted for next full revision of the document (-comment not specific to Fukushima)**	
		No initial IAEA proposal but an agreement that these comments would be considered after MS consultation			
Germany **SSR-2/2** **11**	**Requirement 33** **The operating organization shall prepare a decommissioning plan and shall maintain it throughout the lifetime of the plant, ~~unless otherwise approved by~~ according to the requirements of the regulatory body, to demonstrate that decommissioning can be accomplished safely and in such a way as to meet the specified end state.**	Ensuring consistency with the General Safety Requirements No. GSR Part 6 "Decommissioning of Facilities" (revision of WS-R-5; draft version DS450 dated 14 August 2013). Requirement 10 of GSR Part 6 states: "The licensee shall prepare a decommissioning plan and maintain it throughout the lifetime of the facility, according to the requirements of the regulatory body, in order to show that decommissioning can be accomplished safely to meet the defined end state." The current text in Requirement 33 is adopted from Para 5.1 of WS-R-5. Compared to this, Requirement 10 of GSR Part 6 establishes a more stringent approach. Therefore, harmonization of the related requirements in both Safety Standards is strongly recommended.		**Accepted for next full revision of the document (comment not specific to Fukushima)**	