

**DS478 Draft Specific Safety Requirement
 “Safety of Nuclear Fuel Cycle Facilities”
 Status: STEP 12: For submission to the CSS**

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Page 1 of 2 Date: 2017-04-04			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
3	1	Requirement 6, Para. 4.29	The operating organization shall establish one or more internal safety committees (or advisory groups) to advise the management of the operating organization on safety issues relating to the commissioning, operation and modification of the facility ¹⁴ . The safety committee shall have among its membership experts with the necessary breadth of knowledge and experience to provide appropriate advice. The committee shall be independent of the regulatory body and its membership shall, to the extent practicable, be independent of the operations management ^{14new footnote} .	Within footnote 14, the reference “see also GSR Part 2 para. 4.13 [4]” seems to refer to the subject of “membership of the safety committee”, but this is not the case. The reference [4] should be given in the first sentence, where it fits the subject better.				

¹⁴ See also GSR Part 2 para. 4.13 [4]
^{14new footnote} The membership of the safety committee may differ with facility type and the chairperson could be the facility manager, see also GSR Part 2 para. 4.13 [4]

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3	2	Para. 6.148; Para. 6.162 / lines 3 to 5	<p>If the design of the facility takes into account burnup credit, its use shall be appropriately justified in the criticality safety analysis³⁷.</p> <p>³⁷ See also Requirements 22 and 23</p> <p>[...] The necessary ratings of the fire barriers and means of passive protection and physical separation against fires and explosions shall be based on a documented fire hazard analysis and an explosion hazard analysis for the nuclear fuel cycle facility^{32new footnote}. [...]</p> <p>^{32new footnote} See also Requirements 22 and 23</p>	There is no footnote No. 37 at the end of the page. If this footnote refers to footnote 37 in para. 6.162, the footnotes should be separated and their text should be repeated.				

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

DS478, Safety of Nuclear Fuel Cycle Facilities

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: NSSC Country/Organization: Republic of Korea/NSSC Date: March 14, 2017							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Page 46	6.107. The design process shall give due consideration to the layout of facilities and equipment, and to procedures, including procedures for maintenance and inspection, facilitating the interaction between the operators and the facility in all facility states.	The expression “give consideration” rather than “give due consideration” seems to be more appropriate in this sentence.				
2	Page 46	6.108. Control panels shall be provided with clear displays and audible auditory signals for those parameters that are important to safety.	The term “auditory signals” rather than “audible signal” to be more appropriate expression for signals in control panel.				
3	Page 46	6.109. The design shall minimize the demands on operators in normal operation, in anticipated operational occurrences and in accident	“c) Appropriate interlocks, keys, passwords and other control devices.” is not appropriate for the purpose of minimizing demands on operator.				

		<p>conditions, by considering provision of the following;</p> <ul style="list-style-type: none"> a) Automatic actuation of appropriate actions to promote the success of the operation; b) Clear indications whenever significant changes of process state occur; c) Appropriate interlocks, keys, passwords and other control devices. 					
4	Page 46	<p>6.109. The design shall minimize the demands on operators in normal operation conditions, in anticipated operational occurrences abnormal conditions and in accident conditions, by considering provision of the following;</p> <ul style="list-style-type: none"> a) Automatic actuation of appropriate actions to promote the success of the operation; 	<p>It is necessary to make consistency of plant operation condition as normal conditions, abnormal conditions, accident conditions in this paper.</p>				

		<p>b) Clear indications whenever significant changes of process state occur;</p> <p>c) Appropriate interlocks, keys, passwords and other control devices.</p> <p>6.110. Individuals undertaking analyses of human and organizational factors shall be appropriately trained and qualified. Operating personnel who have gained operating experience in similar facilities shall, as far as practicable, be actively involved in the design process, in order to ensure that consideration is given to the future operation of the facility (including normal conditions, abnormal conditions and accident conditions) and maintenance of equipment.</p>					
5	Page 54	6.144 Uncertainties in all	It needs to be emphasized that				

		parameters (e.g. mass, density, geometry, and nuclear cross-section data sets, computer code and burnup)	uncertainties by computer code and burnup are important.				
6	Page 55	6.148 ~ the criticality safety analysis ³⁷ .	The footnote 37 was omitted.				

TITLE: DS478 “Safety of Nuclear Fuel Cycle Facilities”

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Reviewer:		Page of 5					
Country/Organization: Japan/NRA		Date: 24 Mar., 2017					
Comm ent No.	Para/Line No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Rejecte d	Reason for modification/ rejection
1.	General	There are a lot of differences between SSR-3 “Safety of Research Reactors” and this document. General requirements such as regulatory supervision, management, site evaluation, preparation for decommissioning and interfaces between safety and security should be kept consistency as minimum.	Keep consistency with SSR-3.				
2.	Para. 4.6. Footnote 10	Senior management is the person or group assigned by the organization that directs, controls and assesses an organization at the highest level. Many different terms are used, including, for example: chief executive officer, director general, executive team, executive board, facility manager, top manager, site vice president, managing director and laboratory director [7].	Keep consistency with GSR Part 2 and Ref [7], in which this sentence are not described. This description appears in GS-R-3, which was superseded by GSR Part 2, but it has deleted in GSR Part 2.				
3.	Para 4.8./ Line 7	A graded approach shall be applied to determining the extent of development and application of the management system that is required for a particular nuclear fuel cycle facility. <u>The extent of development and application of the management system shall be determined in accordance with a graded approach for a particular nuclear fuel cycle facility.</u>	Keep consistency with SSR-3 using as “.... in accordance with a graded approach”.				

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4.	Para 4.14.	The provisions of the management system shall be based on four functional categories: management responsibility; resource management; process implementation; and measurement, assessment, evaluation and improvement.	To keep consistency with GSR Part 2, in which requirement 13 says “measurement, assessment and improvement of the management system”. Evaluation is usually included in assessment.				
5.	Para 6.21./ Line 13	If operator actions are necessary in such events <u>and it can be ensured that the operator will have sufficient time to take the necessary actions</u> , the operator actions shall only be credited in the early phase of the failure of a safety system if it can be ensured that the operator will have sufficient time to take the necessary actions .	Completeness. To avoid one sentence with two similar “if” statements.				
6.	6.67.	Requirement 20: Design basis analysis 6.67. For each event scenario (or group of event scenarios), the safety functions and corresponding items important to safety and administrative controls that are used to implement the defence in depth concept shall be identified. Non-permanent equipment that is important to safety shall be included in the analysis.	The design shall also include features to enable the use of non-permanent equipment only for DEC, not for DBA.				
7.	Requirement 11, 21 and para. 6.76.	The use of a graded approach in application of the safety requirements for a nuclear fuel cycle facility shall be commensurate with the potential risk of the facility and shall be based on safety analysis, expert engineering	“Expert judgement” is ambiguous for the basis of deciding the potential risk, while other two (safety analysis, regulatory requirements) can provide clear basis to judge the potential risk.				

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		judgement and regulatory requirements.	Furthermore, “engineering judgement” are already used in SSR-2/1 (Rev. 1) requirement 20 and SSR-3 requirement 22. Propose this again as discussed in the last 42 nd NUSSC meeting.				
8.	Para 6.69.	Dose constraints, risk constraints and reference levels shall be set in respect of the radiological consequences radiation protection and associated chemical consequences for workers, and associated chemical consequences for workers <u>shall be also taken into account</u> ,	To keep consistency with GSR Part 3, which defines as follows; “Dose constraints and risk constraints is used in planned exposure situations, while reference levels is used in an emergency exposure situation or an existing exposure situations.” The wording “radiological consequences” in this document is used for the results of accident conditions, so, “radiological consequences” is suggested to be replaced with “radiation protection”, which include all exposure situations. In addition, these three concepts are not used for “chemical consequences”.				
9.	Requirement 27	Ergonomics and Human factors <u>engineering</u>	To keep consistency with SSG-34, SSG-39 and other safety standards.				

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Reviewer:		Page of 5					
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10.	Requirement 34	<p>Design for protection against internal radiation exposure</p> <p>The design shall ensure that doses to workers and the public and the environment are protected against uncontrolled releases of radioactive materials in all facility states.</p>	Internal radiation exposure is not able to apply for the environment.				
11.	Requirement 36	<p>Design for protection against external radiation exposure</p> <p>Provision shall be made for ensuring that doses to workers and the public at the facility will be kept as low as reasonably achievable, with account taken of the relevant dose constraints, and shall be kept below the dose limits.</p>	The public should be also protected against external radiation exposures. Also to be consistent with Req.34.				
12.	Para. 6.144. (c)	Mass: criticality safety shall be assessed with significant <u>adequate</u> margins;	To keep consistency with the overarching of requirement 38.				
13.	Para. 6.181. /Line 6	Deletion Some emergency response facilities may be located off the site.	Requirements and features on emergency response facilities are described in requirement 48.				
14.	Title of Requirement 48	Provision of an emergency centre response <u>facility</u>	To keep consistency with the term used in SSR-2/1 (Rev. 1) requirement 67 and SSR-3 requirement 55.				

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15.	Requirement 50	Provision of compressed air systems Compressed air systems relied upon for safety functions shall be identified in the safety analysis and appropriate safety features shall be provided in the design.	To avoid confusing for “appropriate safety features shall be provided”. Usually, “safety features” are used for DEC, however, it is unclear for the independency between compressed air system in design basis and “safety features” in DEC.				
16.	Para 9.15./Line 2-3	The required operating personnel, both the number of personnel and the duties for which they are required to be authorized-qualified , shall be specified either in the operational limits and conditions or through appropriate arrangements approved under the licence.	To avoid miss-understanding. The term “authorize” in this document is used for the actions carried out by regulatory body. However, the action in this para is actions carried out by operating organization.				
17.	Para 9.40.	The refresher training shall also include retraining provision for personnel who have had extended absences from their authorized duties.	Ditto. The sentence without “authorized” makes sense.				