Establishing the Safety Infrastructure for a Nuclear Power Programme (DS486), 16th March 2018, STEP_11_NUSSC

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: M-L Järvinen, T. Virolainen, P. Karhu Country/Organization: STUK			Page.... of.... Date: 15th May 2016				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	**1.12**	The IAEA website provides access to copies of all relevant IAEA Safety Requirements and Safety Guides, as well as other key safety related publications such as INSAG reports. In addition, the IAEA Nuclear Safety and Security Online User Interface provides easy access to the content of all current safety standards. On IAEA web site. SSG-16 is intended to be used in conjunction with this new edition of Milestones in the Development of a National Infrastructure for Nuclear Power.	Please make the reference to national infrastructure development. At the IAEA approach there are 19 infrastructure issues and SSG-16 does not cover all of them such as safeguards.		Added last sentence to paragraph 1.3: "While these documents focus on the entire national infrastructure, this Safety Guide is to focus only on the development of the safety infrastructure for a nuclear power programme."		To maintain continuity within SSG-16 when discussing the Milestones Document.
2.	**Action 163.**	**The operating organization should prepare the site evaluation report and should submit it to the regulatory body on the basis of a full assessment of the site selected and including the confirmation of site acceptability and the characterization of the site for the definition of the site related design basis parameters.**	Please harmonize with DS484 at STEP 11 in the 45th NUSSC meeting. Please define the terms site specific design parameters or use other terminology such as site specific input for the design. This should be the input for the designer of the nuclear facilities and	X			Agree with the comment, however, since SSR-1 (which will be the result of DS484) is also in Step 11. Once it is approved in final the Secretariat will perform a review and make changes to SSG-16 as required before publication

			planning of the use of nuclear energy. The designer defines the design basis and the design requirements that specify the design parameter of the nuclear installations.				

DS 486

COMMENTS BY REVIEWER Reviewer: Page1 of 3 Country/Organization: France Date: 11/05/18				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	2.256	2.256 The full emergency arrangements in relation to the nuclear power programme should be established and tested in ~~an~~ exercises conducted before the fuel is brought to the site.	It is probably more effective to plan several exercises to test the different parts of emergency arrangements, to allow feedback of experience between each exercise.	X			
2	2.260	[…] — Procedures for managing radioactive waste following the emergency; — Guidelines for terminating the emergency and for analysis of the emergency and emergency response.	Editorial change	X			
3	3.17	Progressively in Phase 3, the operating organization should grow larger in size ~~and complexity~~.	The complexity is a consequence of the growth, it's not a recommendation.	X			

COMMENTS BY REVIEWER Reviewer: Country/Organization: France			Page 2 of 3 Date: 11/05/18	RESOLUTION			
4	3.25	As required by SSR-2/2 [17(Rev. 1) [18], it is the responsibility of the operating organization to develop a range of management programmes important to safety. Procedures should be developed for normal operation, as well as to control anticipated operational occurrences and accident conditions (including design basis accidents and design extension conditions without significant fuel degradation). For design extension conditions with ~~core~~ fuel melting (severe accident conditions), specific guidelines should be developed. As described in NS-G-2.4 [29], the areas to be covered by various management programmes for the safe operation of the plant should include, but are not limited to, the following:	Procedures should also be established for the management of severe accident affecting the spent fuel pool.		…core and fuel damage or melting….including severe accident accidents affecting the spent fuel pool		More concisely captures the idea
5	3.55	Requirements for the design of nuclear power plants are established in SSR-2/1 (Rev. 1) [29]. The key safety principles and issues that should be taken into account in the design include: —[…] — The practical elimination of event sequences that could lead to an early ~~or large~~ release that cannot be dealt within the frame of an emergency response	To be consistent with a common comprehension of the situations that have to be practically eliminated.			X	No basis could be found in the safety standards for including this statement.

COMMENTS BY REVIEWER Reviewer:	Page 3 of 3	RESOLUTION

Country/Organization:		France	Date: 11/05/18				
6		Suggestion to add a recommendation regarding the involvement of the operating organization at the early stage of te design : “the vendor should provide the operating organization with the detailed data necessary to establish operating procedures for the safe operation of the nuclear power plant. The regulatory body should have access to this information”;	Even in turnkey and super turnkey contracts, the prime responsibility for safety relies on the operating organization. This organization should be enable to discharge this responsibility by ensuring consistency between operating procedures and design limits.			X	This suggestion is already implied in other areas throughout SSG-16. such as Safety Assessment. For example: Actions 18 and 19; Paragraphs 2.145, 2.233; Actions 154 and 179,

Establishing the Safety Infrastructure for a Nuclear Power Programme

DS486, Step 11, Version dated 16. March 2018

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 5 Country/Organization: **Germany** Date: 09.05.2018				RESOLUTION			
Rele-vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1	1.21 Line 2	…. The recommendations are presented for ease of use in the form of 197 actions suggested to be taken in the first three phases of the development of the nuclear power programme, to achieve the foundation for a high level of safety throughout the entire lifetime of the nuclear power plant …	Suggested modification to be in line with para 1.15.			X	The tie to the phased implementation to the first 3 phases is in the first sentence of paragraph 1.21. Repeating it in the second sentence is not necessary.

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 5 Country/Organization: **Germany** Date: 09.05.2018				RESOLUTION			
Rele-vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/reject ion
1	2	2.4 Line 5	… ~~In this Safety Guide, it is assumed that the State does not have an institution or organization that would be ready to assess the feasibility of the nuclear power option as part of a national energy policy and present its findings to the decision makers at the highest level of the government.~~	This should be part of the section of the scope – see 1.22			X	More appropriate for this statement to remain in the section on National Policy and Strategy for Safety.
1	3	2.5 Line 6	… Regulatory oversight is important to verify that the operating organization discharges its responsibility for safety completely and effectively and to enforce compliance with <u>regulatory requirements</u> ~~and applicable safety standards~~.	The regulatory authority enforces compliance with the national regulatory requirements.			X	This paragraph is discussing the development of regulatory requirements which should comply with the safety standards.
1	4	2.19	A nuclear power programme in a State cannot be considered in isolation. A nuclear accident could have harmful effects beyond national borders owing to the potential transboundary consequences of radioactive releases~~, and impact on worldwide public opinion~~…..	The last part of the sentence is rather unspecific and should therefore be more substantiated or deleted.	X			
2	5	2.23 Line 11	…… — ~~Multinational~~ <u>Multilateral</u> and bilateral cooperation in safety matters aimed at enhancing safety by	See GSR Part 1 (rev.1) 3.2 (e)	X			

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 5 Country/Organization: **Germany** Date: 09.05.2018				RESOLUTION			
Rele-vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			means of harmonized approaches and the increased quality and effectiveness of safety reviews and inspections.					
1	6	2.53	In a nuclear power programme, the regulatory body is required to verify that the site evaluation, design, construction, commissioning, operation and decommissioning of a nuclear power plant comply with the ~~relevant safety standards~~ regulatory requirements (see para. 4.3 of GSR Part 1 (Rev. 1) [5])…..	The regulatory authority enforces compliance with the national regulatory requirements. (see para. 4.3 of GSR Part 1). Regulations and guides shall be reviewed and revised … with due consideration of international safety standards (see req. 33 of of GSR Part 1)	X			
1	7	2.128	The regulatory body and the operating organization need to keep a questioning attitude on safety matters and avoid over-reliance on advice from external experts~~, in particular in cases of conflicting conclusions regarding the analysis of low probability/high consequences events. This is particularly relevant in the analysis of external hazards that are associated with large uncertainties. Therefore, the regulatory body should make~~	The last part of the sentence should be deleted. In general para 2.115 requires that the regulatory body should have the competence to fully understand the basis of all safety related decisions that they are responsible for making.			X	The paragraph is clearer with the additional language and provides a focus on making conservative decision regarding safety matters.

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 5 Country/Organization: **Germany** Date: 09.05.2018				RESOLUTION			
Rele-vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/reject ion
			~~conservative decisions in these instances~~.					
1	8	2.204	The principles of radiation protection are not specific to nuclear power plants but apply to all facilities and activities in which ionizing radiation is produced <u>as well as to exposure situations due to natural sources.</u>	Either exposures due to natural sources should be added (see GSR Part 3).		…as well as existing exposure situations		Maintain consistence with language in GSR Part 3.
1	9	2.243 Line 4	… The option that is chosen will have implications for the approach to waste disposal <u>and</u>~~,~~ for the costs of spent fuel management ~~and, in the longer term, for the sustainability of nuclear power as a global energy source~~. ~~There is no easy answer to the question of which alternative is the best.~~	The global sustainability of nuclear power is not part of the national infrastructure. The last sentence is not appropriate for a guide.		…the sustainability of the nuclear power programme.		This keeps the point about the sustainability of nuclear power for the country.
2	10	2.246	For managing long lived radioactive waste, high level radioactive waste and spent fuel, the government and the waste management organization should assess whether the disposal of radioactive waste can be provided for by means of national arrangements or whether assistance from other States is necessary. In general, national arrangements are feasible in an open nuclear fuel cycle with direct disposal of spent fuel. However, the use of a closed	It is not mandatory that services are required by another state. Maybe there were earlier research facilities for reprocessing that can be expanded. However this is very unlikely it should be not excluded in the text.	X			

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 5 Country/Organization: **Germany** Date: 09.05.2018				RESOLUTION			
Rele-vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			nuclear fuel cycle in a small nuclear power programme would generally/possibly require services to be rendered by a reprocessing organization in another State.					
1	11	3.48	The operating organization should identify necessary improvements to the site (to be built in Phase 3) that are important to safety, such as site protection measures against external hazards (for example, external floods, groundwater level and hydrogeological conditions), provision of an ultimate heat sink, road access, communications, grid connection and water supplies, which might also have an impact on the implementation of emergency plans.	External power supply might be safety relevant for long lasting accidents		Sentence added to 3.48: Items important to safety should not be compromised by disturbances in the electrical power grid.		Language consistent with SSR 2/1 (Rev. 1)

Establishing the Safety Infrastructure for a Nuclear Power Programme

COMMENTS BY REVIEWER Reviewer: Jila Karimi Diba Page.... of.... Country/Organization: IRAN/National Radiation Protection Department (NRPD)-Iran Nuclear Regulatory Authority (INRA) Date: 2018-05-11				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Whole document	'accident' shall be replaced by 'emergency' in some paragraphs of this draft. For example: - 2.19: "A nuclear ~~accident~~ emergency could have harmful effects beyond national borders owing to the potential transboundary consequences of radioactive releases, …" - 2.100: "The regulatory body and the operating organization should inform the public about the possible radiation risks arising from operational states and from ~~accident~~ emergency conditions…" - 2.217: "Safety assessment should be a systematic process throughout the lifetime of the plant to identify radiation risks that arise for workers, the public and the environment	At the End of Term Report of EPReSC (2015-17), as one of the specific issues, it is mentioned that: "**Use of terminology not consistent with EPR Safety Standards-** Many comments raised by EPReSC on draft documents not specifically devoted to EPR, but with some interface with it, referred to the use of terminology not consistent with the safety glossary or the definitions included in EPR Safety Standards, especially the terms defined in GSR Part 7. The use of **"accident**" when referring to an e**mergency**, … and other imprecise wording have been a source of concern for EPReSC."		For 2.100, 3.9 and 3.38 changed "accident conditions" to "accidents" For 3.44 changed "accident conditions leading to emergency response' to accidents warranting emergency response" These modifications allow better alignment with SSR-2.1 (Rev.1) and GSR Part 7 and ensure that the provisions apply to events beyond those		Para 2.19 and 2.217 were not changed: 2.19 the effects beyond the board are from a nuclear accident, not the resultant emergency. 2.217 discusses the safety assessment of the facility design which needs to include the anticipated operational occurrences, and in accident conditions (not the resultant emergency).

		during normal operation, in anticipated operational occurrences, and in ~~accident~~ emergency conditions…” - 3.9: “— Operating functions, which include executive decision making and actions for the operation of the plant, both in operational states and in ~~accident~~ emergency conditions;” - 3.38: “The expected impact of the plant on the public and the environment, in terms of the consequences of radioactive discharges in operational states and potential radioactive releases in ~~accident~~ emergency conditions,..” - 3.44: “In accordance with the requirements of NS-R-3 (Rev. 1) [27] and with regard to the potential radiological impacts on the region for operational states and for ~~accident~~ emergency conditions leading to ~~emergency~~ response measures,…”	In this draft "accident" has been used several times when referring to an emergency. In consistent with GSR Part 7, in some paragraphs, **“accident”** shall be replaced by **“emergency”.**		considered in the design and are part of plant states.		

2	Paragraph 1.4/Second and third lines	"the set of institutional, organizational and technical elements and conditions established in a Member State to provide a sound foundation for ensuring a sustainable high level of nuclear safety."	According to Page 1 of Reference 4 (INSAG-22)	X			

DS-486 "Establishing the Safety Infrastructure for a Nuclear Power Programme"

COMMENTS BY REVIEWER Reviewer: NUSSC Member Page.1 of 1 Country/Organization: Pakistan /PNRA Date: 11 May 2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	Action 20, Page 20	Action 20: The government should identify all necessary elements of a legal framework for the safety *and security* infrastructure, and should plan how to structure and develop this framework.	Action 195 of the previous version of SSG-16 has been removed which was related to defining the responsibilities of the operating organization and other competent authorities in relation to security. Therefore, security aspects may be considered during identification of necessary elements of a legal framework for *security* infrastructure by the government during phase 2.			X	References to the development of a security infrastructure have been removed from SSG-16 to avoid duplication and confusion with IAEA Nuclear Security Series No. 19, Establishing the nuclear security infrastructure for a nuclear power programme.

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: NUSSC Member Country/Organization: Pakistan /PNRA			Page.1 of 1 Date: 11 May 2018				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
2.							

DS486 Establishing the Safety Infrastructure for a Nuclear Power Programme

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Dr. Sertan YEŞİL Country/Organization: Turkey / Turkish Atomic Energy Authority			Page 1 of 2 Date: 24.04.2018				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	2.260	The following arrangement: "Procedures for emergency classification" can be written as "Procedures for emergency classification and use of operational criteria"	Use of operational criteria will lead to the prompt and precise classification of the emergency situations.			X	Detailed use of operational criteria is covered in more detail in GSR Part 7
2	2.260	The following arrangement: "Procedures for the implementation of urgent and early protective actions and other response actions" can be written as "Procedures for the implementation of urgent and early protective actions and other response actions and use of operational criteria"	Use of operational criteria for the decisions related to the protective actions and other response actions will lead to the prompt and precise decision making process.			X	Detailed use of operational criteria is covered in more detail in GSR Part 7
3	2.260	The following arrangements can be added to the list: - Procedures for effective communication	These arrangements are also very important in terms of effective emergency preparedness	X			

		- Procedures for effective radiological monitoring - Development of drill, training and exercise programs	and response for the nuclear facilities.				
4	2.260	The following statement should be a separate bullet in the list of arrangements: "Guidelines for terminating the emergency and for analysis of the emergency and emergency response."	Editorial correction	X			

Comments on DS486 "Establishing the Safety Infrastructure for a Nuclear Power Programme" (Step 11)

COMMENTS BY REVIEWER Reviewer: US Nuclear Regulatory Commission Page: 1 of 3 Country/Organization: United States Date: 05/14/2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	Page 9, Table 1, Item 16	Correct Item 16 in Table 1 Column 2, from: "*16-Site Survey and Site Selection"* to *"Site Evaluation for Nuclear Installation"* Correct Item 16, Table 1 Column 3, from "NS-R-3 (Rev 1)" to *"16-NSR-R-3 (Rev 1) which will be superseded by DS484"*	Correctness and update	X			Agree with the comment, however, the SSR-1 (which will be the result of NS-R-3 (Rev. 1) is also in Step 11. Once it is approved in final the Secretariate will perfrom a review and make changes to SSG-16 as required before publication
2.	General	The guidance listed 197 actions to be undertaken by different entities, such as: "the Government," "the Regulator," "the	Completeness to address issues of overlap in			X	Covered in paragraph 1.13. Due to the broad

		Regulatory Body," the "Relevant Organizations," and the "Operating Organization". In this regard, we would like to clarify the followings: 1. The guidance could benefit by clarifying that the term "Government" could include both "Federal," and "Local (or State) governments particularly when addressing coordination for transport of SF and disposal of radioactive waste. 2. The "Regulatory Body" in most cases represents the "Government." Typically, the "Government" develops the "Law" and the "Regulatory Body" develops the specific regulations and processes/monitors implementation of the "Laws" and "Regulations." 3. The guidance should indicate in the text of overlap of responsibilities for the listed 197 actions. Depending on the size of the country the division for implementing of these actions could be much narrower than what was presented in the guidance. 4. In a few cases, the "builder" or the "Contractor" for construction of NPPs, or the operator, is partially owned by the "Government." Therefore, the guidance should emphasize the need for, and actions, for impartial audit and inspection as well as transparency to avoid discovery of errors in the late phases of NPP operation.	responsibilities for implementation of the 197 activities				range of legal framework in member states it is beyond the scope of the document to go into more detail than paragraph 1.13.

3.	General	It is recommended to add the below to the document guidance: • acquiring nuclear fuel, • spent fuel interim storage; and	The guidance lacks specific activities/actions to plan for: • acquiring nuclear fuel, and • spent fuel interim storage;			X	Acquiring new fuel and managing spent fuel are part of the overall nuclear strategy and policy for a country. Spent fuel management is discussed throughout SSG-16 and most specifically in actions 122-132. Commissioning and the loading of new fuel are discussed extensively in SSG-28 and in actions 185 – 188 of SSG-16. In addition, the transportation of fresh and used fuel is discussed in Actions 189-192. Purchasing of new fuel is beyond the scope of this safety guide.
4.	General	It is recommended that additional guidance be provided on the integration of safety and security, as well as enhancing safety culture.	Completeness. The safety - security interface is important to address.			X	The integration of safety and security are thoroughly discussed in actions 193-197.
5.	General Comment	It is recommended to include more emphasis on the importance of periodic testing of	It is recommended to include more emphasis on the			X	Action 145 discusses the need for emergency

		Emergency Plans and procedures during Phase 3.	importance of periodic testing of Emergency Plans and procedures during Phase 3, as it will allow organizations to identify improvements and/or changes to their Emergency Plans or procedures.				response exercises. SSG-16 help embarking countries to prepare for the implementation of a safe nuclear power programme. GSR Part 7 contains the necessary recommendations for emergency exercises.
6.	General Comment	It is recommended to include information regarding site evaluation pertaining to impediments to evacuation.	The document currently does not include information regarding site evaluation pertaining to impediments to evacuations. Emergency Plans include information regarding evacuations and other protective measures for members of the public. Including information in this document on impediments to evacuations will strengthen this document and provide another area of emergency planning for			X	Paragragh 3.36 (b) and (c) the need to evaluate the site for evacuation purposes and provides reference to SSG-35 and NS-R-3 (Rev. 1)

			Member States to consider.				