DS484 Site Evaluation for Nuclear Installations

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Dr. Sertan YEŞİL Page 1 of 1 Country/Organization: Turkey / Turkish Atomic Energy Authority 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	6.8	The “nursing homes” can be added to the residential institutions listed in this paragraph.	Nursing homes host elder people who also need special attention during emergency situations.	o.k.			

Comments on DS484, "Site Evaluation for Nuclear Installations" (Step 11)

COMMENTS BY REVIEWER Reviewer: US Nuclear Regulatory Commission Page:1 of 3 Country/Organization: United States Date: 05/02/2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	General and Para 1.5	Add after Para 1.3 the following statement: *"A graded approach should be used to the extent practicable to ensure details of site evaluation are commensurate with the potential risk to the public and the environment from such facility. The requirements listed in this Safety Requirements publication may be too extensive for site evaluation of small facilities such as research reactors or R&D facilities."*	Para 1.5 listed the nuclear installation that apply to DS484 requirements. These installations ranged from small facilities such as research reactors and R&D development facilities. A concern exists that the use of a concept "one-size-fits all" to all installations; as certain extensive requirements may be inappropriate for all site evaluation listed in Para 1.5. For example, siting requirements for research reactors could be different from siting for nuclear power plants.			x	Para 1.3 to 1.5 referee to general objectives and scope. Requirement 3 Scope of the site evaluation for nuclear installations Introduce the graded approach para 4.3 to 4.7. Paragraph 4.4 and 4.5 basically cover the proposed text.
2.	Table of Contents, Page i Last Item	Correct last listed item from "Requirement 222" to **"Requirement 22"**	Editorial	O.K.			
3.	1.6	Delete existing paragraph and add the following:	The proposed change, clarifies the practical aspects of DS484		The proposed text with		

		"For existing facilities, decisions concerning implementation of new or enhanced safety features may consider, as practicable, safety significance, costs, and other socio-economic issues."	implementation requirements for existing licensed facilities to account for safety significance, cost, and socio-economic issues.		modifications was added to para 1.6.		
4.	4.14, Line 1	After "natural phenomena" add: "*features, events, and processes (FEPs)."*	The FEPs term is a commonly used term in "Performance Assessment" siting methodology.			x	FEPs is used for disposal facilities. According to IAEA Safety Glossary disposal facilities are not included in definition of Nuclear Installations.
5.	4.15, line 1	Modify first line to read: *"Characteristics of the natural environment and FEPs in the region …"*	FEPs are important to identify and characterize when addressing regional siting.			x	See above.
6.	4.25 line 3	Add to the end of Para 4.25: *"Use of a probabilistic methodology shall include sensitivity analyses and/or assessment of uncertainties."*	Risk assessments for site evaluation must conduct sensitivity analysis (e.g.; for deterministic approach) and analysis of uncertainties for probabilistic approach in order to address safety margins.			x	Uncertainty analysis (sensitivity could also be part of it) is required for both deterministic and probabilistic hazard analysis not only for probabilistic methodology. This is covered by para 4.23 and 4.24.
7.	4.50	Revise to read: *The data shall be maintained and reviewed periodically, and/or as needed, as part of a review of the site evaluation*	Maintaining the records is appropriate for 4.50.	O.K.			

		within the framework of periodic safety review, for example, to address developments in data gathering techniques and in the analysis and use of data and to confirm that the data remain pertinent to the site in the face of evolving hazards.					
8.	4.51, line 1	Revise to read: *"The data collected for the site investigation shall be of sufficient quality and quantity to support the selected methodology for hazard evaluation."*	The revised text ensures appropriate data quality and quantity to support hazard/risk evaluation.	O.K.			
9.	Paras 5.14 and 4.25	5.14 is a repeat of 4.25. Please delete repetitive criteria.	Avoids repetition.		5.14 as modified is not a repetition of 4.25.		

TITLE: DS484 Site Evaluation for Nuclear Installations (for NUSSC 45)

COMMENTS BY REVIEWER Country/Organization: FRANCE / ASN -IRSN Date: May 2018 Pages				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	3.4	For each site evaluation activity, including inspection, testing, verification and/or validation, ~~the acceptance criteria and~~ the responsibilities for performing the activity shall be specified.	The link between "acceptance criteria and this chapter (management system) is not clear			x	The text is in line with GSR part 2 para. 4.31.
2.	3.6	An independent review shall be made of the evaluation of the site related external natural and human induced hazards, ~~and~~ site specific design parameters, and the potential radiological impact of the nuclear installation on people and environment.	The review should not be limited to hazards and design parameters	O.K.			
3.	Requirement 2	The safety objectives in site evaluation for nuclear installations shall be (a) to characterize the natural and human induced hazards that might challenge the safety of the nuclear installation and (b), more generally, to provide ~~adequate~~ input for demonstration of the sufficient protection of people and the environment from harmful effects of ionizing radiation ~~radiological consequences of radioactive releases due to accidents~~.	Limiting the releases to accident could be understood as if it is normal that all hazards lead to an accident. Moreover, "releases" is too restrictive regarding SF1. Protection could not be demonstrated, "adequate" or "sufficient" one could be		Reflected with modifications because adequate input is necessary meaning the one that complies with all applicable requirements from this document.		
4.	4.1	The safety objectives in site evaluation are derived based on the fundamental safety objective [1] ~~relate to both short term and long term radiological impact on people and the environment~~	SF1 fundamental safety objective does not mention short/long term impact. Thus this part of the sentence is not really understandable and could be seen whether as downgrading SF1 (only one part of the objective) or over upgrading SF1 (additional objective)	O.K.			

COMMENTS BY REVIEWER Country/Organization: FRANCE / ASN -IRSN Date: May 2018 Pages				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
5.	4.4	~~For nuclear installations other than nuclear power plants,~~ the application of the safety requirements for analysis, evaluation and documentation shall be commensurate with the potential hazards associated with the nuclear installation.	Why shouldn't it be commensurate for NPP that are installation with high level of risk? A downgraded application would not be acceptable for NPP.	O.K.			
6.	4.10	Site suitability shall be assessed on the basis of current and relevant data and methodologies and shall be consistent with planned operations at the site. If relevant, conservative criteria shall be developed in relation to site specific accident scenarios ~~and the consistency of such criteria with the overall site suitability shall be demonstrated~~.	Definition of criteria is not the current practice in the domain for several MS (the previous version for MS consult use "can" instead of shall") The second part of the sentence is not clear: the article is for site suitability, how can a criterion for suitability be inconsistent with site suitability?	O.K.			
7.	4.12	For nuclear power plants, the total nuclear capacity to be installed at the site shall be determined at the first stages of the siting process. If it is later determined or anticipated that the installed nuclear capacity - for nuclear power plant - and the inventory of nuclear material – for all installations - or its impact have been increased to a level significantly greater than that previously determined to be acceptable, the site shall be re-evaluated considering the higher capacity or impact.	The inventory of nuclear material is also relevant for other installations (for example fuel cycle facilities could develop new unit on the site)	O.K.			

COMMENTS BY REVIEWER Country/Organization: FRANCE / ASN -IRSN Date: May 2018 Pages				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
8.	4.21	~~For hazards and their associated events that are excluded on the basis of the screening process, it shall be ensured that all effects relevant for design and/or safety assessment resulting from these events are bounded by the effects associated with other events or a set of events.~~ An event may be screened out through enveloping within a set of events. However, it shall be ensured that all effects of the screened out event are bounded by this set of events.	In the initial text, all the screened out hazards shall be compared with the design basis. Then screening process seems useless.	O.K.			
9.	4.38	4.38. As appropriate for the ultimate heat sink under consideration, data for the following shall be evaluated: ~~a) Ice, including frazil ice;~~ ~~b) Oil and chemical spills;~~ c) Air temperature and humidity; d) Water depth and temperature; e) Water quality characteristics, including turbidity, suspended solids, floating debris, and chemical and biochemical changes (both natural and human induced changes); f) Availability and sustainability of the water flow (for a river), minimum and maximum water level and the period of time for which safety related sources of cooling water are at a minimum level, with account taken of the potential for failure of water control structures.	a) and b) are not of the same nature of the other bullet: they are impact/consequences/effect thus included in other bullets. If they are maintained, some other bullets should be added which would not be relevant for a "requirement" document	O.K.			

COMMENTS BY REVIEWER Country/Organization: FRANCE / ASN -IRSN Date: May 2018 Pages				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
10.	5.4	~~If a capable fault is identified in the vicinity of the site of a new or existing nuclear installation and the safety of the nuclear installation cannot be demonstrated, the site shall be deemed unsuitable.~~ For the new sites, an alternative site shall be considered when reliable evidence shows the existence of a capable fault and its effects cannot be compensated by design/engineering protective measures. In case of a capable fault is identified in the site vicinity of an existing nuclear installation, the site shall be deemed unsuitable if the site safety cannot be demonstrated.)	Coming back to a previous version in order to address in different words "new" and "existing" sites.	O.K.			
11.	5.24	~~If a preliminary examination of the nuclear installation indicates that it would not be able to withstand safely the effects of the failure of one or more of the upstream structures, then the hazards associated with the nuclear installation shall be assessed with the inclusion of such effects; in the absence of such an assessment, the site shall be deemed unsuitable.~~	The proposed approach seems inappropriate, and there's no clear reason to accept such approach for a specific (flood) hazard.		Use the same formulation for NS-R-3 Rev 1.		
12.	5.35	Human induced events to be addressed shall include, but shall not be limited to: a) Events associated with nearby land, river, sea or air transport (e.g. collisions and explosions); b) …		O.K.			

Japan NRA EPReSC/NUSSC Comments on DS484 (Step 11) "Site Evaluation for Nuclear Installations"

COMMENTS BY REVIEWER Reviewer: Japan NRA EPReSC/NUSSC Page of 3 Country/Organization: **Japan** Date: 11 May 2018				RESOLUTION			
No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	**Req. 2**	**Safety objectives in site evaluation for nuclear installations** **The safety objectives in site evaluation for nuclear installations shall be (a) to characterize the natural and human induced hazards that might challenge the safety of the nuclear installation and (b) to provide adequate input for demonstration of the protection of people and the environment from radiological consequences of radioactive releases ~~due to accidents~~.**	The release of radioactive materials are not always due to accidents but included normal operations, as referred to NS-R-3 (Rev. 1) para. 2.1: *"The main objective in site evaluation for nuclear installations in terms of nuclear safety is to protect the public and the environment from radiological consequences of radioactive releases due to accidents. Radioactive releases due to normal operation (i.e. discharges) shall also be considered."*	o.k.			
2.	4.45.	It shall be demonstrated that the information provided to assess radiation risk to the population associated with accident conditions, including those that could warrant emergency response actions being taken in the external zone, is compliant with the ~~site~~ safety objectives in the site evaluation.	To keep a consistency with Requirement 2.	o.k.			
3.	5.11.	The volcanic hazards shall be assessed using appropriate information, methods and/or models, with adequate account taken of the uncertainties ~~in the information and models~~.	To keep a consistency with para. 4.24 as general requirements, which states that "appropriate methods shall be used". Therefore, "methods" should	o.k.			

COMMENTS BY REVIEWER Reviewer: Japan NRA EPReSC/NUSSC Page of 3 Country/Organization: **Japan** Date: 11 May 2018				RESOLUTION			
No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			be added in this para.				
4.	5.15.	If the impact on the safety of the nuclear installation cannot be screened out, the potential for the occurrence and the frequency and severity of lightning shall be evaluated for the site vicinity.	Clarify the reason why specific screened out process for lighting is here, though there are no descriptions of screened out processes for other events such as tornades, flooding and tsunamis. In addition, the screening process is already captured in Requirement 6 and para. 4.18 in general.	o.k.			
5.	5.28.	The geo-physical and the geo-chemical properties of the soil and groundwater shall be studied by appropriate methods and taken into account.	Completeness. “The geo-physical” and “ the geo-chemical” are used with a pair wordings stated in the IAEA safety glossary in 2016.			x	In the context of this paragraph physical is appropriate since it refer to physical characteristics of the soil materials to avoid confusion with geo-physical which is used mainly to designate indirect methods of investigations.
6.	**Req. 22**	**Evaluation of geotechnical and geological hazards** **Geotechnical and geologic hazards, including slope instability, collapse, subsidence or uplift, soil liquefaction~~, zones of high geological stress~~ and their effect on**	Clarification. "Zone of high geological stress" is used as one of the causes that lead to some hazards such as slope instability, collapse, subsidence or uplift, soil liquefaction, and should	o.k.			

COMMENTS BY REVIEWER Reviewer: Japan NRA EPReSC/NUSSC Page of 3 Country/Organization: **Japan** Date: 11 May 2018				RESOLUTION			
No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		safety of the nuclear installation, shall be evaluated.	not be treated in parallel with them, so it should be deleted.				
7.	5.31.	The potential for collapse, subsidence or uplift of the surface that can affect the safety of the nuclear installation over its lifetime shall be evaluated using a detailed description of subsurface conditions obtained from reliable methods of investigation. ~~Non-tectonic surface deformation at the site shall be included in the geotechnical hazard evaluation.~~	Clarification. Since it is already included evaluation for the possibility of collapse, subsidence or uplift of the ground surface in non-tectonic surface deformation. It should be deleted.	o.k.			

Site Evaluation for Nuclear Installations

COMMENTS BY REVIEWER Reviewer: Jila Karimi Diba Page.... of.... Country/Organization: IRAN/National Radiation Protection Department (NRPD)- Iran Nuclear Regulatory Authority (INRA) Date: 2018-05-09				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: - Page 2/Item ii: "…and ~~accident~~ emergency conditions, over the lifetime of the nuclear installation, including those ~~accidents~~ emergencies that could necessitate proper implementation of emergency ~~response~~ plans (or emergency response actions)." - Page 6/Item b/ "…radioactive releases due to ~~accidents~~ emergencies.", - Page 26/Requirement 26: "…in both operationsl states and ~~accident~~ emergency conditions,...".	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 emergency, … and other imprecise wording have been a source of concern			x	Site safety aspects are mentioned in SF-1 Principle 8 Protection against accidents. The use of accident conditions is consistent to plant states as described in Safety Glossary.

COMMENTS BY REVIEWER Reviewer: Jila Karimi Diba Page.... of.... Country/Organization: IRAN/National Radiation Protection Department (NRPD)-Iran Nuclear Regulatory Authority (INRA) Date: 2018-05-09				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			for EPReSC." In this draft "accident" has been used several times when referring to an emergency situation. Subclause 2.3 of this draft refers to Requirement 9 of SF-1 (**Arrangements must be made for emergency preparedness and response for nuclear or radiation incidents.)** According to the footnote on page 5 of SF-1: **"'Incidents' includes initiating events, accident precursors, near misses, accidents and unauthorized acts (including malicious and non-malicious acts)."** Also, According to the subclause 3.36 of **SF-1**:				

COMMENTS BY REVIEWER Reviewer: Jila Karimi Diba Page.... of.... Country/Organization: IRAN/National Radiation Protection Department (NRPD)-Iran Nuclear Regulatory Authority (INRA) Date: 2018-05-09				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			"3.36. The scope and extent of arrangements for emergency preparedness and response have to reflect: - The likelihood and the possible consequences of a nuclear or radiation emergency; - The characteristics of the radiation risks; - **The nature and location of the facilities and activities**." Which is directly in connection with the scope of this draft. So 'accident' shall be				

COMMENTS BY REVIEWER Reviewer: Jila Karimi Diba Page.... of.... Country/Organization: IRAN/National Radiation Protection Department (NRPD)- Iran Nuclear Regulatory Authority (INRA) Date: 2018-05-09				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			replaced by 'emergency' in some paragraphs of this draft.				
2	Page 2/Item ii	"…that could necessitate proper implementation of emergency ~~response~~ plans (or emergency response actions)."	In consistant with the terms in GSR Part 7	o.k.			

Site Evaluation for Nuclear Installations

DS484, Step 11, Version dated April 4, 2018

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 3 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	Req. 3 Para 4.7.	For nuclear installations other than nuclear power plants, the following shall be taken into consideration in application of a graded approach: a) The amount, type and status of the radioactive inventory at the site (e.g. whether the radioactive material on the site is in solid or fluid, or gaseous form, and whether the radioactive material is being processed in the nuclear installation or is being stored on the site); ……	Also gas should be taken into account. For example UF6 is partly in gaseous form and volumes should be taken into account.	o.k.			
1	2	Req. 20, Para 5.17	5.17. The potential for flooding in the region surrounding the site due to one or more natural causes, such as storm surge, wind generated waves, or meteotsunamis and seiches generated by traveling atmospheric disturbances, extreme precipitation including such events in combination due to a common cause or due to a relatively high frequency of	We suggest to include meteotsunamis and seiches due to traveling atmospheric disturbances because this is different from wind generated waves. These tsunamis can occur without any wind at the site and reach	o.k.			

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 3 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
			occurrence shall be evaluated.	considerable heights with almost no warning time thus having the potential for high scale damage. Peculiarity here is that these atmospheric disturbances typically occur far away from the site under consideration and need special means in order to be implemented in site evaluation. For more details on meteo-tsunamis please refer e.g. to NOAA Technical Report NOS CO-OPS 079 “An Examination of the June 2013 East Coast Meteotsunami Captured By NOAA Observing Systems” and references therein or HASLETT, S. K., HOLLY, E. M. & BRYANT, E. A. (2009): Meteo-tsunami hazard associated with summer thunderstorms in the United Kingdom. –			

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS) Pages: 3 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
				Physics and Chemistry of the Earth 34: 1016 – 1022.				
2	3	Req. 26	**Requirement 26: Population distribution and ~~exposure of the public~~ public exposure**	We suggest to make this change as “public exposure” is an accepted expression of the IAEA SAFETY GLOSSARY	o.k.			

DS-484 - Site Evaluation for Nuclear Installations

COMMENTS BY REVIEWER Reviewer: Atomic Energy Regulatory Board Page.... of.... Country/Organization: India Date:				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Requirement 2	The safety objectives in site evaluation for nuclear installations shall be (a) to characterize the natural and human induced hazards that might challenge the safety of the nuclear installation and (b) to provide adequate input for demonstration of the protection of people and the environment from radiological consequences of ~~radioactive releases due to~~ accidents	The requirement would be clear enough without the deleted words.			x	Modified by another MS to be more general.
2	4.45	Replace 'radiation risk' with 'potential effects'	To be consistent with terminology used in para 4.40	o.k.			
3	4.51	Consider adding the following at the beginning of the paragraph 'Site related data / parameters, as required for evaluation of external events, establishment of design bases and response analysis of SSCs of the nuclear facility shall be collected through appropriate site investigations.'	For completeness. The current sentence starts with the presumption that data has already been collected.			x	Modified by another MS and addresses the quality and quantity of the data which is the intend of this paragraph.
4	5.2	The following sentence may be added to the para. "If it cannot be established that a	To ensure conservatism, even in case of inconclusive evidence			x	Requirement should not preclude the interpretation of the

COMMENTS BY REVIEWER Reviewer: Atomic Energy Regulatory Board Page.... of.... Country/Organization: India Date:				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		fault is not capable, the same shall be considered in the seismotectonic evaluation as capable"	regarding the 'non-capability' of a fault.				assessment result. I suggest to consider this for the Safety Guide.
5	5.11	The aspect of 'assessment using appropriate information and models with adequate account taken of the uncertainties in the information and models' is applicable to assessment of all cases of external hazards covered in chapter 5. Therefore introducing similar statements in all relevant sub sections may be considered (from requirement 15 to requirement 24).	The aspect covered in 5.11 is generic for all external hazards.		Paragraph was modified to be specific for volcanic hazards. The general aspects are covered by paragraphs 4.23 and 4.24 of the Requirement 7.		
6	6.1 5th line	Replace 'diversion' with 'dispersion'	Editorial.	o.k.			
7	6.11	Add at end of sentence 'as well as dietary habits of the population'	The dietary habits of population is also an important parameter that governs the estimation of potential exposure to public.			x	The scope of DS484 includes the characteristics of the land and water utilized in the region that should be considered in demonstrating the feasibility of the emergency response plan. The dose assessment is out of

COMMENTS BY REVIEWER Reviewer: Atomic Energy Regulatory Board Page.... of.... Country/Organization: India Date:				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
							scope. It is addressed by other IAEA publication.
8	7.4, 4th line	Replace 'and in the event' to '**or** in the event'	To reflect the actual intent of the requirement. If 'and' is used, the review as required by the specific cases (a to h) may have to wait until the periodic safety review becomes due.	o.k.			

DS-484 "Site Evaluation for Nuclear Installations"

COMMENTS BY REVIEWER Reviewer: NUSSC Member Page…. of … Country/Organization: Pakistan /PNRA Date: 10 May 2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	Requirement 1: Application of the management system for site evaluation	Requirement 1: Leadership and ~~Application of the~~ management system for site evaluation Site evaluation shall be conducted under strong leadership in a comprehensive, systematic, planned and documented manner in accordance with a management system.	Proposed addition of text will harmonized this Safety Standard with GSR-Part2.			x	Requirement 1 is basically reflection of GS-R part 2 Requirement 3 and 6. It is assumed that Lidesrhip for safety is provided by the senior management. Also reference is made to GS-R part 2.
2.	**3.1**	An integrated management system shall be established under strong leadership covering the organization, planning, work control, personnel qualification and training …	Harmonize it with comment-1			x	See above.
3.	Requirement 3: Scope of the site evaluation for nuclear installation	Requirement 3: Scope of the site evaluation for nuclear installations A graded approach shall be applied in determining the scope of site evaluation. ~~The scope of~~ The site evaluation shall encompass both	1. Proposed addition will harmonize the text written in para 4.3 2. Graded approach in the requirement section will help			x	Requirement should be general and concise. Paragraph 4.3 already introduces the use

COMMENTS BY REVIEWER Reviewer: NUSSC Member Page…. of … Country/Organization: Pakistan /PNRA Date: 10 May 2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
	s	factors relating to the site and factors relating to the interaction between the site and the installation, for all operational states and accident conditions, including accidents that could warrant emergency response actions.	in determining the scope for very small nuclear installations				of graded approach.
4.	**4.8(a)/1st**	The effects of external events ~~affecting~~ occurring in the region ~~surrounding the~~ and affecting the particular site (…)	The events occurring in a specific region around the nuclear installation site and their effects are studied on proposed site.	o.k.			
5.	**4.8(b)**	The characteristics of the site and its environment that could influence the transfer of radioactive material to people and to the environment being released from the nuclear installation; ~~of radioactive material being released from the nuclear installation;~~	Editorial			x	This formulation is o.k. "b) The characteristics of the site and its environment that could influence the transfer to people and to the environment of radioactive material being released from the nuclear installation;"
6.	Requirement 5: Site	Requirement 5: Site and regional characteristics	Harmonized the text used on other places in this Safety	o.k.			

COMMENTS BY REVIEWER Reviewer: NUSSC Member Page…. of … Country/Organization: Pakistan /PNRA Date: 10 May 2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
	and regional characteristics	The site and the region shall be investigated with regard to the characteristics that can impact on the ~~nuclear~~ safety of nuclear installation and the potential radiological impact of the nuclear installation on people and the environment.	Standard.				
7.	**4.17**	4.17. The site and the region shall be studied to evaluate the present and foreseeable future characteristics that could have an impact on ~~nuclear~~ safety of nuclear installation. This includes potential changes ….	Harmonized the text used on other places in this Safety Standard.	o.k.			
8.	**4.22/1st**	~~Proposed sites for~~ The site for a nuclear installation shall be evaluated with regard to the frequency and severity of external natural and human induced events, and the potential combinations of such events, that could affect the safety of the nuclear installation.	The word "proposed sites" may be replaced with "the site". As the selected site will go through evaluation process for lifetime of installation.	o.k.			
9.	**5.20/2nd sentence**	The potential for tsunamis or seiches from phenomena other than seismic sources such as submarine landslide etc. shall be evaluated as appropriate for the region.	One of the major and common cause of tsunami generation other than seismic source is submarine landslide. It may be included for more elaboration.	o.k.			

Form for Comments

Site Evaluation for Nuclear Installations (DS484), Draft ¤th April 2018, NUSSC STEP 11

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: M-L Järvinen Page.... of.... Country/Organization: STUK Date: 15th May 2018							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	1.3	The objective of this publication is to establish appropriate requirements and criteria for: a) Defining the information to be used in the site evaluation process; b) Evaluating a site such that the site related hazardous phenomena and characteristics are adequately taken into account, so that the corresponding site specific design parameters are appropriate; see also 1.11, 1.12, 3.3, 3.6, 4.20 and 4.23	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 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.	O.K.	A footnote was added: "Site specific design parameters are used to show that are enveloped by the those used in the development of the design and the installation is adequate for the selected site otherwise the design should be modified accordingly" Generally the plants are not designed specific to a single site and the real design input is generic covering conditions for a large number of		

					potential sites. Once a site was selected the site specific design parameters are developed and compared with the ones used in the design.		
2.	**Requirement 25:**	**Dispersion of radioactive material** **The dispersion in air and water of radioactive material released from the nuclear installation in operational states and <u>accidents</u> ~~conditions~~ shall be assessed**.	accidents, Also accidents more severe than considered in the design should be considered. Obs! Change in the definitions of the accident conditions SSR-2/1. DS484 should be in line with GSR Part 4.	o.k.			
3.	**Requirement 26:**	**Population distribution and exposure of the public** **The distribution of the population within the region over the lifetime of the nuclear installation shall be projected and evaluation of the potential impact of radioactive releases, in both operational states and <u>accidents</u> ~~conditions~~, on the population shall be conducted and periodically updated.**	accidents, Also accidents more severe than considered in the design should be considered. Obs! Change in the definitions of the accident conditions SSR-2/1. DS484 should be in line with GSR Part 4.	o.k.			

DRAFT GUIDE DS484 "Site evaluation for Nuclear Installations" – Step 11

ENISS Comments

COMMENTS BY REVIEWER Reviewer: T. Veneau Country/Organization: ENISS			Page 1 of 2 Date: 11/05/2018	RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	4.29	~~4.29. The possible non-radiological impact of the nuclear installation, due to chemical or thermal releases, and the potential for explosion and the dispersion of chemical products shall be taken into account in the site evaluation process.~~	This requirement is unconsistent with §1.13. *« 1.13. This publication addresses the evaluation of those site related factors that have to be taken into account to ensure that the site–installation interactions do not constitute an unacceptable risk to people or the environment over the lifetime of the nuclear installation.* ***Non-radiological aspects of the environmental impact of the site and the nuclear installation are not covered in this publication****. »*		The paragraph was changed to avoid unconsistency with §1.13 "4.29. The possible chemical or thermal releases, the potential for explosion and the chemical products that may affect safety functions of the nuclear installations or dispersion characteristics of radio nuclides shall be considered in the site evaluation process:.		
2.	4.30	~~4.30. The potential for interactions between radioactive and non-radioactive effluents, such as interactions due to the combination of heat or chemicals with radioactive material in liquid effluents, shall be considered.~~	This new article, added in step 11, is not consistent with §1.13 (see comment n°1).			x	Interactions between radioactive and non-radioactive effluents may affects dispersion/difusion characteristics and ultimately radiological impact.
3.		4.48. The data collection process	Safety requirements apply	o.k.			

		shall address the following as a minimum: a) Information on external natural and human induced hazards: sources of hazards, propagation of hazards, potential effects on the nuclear installation and on ~~workers,~~ public and the environment;	for the protection of public and the environment, and therefore apply also to those workers needed to bring and maintain the plant under safe state. As workers are covered by another regulatory framework, i.e. national "Labor acts", it's preferable to dissociate them from the requirements applying the main safety principles.				
4.		5.39. Hazards associated with chemical explosions or other releases shall be expressed in terms of heat, overpressure and toxicity (if applicable), with account taken of the effect of distance, and the worst combinations of atmospheric conditions at the site. ~~In addition, the potential effects of such events on site workers shall be evaluated.~~	See comment n° 3			x	These are hazards that may challenge the safety of nuclear installations (they do not refer to non-radiological aspects of the environmental impact).

Comments on DS484, "Site Evaluation for Nuclear Installations" (Step 11)

COMMENTS BY REVIEWER Reviewer: Jinho LEE Page:1 of 1 Country/Organization: Korea / KINS (Korea Institute of Nuclear Safety) Date: 05/25/2018				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	Para 4.33 / Line 3-5	Delete the second sentence of Para 4.33: *"4.33. If measures for site protection are required to be implemented, uncertainties shall be properly taken into account in the evaluation of the extreme values of external natural and human induced hazards associated with the measures for site protection.* ~~*Measures for site protection shall be classified, designed, built, maintained and operated as structures, systems and components important to safety.*~~	In IAEA Safety Glossary (Reference 9 of the Draft Standard DS484), 'item important to safety' is defined as "An item that is part of a safety group and/or whose malfunction or failure could lead to radiation exposure of the site personnel or members of the public." Measures for site protection can be taken for items not important to safety as well as items important to safety. All the measures for site protection do not have to be classified as SSCs important to safety. For consistency, it is suggested that the things relevant to safety classification be addressed			x	Site protection measures in the context of this document are those required due to safety reasons (nuclear installations cannot safely survive the impact of the hazard severity for which site protection is needed). Therefore, the failure of the site protections will have the consequence of failure of the protected safety functions and associated safety related structures systems and components (SSCs). For this reason, site protection shod be designed, built and operated as an item

			in IAEA Safety Standard SSG-30.				important to safety.