Safety Requirements for Decommissioning (DS450)

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: County/Organisation:			Page 1 of 4 Date: 30 January 2013				
Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
1	General	The document is focussed on identifying decommissioning issues during the early stages of a nuclear facility's life. It could be of additional use if it also provided guidance on existing facilities around the world that are either nearing the end of their operational lives or have already shut down without carrying out initial decommissioning planning of this standard.	General comment			x	All the phases of the life-cycle have been covered
2	General	Document referencing	A consistent style of references should be used throughout the document.	x			

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
3	1.9 (and elsewhere)	Some discussion of the IAEA Glossary definition of decommissioning be included.	In section 1.9 and elsewhere, it is suggested that the only way to decommission is to dismantle (noting that entombment is also given as a last resort if some severe accident has occurred at the facility). The IAEA Glossary (and repeated in DS450) decommissioning is defined as: *administrative and technical actions taken to allow the removal of some or all of the regulatory controls from a facility.* For some facilities, decommissioning might not involve dismantling. That is, once production stops and a short period of decay has occurred, there is no longer a radiological hazard present.			X	Guides are discussing the use of decay as a mean to terminate the authorization.
4	1.9	Include 'loss of experienced staff' in the third bullet point.	Extra valid example.			X	Does not fit into third bullet

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
5	1.18(2)	... requirements of the *IAEA* safety standards ...	It is not clear whether the “safety standards” are those of the IAEA or the national regulatory body. Presumably it is the former and should be clarified.		X		(2) They are subject to regulatory control but not in accordance with the requirements of the existing national and IAEA safety standards.

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
6	3.3	Some discussion of the IAEA Glossary definition of decommissioning be included.	In section 1.9 and elsewhere, it is suggested that the only way to decommission is to dismantle (noting that entombment is also given as a last resort if s0me severe accident has occurred at the facility). The IAEA Glossary (and repeated in DS450) decommissioning is defined as: *administrative and technical actions taken to allow the removal of some or all of the regulatory controls from a facility.* For some facilities, decommissioning might not involve dismantling. That is, once production stops and a short period of decay has occurred, there is no longer a radiological hazard present.			X	See 1.9 (it does not fit into third bullet)

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
7	3.3 dash point 10	Reword to: establishing requirements for the collection of records and reports relevant to decommissioning, and for mechanisms for their retention	Clarity		X		"Establishing requirements for the collection and retention of records and reports relevant to decommissioning"
8	Require-ment 6 2nd sentence	... The operator shall be responsible for all aspects of safety and protection of *people and* the *environment* during decommissioning.	Grammar. Note also that 'environmental' is used in the original sentence. This appears to be a typographical error.	X			

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
9	3.4 last dash point	Reword to: collecting, retaining and submitting records and reports as required by the regulatory body	Clarity		X		"keeping and retaining records and submitting reports as required by the regulatory body"
10	4.4	Individuals made responsible for performing decommissioning *actions* shall have the necessary skills, expertise and training to perform decommissioning safely	Clarity	X			
11	7.10	Insert 'operational' after 'authorized'.	Clarity.		X		"cessation of operation"

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
12	Section 7.10	If a facility is permanently shut down and/or is no longer used for its intended purpose, a final decommissioning plan shall be submitted to the regulatory body for approval *within a timeframe agreed with the regulatory body.*	Clarity			X	The 2-year requirement is considered a good regulator practice (in order to limit the duration of transition). Flexibility is kept by the second part of the sentence "unless…"
13	Section 7.10	**Alternative** Provide a reason for the 2 year requirement.	Clarity			X	See above

Comment No.:	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Reject	Reason for modification / rejection
14	9.3	Replace: "... ensure protection and safety and protection of the environment" with: "… ensure safety and protection of people and the environment."	Grammar		X		"to ensure safety, radiation and environmental protection"

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COMMENTS BY REVIEWER Reviewer: Christian KENNES, Chantal MOMMAERT, Sofie VERMOTE Page 1 of 1 Country/Organization: Belgium / Bel V Date: 10/01/2013				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	§1.7	"Planning for decommissioning begins at the **siting** stage and…" instead of **design**	In order to have a better coherence with §7.1: "For new facilities, consideration of decommissioning shall begin early in the **siting** stage and…"			X	Decommissioning considerations start at siting phase, while the planning starts with the facility design.
2	§1.7	"Planning for decommissioning begins at the design stage and includes the collection of information and data relevant to decommissioning to facilitate: - Future decommissioning; - Selection of a decommissioning strategy; - Performance of radiological characterization of the facility; - Preparation of a final decommissioning plan; - Submission of the plan to the regulatory body for review and approval; - Any activities for public communication and consultation required by national requirements."	Splitting up in different points in order to have a clearer and unambiguous formulation.			X	The purpose of Background is to introduce the main concepts. The details on the planning objectives are given in Req. 10 and 11.

3	§7.5	"This initial decommissioning plan shall be required in order to - ensure that sufficient funds will be available for decommissioning - facilitate the future decontamination process - identify waste categories - estimate quantities of waste."	-Splitting up in different points in order to have a clearer and unambiguous formulation. -Reformulation of the second point in order to have a clearer formulation			X	No added value if reformatted to bullets. There are many paragraphs that can be reformatted that way. See the revised text modified to requests from several countries.
4	Requirement 13	"Emergency planning arrangements, **evolving as a function of** the hazards, shall be established and…" instead of "…, **commensurate with** the hazards,…"	In order to state more clearly that the emergency planning should evolve as a function of the hazards. More specific, not only proportionality of the hazards should be taken into account, but also an evolution of the type of hazards.			X	Established and maintained – to "maintain" includes changes (evolution) in the emergency arrangements during decommissioning, if adequate.

DS 450, Decommissioning of Facilities; General Safety Requirements Part 6; No. GSR Part 6

The proposed new safety requirement is a very important one that will complement the series of safety requirements. It will supersede the WS-R-5 that was well known in the nuclear community and unfortunately less known in the other nuclear energy application fields. There should be a need for planning decommissioning since the design stage of any facility that will needed. Of course a graded approach also will be needed in its application and it is covered in the proposed draft.

The stated objectives are appropriate, and are met by the document.

The scope is appropriate and well described and fulfilled in the text. It should be noticed that there is a large experience in the application of the WS-R-5 which helps in review of the proposed new GSR Part 6. The requirements/guidance in the document represent the current consensus among specialists in the field, and are expressed clearly and coherently

The proposed text is clear and well understood. Nevertheless some comments are presented in the attached table to be considered.

COMMENTS BY REVIEWER Reviewer: Luis Jova Page.... of.... Country/Organization: National Centre for Nuclear Safety Date: December 2012				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification / rejection

1	**Para 1.17, line 3** ...”facilities for the processing and storage of waste that is not from the nuclear fuel cycle”...	...”any facilities for the processing and storage of radioactive waste”...	When you are saying “...other nuclear fuel cycle facilities”... this not implicitly means that the radioactive waste management facilities and storage for nuclear radioactive waste are included. In the way that is proposed this includes all the facilities no mater if they are part or not of the nuclear fuel cycle.		X		This publication applies to nuclear power plants, research reactors, other nuclear fuel cycle facilities, facilities for processing naturally occurring radioactive material (NORM), medical, industrial and research facilities (MIR) and facilities for the processing and storage of waste from MIR facilities.

2	**Para 1.18, line 3** ..."There may be areas of land that have become contaminated as a result of the normal operation of the facility; which would not constitute an incident or an emergency exposure situation."	"... There may be areas of land that have become contaminated as a result of the normal operation of the facility; which would not constitute an incident or an emergency situation."	In the way that is expressed now it is mixture of two different concepts: new exposure situations in one side and in the other accident and incidents.		X		"There may be areas of land that have become contaminated as a result of the normal operation of the facility." The clean-up of these areas would also be included as part of decommissioning.

3	**Requirement 1, page 8**	Requirement 1, Exposure during decommissioning shall be considered to be an authorized planned exposure situation and the relevant requirements of the Basic Safety Standards [4] shall be applied accordingly during decommissioning.	Requirement 1, Exposure during decommissioning shall be considered to be ~~an authorized~~ a planned exposure situation and the relevant requirements of the Basic Safety Standards [4] shall be applied accordingly during decommissioning. In the IAEA Safety Standards Series it is supposed or implicit that the planned exposure situations are "authorized". There are not "Unauthorized planed exposure situations"	X			

4	**Para 2.2**	2.2. In addition to provisions to protect against exposure during planned activities, provision shall be made during decommissioning for protection against, and for mitigation of, exposure due to an incident.	2.2. In addition to provisions to protect against exposure during planned activities, provision shall be made during decommissioning for protection against, and for mitigation of, exposure due to an incident or accident. According to the IAEA Safety Glossary: **Accident** Any unintended event, including operating errors, equipment failures and other mishaps, the consequences or potential consequences of which are not negligible from the point of view of protection or safety **Incident** Any unintended event, including operating errors, precursors, near misses or other mishaps, or unauthorized act, malicious or non-malicious, the consequences or potential consequences of which are not negligible from the point of view of protection or safety		.	X	See INES scale: accident is an event of level 4 and higher. Such events are not anticipated to happen during decommissioning.

5	**Requirement 2**	A graded approach shall be used for all aspects of decommissioning in determining the scope and level of detail for any particular facility, consistent with the magnitude of the possible radiation risks arising from the decommissioning [4, 5].	We would suggest adding reference to GSR Part 1 which states in the Requirement 26: Graded approach to review and assessment of a facility or an activity (4.40–4.48).			X	Adding an additional reference does not add any value to the requirement.

6	**Para 3, bullet 3**	- establishing requirements for financial assurance for the funding of decommissioning and for a mechanism to ensure that adequate resources will be available when necessary for safe and timely decommissioning, in the case where the government has delegated this to the regulatory body;	establishing requirements for financial assurance for the funding of decommissioning and for a mechanism to ensure that adequate resources will be available when necessary for safe and timely decommissioning, in the case where the government has delegated this to the regulatory body. **Non facility should be authorized for operation if such financial assurance is not established;** At least the responsibility of the regulatory body for not approve any facility if such mechanism is in place should be noticed.			X	Delete “timely” to be consistent with one of the previous comments/resolutions. The proposed addition is related to operational requirements (authorization for operation).

7	**Requirement 6**	Responsibilities of the operator. The operator shall implement planning for decommissioning and shall carry out the decommissioning actions in compliance with the authorization and with safety standards and requirements derived from the national legal framework...	Responsibilities of the operator. The operator shall implement planning for decommissioning **since the design stage** and shall carry out the decommissioning actions in compliance with the authorization and with safety standards and requirements derived from the national legal framework... This an important requirement mentioned in different parts of this document but not in the requirements. This statement is important nowadays because it was not established in this way in many countries and need to be emphasised.			X	Already mentioned in the Background.

8	**Para 3.4, bullet 8**	- identifying a destination for all waste arising from decommissioning actions and for any waste arising from the operation of the facility and processing the waste appropriately	- establishing a radioactive waste management strategy (plan) [9] identifying in the final decommissioning plan or in advance a destination for all waste arising from decommissioning actions ~~and for any waste arising from the operation of the facility~~ and processing the waste appropriately. Always the radioactive waste management plan was a requirement for decommissioning. Now it is a requirement for predisposal management of radioactive waste [9]. In addition, as was mentioned before in the document it is supposed that all operational radioactive waste, spent fuel and other radioactive waste were removed from the facility before the		X		Licensee is responsible for managing remaining waste from operation and all the waste coming from decommissioning.

9	**Para 3.4, bullet 8**	- keeping records and submitting reports as required by the regulatory body.	- keeping **lifetime operational and decommissioning** records and submitting reports as required by the regulatory body. It is important for the operator to maintain operational records that will assist in the elaboration of the development of the final decommissioning plan.			X	Details on record keeping will be specified in the guides.

10	**Para 3.4, bullet 14**	- performing radiological surveys in support of decommissioning;	- performing radiological surveys in support of decommissioning **with special emphasis in the control of the application of clearance criteria and control of discharges**; Some how in the document in some part the control of clearance of materials and discharges should be established as important activities in decommissioning.			X	There is no a requirement to do clearance. Clearance is not a mandatory process, it is a good practice which is recommended, but is not required.

11	**Para 4.3**	The prime responsibility for safety shall remain with the operator. It shall be permissible to delegate the performance of specific tasks to contractors and the management for decommissioning shall ensure that the work of contractors is appropriately controlled and that it shall be conducted safely.	The prime responsibility for safety shall remain with the operator. It shall be permissible to delegate the performance of specific tasks to contractors and the management for decommissioning shall ensure that the work ~~of contractors is appropriately controlled and that it~~ shall be conducted safely. **The control of processes contracted to external organizations shall be identified within the management system. The operator shall retain overall responsibility when contracting any processes.** This is more precise regarding the responsibility of the operator when contracting external services that are very common in decommissioning.		X		"The prime responsibility for safety shall remain with the operator. The operator can delegate the performance of defined tasks to contractors, but the management for decommissioning shall ensure that the work of contractors is appropriately controlled and is conducted safely."

12	**Para 4.7 (NEW)**		Records shall be specified in the process documentation and shall be controlled. All records shall be readable, complete, identifiable and easily retrievable. Retention times of records shall be established to be consistent with the statutory requirements and knowledge management obligations of the operator with operation and decommissioning. The media used for records shall be such as to ensure that the records are readable for the duration of the retention times specified for each record. Records are very important for decommissioning and they are a key component of any management system. This is why a Para should be devoted to this particular issue in describing the management system.			X	General for any activity, not only for decommissioning. Too detailed for this top level publication. Useful input for guides.

13	**Requirement 8**	Requirement 8: Selecting a decommissioning strategy. The operator shall select a decommissioning strategy, which will form the basis for the planning for decommissioning. The strategy shall be consistent with national policy on decommissioning and waste management.	Requirement 8: Selecting a decommissioning strategy. The operator shall select a decommissioning strategy, which will form the basis for the planning for decommissioning. The strategy shall be consistent with national policy on decommissioning and waste management **[7, 9].** References should be added			X	According to the style used, references should not appear in the text of main requirement, but in the paragraphs below.

14	**Para 5.2**	5.2. The preferred decommissioning strategy shall be immediate dismantling. However, there may be situations in which immediate dismantling is not a practicable strategy when all relevant factors are considered.	How to conjugate the "shall" statement that is a "must" with the second sentence in this Para? Is not better to say: "The preferred decommissioning strategy ~~shall be~~ **is** immediate dismantling. However, there may be situations in which..."			X	This is taken from WS-R-5. There is an international consensus on that requirement.

15	**Para 7.3**	7.3. If permanent shutdown occurs before a final decommissioning plan is prepared, adequate arrangements shall be made to ensure the safety of the facility until a final decommissioning plan can be implemented.	7.3. If permanent shutdown occurs before a final decommissioning plan is prepared, adequate arrangements shall be made to ensure the safety of the facility until a final decommissioning plan can **be approved** and implemented. To underline that the plan shall be authorized even if something happened with the faclity			X	It is stated already in the Requirement 11 that the FDP can be implemented only after an approval by the RB.

16	**Para 7.6**	…If an incident occurs or a situation arises with consequences relevant for decommissioning, the initial decommissioning plan shall be updated by the operator as soon as possible and shall be reviewed by the regulatory body.	…If an incident occurs or a situation arises with consequences relevant for decommissioning, the initial decommissioning plan shall be updated by the operator as soon as possible and shall be reviewed **and approved** by the regulatory body.			X	The initial decommissioning plan is not a basis for conduct of decommissioning and there is no need for approval. No physical action will be performed based on the IDP.

17	**Para 7.10**	7.10. The operator shall inform the regulatory body prior to permanently shutting down the facility. If a facility permanently shut down and/or is no longer used for its intended purpose, a final decommissioning plan shall be submitted to the regulatory body for approval within two years of the cessation of authorized activities, unless an alternative schedule is prescribed by the regulatory body.	7.10. The operator shall inform the regulatory body prior to permanently shutting down the facility. If a facility **is intended to** permanently shut down and/or is ~~no~~ **not intended to be** longer used for its intended purpose, a final decommissioning plan shall be submitted to the regulatory body for approval within two years of the cessation of authorized activities, unless an alternative schedule is prescribed by the regulatory body. The requirement should well establish that the final plan should be presented before the facility is shutdown or the operation will be stopped.		X		The idea is to have the FDP after and not before the shutdown. For clarity: "within two years of the cessation" → "within two years after the permanent shutdown"

18	**Para 7.11**	7.11. The final decommissioning plan and supporting documents shall include the decommissioning strategy; decommissioning actions; the proposed end state and how the operator will demonstrate that the end state has been achieved; the timeframe for decommissioning; and details of the funding for the completion of decommissioning.	7.11. The final decommissioning plan and supporting documents shall include the decommissioning strategy; decommissioning actions; the proposed end state; **the radioactive waste management strategy and end state of the created radioactive waste** and how the operator will demonstrate that the end state has been achieved; the timeframe for decommissioning; and details of the funding for the completion of decommissioning.			X	FDP is a facility specific document. We do not have facility specific RWM strategy. The RWM strategy is a higher level document and shall be taken into account (this aspect is covered in Req. 8)

19	**Para 8.7**	8.7. Prior to starting decommissioning, the operator shall ensure the availability of adequate processing, storage and transport package(s) for the radioactive waste resulting from the decommissioning.	8.7. Prior to starting decommissioning, the operator shall ensure the availability of adequate **processing and storage capabilities** and transport package(s) for the radioactive waste resulting from the decommissioning.	X			

20	**Para 8.8**	8.8. If operational radioactive waste or nuclear fuel remains in the facility to be decommissioned after its permanent shutdown, such material shall be removed and transported to another authorized facility (e.g. for interim storage) in compliance with the applicable regulations; or otherwise the approved final decommissioning plan shall address the management of these materials [10].	8.8. If operational radioactive waste or nuclear fuel remains in the facility to be decommissioned after its permanent shutdown, such material shall be removed and transported **[10]** to another authorized facility (e.g. for interim storage) in compliance with the applicable regulations; or otherwise the approved final decommissioning plan shall address the management **[9]** of these materials ~~[10]~~. Proper references should be made in the proper places.		X		"If operational radioactive waste or nuclear fuel remains in the facility to be decommissioned after its permanent shutdown, such material shall be removed and transported to another authorized facility (e.g. for interim storage) in compliance with the applicable transport regulations [10]; or otherwise the approved final decommissioning plan shall address the management of these materials according to [9]."

Draft Safety Requirements
DS450 *Safe Decommissioning of Facilities* (11 September 2012)

ENISS Members Comments

COMMENTS BY REVIEWER Reviewer: ENISS Members Pages 1 of 8 Country/Organization: ENISS Date: 20.01.2013				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	General	DS 450 has improved significantly since the last revision in terms of clarity of requirements and structure of the document. Nevertheless there are some points were more clarification is needed or where there are unnecessary repetition in the text and which are provided in the following rows. "Funding" should be replaced by "financing" as funding is only a special way of financing. The document speaks of the "operator", not of the "licensee" – sometimes the licensee is different from the operator. As the Requirement is for facilities and not activities, the term "licensee" would be more appropriate and should be used in the whole document. The IAEA glossary could be improved by distinguishing the roles of the operator and licensee which are different in some countries. Other proposed changes are the following (marked in red).		X X			
2	1.3	"Decommissioning actions" are the procedures, processes and work activities as described in the ~~approved~~ final decommissioning plan.	Some countries have no requirements to approve the final decommissioning plan". The decommissioning plan will than be reported, the			X	According to the IAEA, the DP is the main safety related document for decommissioning.

			safety analysis report of the facility reviewed and approved by the authority before the physical decommissioning starts.				
3	1.4	… "Land" includes the surface, subsurface soil horizons and any surface or subsurface water or aquifers ~~potentially~~ affected by the radioactive material within the boundary of the facility as far as identified in the decommissioning authorization.	The land should be limited, to the boundary of the site.			X	Characterization has to identify all the impacted areas and their boundaries.
4	1.7	Planning for decommissioning begins at the design stage and continues throughout the lifetime of the facility. It includes the collection of information …	For clarification that planning is a continuous process throughout the whole lifetime of the facility.			X	Continuous planning is covered in 7.6 (updates)
5	1.22	Section 6 establishes the requirements for the ~~funding~~ financing of decommissioning	For clarity it would be more appropriate to use the wording "financing" instead of "funding" as funding is only one possibility for providing the financial resources.	X			Cross-check with other requirement publications will be needed.
6	2.3	~~Compliance with~~ Environmental radiation protection ~~standards~~ shall be maintained during decommissioning and beyond if a facility is released with restrictions on future use.	For clarification, as the whole requirements document only deals with radiation protection.(see para 1.20).		X		See the revised text modified to requests from several countries (France); Terminology used in the IAEA Safety Standards: "Environmental protection" = protection of environment from harmful effects of ionizing

							radiation (See the BSS)
7	Require-ment 4	**This framework shall include a clear allocation of responsibilities, provision of independent regulatory functions and requirements for ~~funding~~ financing mechanisms for decommissioning. All**	See comment for para 1.22	X			
8	3.2 last bullet point	- establishing a mechanism to ensure the availability of adequate financial resources for safe ~~and timely~~ decommissioning and for the management of the resulting radioactive waste.	Deletion, as it is dependent on the decommissioning strategy which allows also for deferred dismantling.		X		"...establishing a mechanism to ensure adequate financial resources are available when needed for safe decommissioning and for the management of the resulting radioactive waste"
9	3.3 first bullet point	- establishing criteria ~~and the time frame~~ for the commencement of decommissioning.	In some countries this is a decision of the licensee to determine the time frame.	X			"establishing criteria and timeframe for authorization for decommissioning". The regulator is not defining the schedule of a decom project, the schedule is proposed by the operator in the FDP, and is reviewed and approved by the RB.
10	3.3 second bullet point	- establishing criteria for protection and safety, ~~security and~~ radiation protection of the environment for the decommissioning of facilities, including criteria for clearance of material during decommissioning in accordance with national policy and criteria for end states for decommissioning and termination	Following para 1.21 security is not addressed in this requirements document. Regarding environmental protection it should again be clarified that radiological environmental protection is meant (see para 1.20)	X			To delete "security"; To use the revised title of Req. 1

		of authorization;					
11	3.3 third bullet point	- establishing requirements for financial assurance for the ~~funding~~ financing of decommissioning and for a mechanism to ensure that adequate resources will be available when necessary for safe and timely decommissioning, in the case where the government has delegated this to the regulatory body;	See comment for para 1.22	X			
12	3.3 forth bullet	- ~~establishing requirements for planning of decommissioning~~	It is not clear what is behind this requirement as all necessary requirements are already stated in the other bullet points.		X		Reorder the bullets and make 6, 5, 7 sub-bullets of 4.
13	Requirement 6	**The ~~operator~~ licensee shall be responsible for all aspects of safety and radiation protection of the environmental during decommissioning.**	See general comment. For clarification as the standard is on nuclear and radiation safety only.		X		See the revised text modified to requests from several countries (Germany)
14	3.4, bullet 7	- managing the decommissioning project and performing decommissioning actions which can be delegated to contractors.	Despite the fact that the licensee is responsible, the text should explicitly mention the possibility of delegating performances to contractors .			X	See 4.3
15	3.4 8th bullet	- identifying a destination for all waste arising from decommissioning actions and for any residual waste arising from the operation of the facility and processing the waste appropriately;	Following para 1.19 waste from operation is not part of this requirements document. Insofar it can only be the residual waste		X		See the revised text modified to requests from several countries (Cuba)
16	3.4 9th bullet	- ensuring that the facility is maintained in a safe configuration ~~during transition~~ between permanently shutting down of operations at the facility and until the ~~approval of the~~ final decommissioning	For clarification, as transition is not explained until now (firstly explained in para 7.8). Insertion as in para 7.8. See comment 2.			X	See 1.2

		plan is in place;					
17	3.4 12th bullet	preparing and implementing appropriate safety ~~and security~~ procedures, including emergency plans;	Following para 1.21 security is not addressed in this requirements standard.	X			
18	4.3	It shall be permissible to delegate the performance of ~~specific~~ tasks to contractors…	The restriction to specific tasks is not necessary as the complete decommissioning could be done by contractors, irrespective of the responsibility of the licensee.	X			See the revised text modified to requests from several countries (Cuba)
19	4.5	All individuals responsible for performing decommissioning actions shall have the responsibility to inform the decommissioning management of any concerns about safety. The decommissioning management also shall ensure that appropriate authority for suspending decommissioning actions is granted to ~~such individuals~~ responsible persons.	For Clarification – only persons responsible for decommissioning actions shall have the power to suspend work, not each worker performing decommissioning actions		X		"All individuals per-forming decommissioning actions shall have the responsibility to inform the decommissioning management of any concerns about safety. The decommissioning management shall ensure that appropriate processes are in place to grant authority and support such individuals in suspending unsafe decommissioning actions." This is consistent with promoting good safety culture

							and with the idea that any individual is responsible for safety of his work, so shall have adequate authority to stop the work in case of safety concern.
20	5.1	The selection of a decommissioning strategy shall be justified by the operator. ~~The strategy selected could be a combination of the two strategies of immediate dismantling and deferred dismantling.~~	Proposed deletion as it is a repetition of 1.9.	X			
21	5.2	~~The preferred decommissioning strategy shall be immediate dismantling. However, there may be situation in which immediate dismantling is not practicable strategy…"~~ When all relevant factors are considered the preferable decommissioning strategy shall be chosen.	Decommissioning strategy will be determined by many factors timing is just one of them.			X	See 5.3. There is an existing international consensus on this point. The same formulation was used in WS-R-5.
22	Chapter 6 and Requirement 9	To be deleted including paras 6.1 to 6.4.	Is a repetition of what is said before (e.g. in 3.2 and 3.3 and Requirement 4)			X	Chapter 6 is not only a repetition of what was said in Chapter 3, but provides additional (more elaborated) requirements.
23	Chapter 9 and Requirement 9	If comment 22 is not accepted, please change the following: **6. ~~Funding~~ Financing** **Requirement 9: ~~Funding~~ Financ-**	See comment for para 1.22	X			

		ing of decommissioning 6.3 If financial assurance for the decommissioning of an existing facility has not yet been obtained, suitable ~~funding~~ financing provision shall be put in place as soon as possible 6.4 If the decommissioned facility is released with restrictions on its future use, financial assurance shall ensure that ~~funding~~ financing covers the facility and monitoring, surveillance and control of the facility throughout the necessary time period.					
24	6.1	Adequate financial resources to cover the costs associated with safe decommissioning, including management of the resulting waste, shall be available when needed, ~~even in the event of premature shutdown of the facility (e.g. as a consequence of a severe accident).~~	To foresee the financial resources for decommissioning after a severe accident is not reasonable possible.	X			
25	7.5	This initial decommissioning plan shall be required in order to ensure that sufficient ~~funds~~ financial resources will be available for decommissioning, to facilitate early planning for minimization of decontamination, to identify categories and to estimate quantities of waste.	See comment for para 1.22 (in any case "funding" should be used so as to be consistent throughout the document)	X			
26	7.6	The initial decommissioning plan shall be updated by the operator and shall be reviewed by the regulatory body periodically, in the same timeframe as valid	The review should be done together with the PSR for plants in operation. From the safety point of view the PSR			X	It is NPP focused comment; the requirements are gen-

		for periodic safety reviews of the operating facility, at least every ~~five~~ ten years or as prescribed by the regulatory body; or when specific circumstances warrant, such as if changes in an operational process lead to significant changes to the plan…..	timeframe is set to 10a for NPPs or other nuclear installations – the review period regarding decommissioning should not be shorter, also not for other facilities. Alternative: leave out timeframes in the requirement generally and give examples in the related guides.				eral for all the facilities. However, this point will be re-discussed with WASSC, as several Member States raised their concerns.
27	7.9	~~During the transition~~ Between permanently shutting down of operations at the facility and until the final decommissioning plan is in place, operation of the facility shall be subject to authorization (e.g. continuation of the operating licence).	In line with comment 16 "transition" should be made clearer. For clarification, that a new authorization might not be required		X		See the revised text modified to requests from several countries
28	7.10	The ~~operator~~ licensee shall inform the regulatory body prior to permanently shutting down the facility. If a facility is permanently shut down and/or is no longer used for its intended purpose, a final decommissioning plan shall be submitted to the regulatory body for approval in a timely manner after ~~with in two years of~~ the cessation of authorized activities~~, unless an alternative schedule is prescribed by the regulatory body~~.	See general comment In the case of an unexpected shutdown (e.g. accident or political decision) it might not be possible to submit a final decommissioning plan within this timeframe – additionally from the safety point of view there is no gain in fixing two years. Alternative: Leave out timeframes in the requirement generally and give examples in the related guides.			X	For such situations flexibility is kept: "unless an alternative schedule is prescribed by the regulatory body". See the revised text modified to requests from several countries (Cuba)
29	7.11	The final decommissioning plan and supporting documents shall include the decommissioning strategy; decommissioning actions; the proposed end state and how the operator will demonstrate	See comment for para 1.22	X			

		that the end state has been achieved; the timeframe for decommissioning; and details of the ~~funding~~ financing for the completion of decommissioning.					
30	7.16	The availability of adequate ~~funding~~ financing for the maintenance of the facility during the deferral period and for subsequent decontamination and/or dismantlement shall be demonstrated.	See comment for para 1.22		X		"Financial resources"
31	7.17	~~Interested parties shall be provided with an opportunity to examine the final decommissioning plan and, as appropriate, supporting documents, and to provide comments prior to its approval subject to national requirements.~~	Repetition of 3.3, last bullet			X	There are many other aspects of the FDP that are of interest to local communities (social aspects, economic). So we consider it is worth repeating this point for the FDP.
32	8.3	… and exposures of workers shall be kept as low as reasonably achievable within established dose limits and dose constraints shall ~~not~~ be ~~exceeded.~~ established as appropriate.	To be consistent with the philosophy of the IAEA BSS.		X		See the revised text modified to requests from several countries
33	8.7	Prior to starting decommissioning, the operator shall ensure , as appropriate, the availability of adequate processing, storage and transport package(s) for the radioactive waste resulting from the decommissioning.	Insertion of "as appropriate" as this is not relevant in all cases, e.g. transport packages are only needed when a transport is foreseen.			X	There is no decommissioning without waste generated. Even small amounts have to be moved from the facility.

GSR Part 6 Decommissioning of Facilities

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer:			Page.... of....				
Country/Organization: Finland/STUK, Fortum			Date: 9 January 2013				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.1, 1.16, Requirement 4, Requirement 5, 7.1	General comment.	It is emphasized in the draft that decommissioning shall be considered through all stages of the lifetime of the facility starting from siting. The decommissioning is not so important at the siting stage.	X Decommissioning will not be the main driving aspect for siting, but has to be considered. Details are in the guides.			
2	1.1	General comment.	There is only a very weak connection with the decommissioning and siting of a nuclear facility. There is, however, much more strong connection with the waste disposal, which is excluded from this part. Methods and materials used during decommissioning shall be selected in such a way that they do not lead to waste forms that endanger the long term safety of final disposal of the decommissioning waste.				
3	1.5	Decommissioning is performed us-	In the optimization the			X	Disposal of the

		ing an optimized approach to achieve a progressive and systematic reduction in radiological hazards, and a safe and economical final disposal of the decommissioning waste.	final disposal of the waste, the long term safety aspects of final disposal of the waste and the final disposal costs shall also be taken into account.				waste is not in the scope of this document. WM aspects are addressed in Req. 14.
4	1.20	This publication addresses the radiological hazards resulting from decommissioning. Non-radiological hazards, such as industrial hazards or hazards due to chemical waste, can ~~also~~ be significant during decommissioning. Such hazards ~~also~~ require due consideration in the planning and implementation process, in the safety assessments and environmental assessments, and in the estimation of costs and the provision of financial resources for the decommissioning project.	Remove words "also". Non-radiological hazards are very often much more important than the radiological ones in the decommissioning.	X			
5	Requirement 3: Assessment of safety	General comment.	Interdependencies shall be taken into account in the safety assessment. Decommissioning shall be carried out in such a way that it facilitates final disposal of the radioactive waste. Methods and techniques used in decommissioning shall be such that they do not result in waste forms which are difficult to dispose of.			X	We agree with the comment, but this aspect is covered in 8.6.

6	3.3	Delete or edit the last item "*giving interested parties an opportunity to provide comments on the final decommissioning plan and supporting documents before approval based on national requirements*."	Public hearings and involvements are usually part of the environmental impact assessment process. The nuclear regulatory is not necessarily the body that takes care of the environmental impact assessment.			X	See last part of the sentence "*based on national requirements*."
7	3.4	preparing and implementing appropriate safety and security procedures, including emergency plans, if necessary;	Add text "if necessary" to the end of the sentence. Emergency plans are not always needed, if the amount of radioactive waste in the facility is small.			X	We agree that the radiological hazards are reduced, but emergency plan should be in place, even if limited to very few situations (graded approach).
8	4.4	Provisions shall be made, as far as possible, to ensure that experience of the key staff ~~are~~ is collected and retained and that institutional knowledge about the facility is maintained and is accessible.	Keeping old staff can have negative impacts on the decommissioning projects, since the staff is not necessarily motivated for the work. Hence, the operator shall have freedom to choose the best and most motivated staff for the work.		X		"Provisions shall be made to ensure that the institutional knowledge about the facility is obtained and is accessible and, as far as possible, the key staff is retained."
9	5.1	~~The strategy selected could be a combination of the two strategies of immediate dismantling and deferred dismantling.~~	This part can be deleted. It's enough that the strategy (immediate dismantling, deferred dismantling or a combination of these) is justified.	X			

10	Requirement 10: Planning of decommissioning	The operator shall prepare decommissioning plan and maintain it throughout the lifetime of the facility, ~~unless otherwise required by~~ according to the requirements of the regulatory body, in order to show that decommissioning can be accomplished safely to meet the defined end state.	New formulation for the requirement. Decommissioning plan is needed for all facilities, but the content of the plan may vary, depending on the type and complexity of the facility. The requirements for the contents of the plan can be specified by the regulator. In any case a plan is needed.	X			
11	7.5	This initial decommissioning plan shall be required in order to ensure that sufficient funds will be available for decommissioning, to facilitate early planning for minimization of the need for decontamination, to identify categories and to estimate quantities of waste.	"Planning for minimization of decontamination" is obscure.		X		Text of 7.5 is revised to accommodate the comments from several MS.
12	7.6	The initial decommissioning plan shall be updated by the operator and shall be reviewed by the regulatory body periodically~~, at least every five years or~~ as prescribed by the regulatory body;	The regulator shall determine the time interval for updating the plan. For plants with a long operating life and standard operation longer time interval shall be acceptable.			X	There is flexibility (“or as prescribed by the regulatory body”). In addition, “5 years” were accepted in WS-R-5, there is no obvious reason to relax this requirement. However, this point will be re-discussed with WASSC, as several Member
13	7.11	The final decommissioning plan and supporting documents shall include the decommissioning strategy; decommissioning actions; the proposed end state; the description of	A description of the back end cycle i.e. the destiny of the waste shall be included in the plan. Without this information it is		X		

		storage or final disposal of the decommissioning waste and how the operator will demonstrate that the end state has been achieved; the timeframe for decommissioning; and details of the funding for the completion of decommissioning.	not possible to evaluate if the decommissioning is done in an appropriate way.				States raised their concerns. "… how the operator will demonstrate that the end state has been achieved; storage or disposal of the decommissioning waste, the timeframe for decommissioning…"
14	7.17	Delete or edit: *"Interested parties shall be provided with an opportunity to examine the final decommissioning plan and, as appropriate, supporting documents, and to provide comments prior to its approval subject to national requirements."*	Public hearings and involvements are usually part of the environmental impact assessment process. It is not necessary to add such a step to the decommissioning plan update process.			X	There are many aspects of the FDP that are of interest to local communities (safety, social, economic).
15	8.3	On the basis of the final decommissioning plan, decontamination and dismantling techniques shall be used such that the protection and safety of workers and the public is optimized, the environment is protected, ~~and~~ the generation of waste is minimized and there will be no negative impacts on waste disposal and long term safety, as far as reasonably practicable.	Techniques shall be selected in such a way that there are no negative impacts on the final disposal of the waste.			X	We do not mention updates of the FDP here. The RWM is covered in Req. 14

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 1/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	General	DS 450 has improved significantly since the last revision in terms of clarity of requirements and structure of the document. Nevertheless there are some points were more clarification is needed or where there are unnecessary repetition in the text and which are provided in the following rows. "**Funding" should be replaced by "financing**" as funding is only a special way of financing. The document speaks of the "operator", not of the "licensee" – sometimes the licensee is different from the operator. As the Requirement is for facilities and not activities, **the term "licensee" would be more appropriate and should be used in the whole document.** The IAEA glossary could be improved by distinguishing the roles of the operator and licensee which are different in some countries.		X X			
2.	1.2	Aspects of decommissioning typically include planning for decommissioning, conducting decommissioning actions and terminating the authorization. There may be a **limited** period of transition between permanent shutdown1 and the time when authorization to begin decommissioning actions is granted.	The transition period shall be limited to encourage immediate dismantling strategy			X	This is an information statement, not a requirement.
3.	1.2	and terminating the facility's authorization.	Clarification			X	It is obvious it's facility's authorization (otherwise we should

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 2/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
							write - planning for decommissioning of a facility, conducting decommissioning actions at a facility…)
4.	1.3	'Decommissioning actions' are the procedures, processes and work activities (removal of SSCs, decontamination of SSCs…) as described	Clarification To include ideas developed in 1.9			X	Too detailed for an introduction of a high level document.
5.	1.3	as described in the applicable ~~approved final~~ decommissioning plan.	Clarification (decommissioning plan may evolve as decommissioning progresses…)			X	"Applicable" does not improve the clarity
6.	1.4	'Facility' means buildings, and their associated land and equipment, in which radioactive material **and waste** is produced, processed, used, handled or stored on a scale with such a degree of hazard and risk that consideration of protection and safety is required. 'Land' includes the surface, subsurface soil horizons and any surface or subsurface water or aquifers potentially affected by the radioactive material.	Not only radioactive material have to be considered but also waste.			X	The term material covers waste as well. The definition is based on the IAEA Safety Glossary.
7.	1.4	In this document, 'Facility' means buildings, and their associated land and equipment, in which radioactive material was or still is produced, processed, used, handled or stored	To stress that it is not the IAEA safety glossary definition Clarification (to account for past operation).			X	The definition is based on the IAEA Safety Glossary.
8.	1.5	Insert 1.5 in 1.2 : 1.2 Aspect of decommissioning….. authorization. Decommissioning is performed using an optimized approach to achieve a progressive and systematic reduction in radiological hazards.	More logical order as next paragraphs defines words…			X	The intention with a separate paragraph 1.5 is to emphasize the need to ensure safety.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 3/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		Decommissioning is undertaken on the basis of planning and assessment to ensure the protection and safety of workers and the public and protection of the environment. There may be a period of transition between permanent shutdown1 and the time when authorization to begin decommissioning actions is granted.					
9.	1.7	Planning for decommissioning begins at the design stage and includes the collection of information and data relevant to decommissioning to facilitate future decommissioning, selection of a decommissioning strategy, performance of radiological characterization of the facility, preparation of a final decommissioning plan, **cost estimate of the decommissioning,** submission of the plan to the regulatory body for review and approval and any activities for public communication and consultation required by national requirements. Conducting decommissioning actions includes managing the project, implementing the approved final decommissioning plan, managing radioactive waste and non-radioactive waste, conducting of oversight activities by the regulatory body and demonstrating that the facility meets the end state criteria specified in the final decommissioning plan.	Cost estimate can not be separated from a decommissioning project			X	The purpose of Background is to introduce the main concepts. The details on planning objectives are given in Section 7.
10.	1.7	Planning for decommissioning begins at the design stage and continues throughout the lifetime of the facility. It includes the collection of information …	For clarification that planning is a continuous process throughout the whole lifetime of the facility.			X	Continuous planning is covered in 7.6 (updates)

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 4/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
11.	1.8	~~(i.e.~~ especially meeting the end state criteria),	Too restrictive			X	No additional value, "i.e." is less restrictive than "especially".
12.	1.9 bullet list	Start the bullet list with deferred dismantling	Immediate dismantling is defined in contrast with deferred dismantling. See next comment			X	The preferred option is listed first.
13.	1.9 bullet list	- *Immediate dismantling* is the strategy ~~in which the equipment, structures, systems and components of a facility containing radioactive material are removed and/or decontaminated to a level that permits the facility to be released for unrestricted use, or released with restrictions on its future use. In this case,~~ where decommissioning actions begin shortly after the permanent cessation of operations. This strategy implies promptly conducting decommissioning actions and involves the processing of all radioactive material for either storage or disposal.			X		Text modified to accommodate several comments by several Member States. See the revised text.
14.	1.10	Add 1.10 at the end of the bullet dealing with deferred dismantling	Same idea. Enable to have consistency between the topics addressed in the definition of immediate and deferred dismantling	X			
15.	1.17	This publication applies to most types of facilities, including nuclear power plants, research reactors, other nuclear fuel cycle facilities, facilities for the processing and storage of waste that is not from the nuclear fuel cycle, facilities for processing naturally occurring radioactive material (NORM),	Split 1.17 in two paragraphs : one dealing on what is addressed, the other on what is not addressed	X			

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 5/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		and relevant medical facilities, industrial facilities and research facilities. 1.18 This publication ~~It~~ does not apply to radioactive waste disposal facilities or disposal facilities for NORM or for waste from mining and mineral processing. Requirements for the closure of such facilities are established in Ref. [3]. Requirements for the decommissioning of supporting buildings and services of these facilities are established in the present publication, however.					
16.	1.18	Transform the beginning of 1.18 as a footnote to 1.17: * The definition of decommissioning (para. 1.1) makes it clear that decommissioning is concerned with 'facilities', i.e. buildings, including their associated land and equipment. There may be areas of land that have become contaminated as a result of the normal operation of the facility; which would not constitute an incident or an emergency exposure situation. The cleanup of these areas would also be included as part of decommissioning.	Explanation			X	1.17 defines the scope in terms of facilities, while 1.18 defines the scope in terms of activities / actions (decommissioning, remediation, …)
17.	1.18	Merge the remaining part of 1.18 with the paragraph (new 1.18 – see previous comments) explaining what is out of the scope of the publication	To have a single paragraph listing what is not covered by these requirements		X		Old 1.18 is now split in two new paragraphs
18.	1.21	Although security aspects shall be taken into account when developing the decommissioning plan and implementing the decommissioning actions, These Standards do not deal with security	To explicit that there are security aspects in decommissioning. See also 3.3		X		See modified text in the draft.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 6/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		measures. The IAEA issues recommendations on nuclear security in the IAEA Nuclear Security Series.					
19.	1.22	Section 6 establishes the requirements for the ~~funding~~ financing of decommissioning	For clarity it would be more appropriate to use the wording "financing" instead of "funding" as funding is only one possibility for providing the financial resources.	X			
20.	Requirement 1	considered to be an ~~authorized~~ planned exposure situation	"authorized planned exposure" is not used in the BSS	X			
21.	2.3	Compliance with national environmental protection regulations and requirements of the Basic Safety standards [4] addressing protection of the environment shall be maintained during decommissioning and beyond if a facility is released with restrictions on future use.	Clarification	X			
22.	Requirement 2	A graded approach shall be used for all aspects of decommissioning, in determining the scope and level of detail **of the safety analysis related to decommissioning** for any particular facility, consistent with the magnitude of the possible radiation risks arising from the decommissioning	Precision			X	Safety assessment is only one specific point of application of the graded approach and is covered in the GSR Part 4. We want to be more general here with the area of application of the graded approach (not to be limited to the safety assessment only).
23.	Requir	For any particular facility, a graded approach shall	Clarification			X	No additional value

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 7/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
	ement 2	be used for all aspects of decommissioning in determining the scope and level of detail ~~for any particular facility,~~ consistent with the magnitude of the possible radiation risks arising from the decommissioning [4, 5].					
24.	Requir ement 3	Safety shall be assessed for all facilities that are to undergo decommissioning **and for all facilities undergoing decommissioning.**	Assessment of safety during decommissioning is also important	X			
25.	3.1	These requirements apply in establishing the appropriate national infrastructure.	Clarification	X			
26.	Requir ement 4	This framework shall include a clear allocation of responsibilities, provision of independent regulatory functions and requirements for ~~funding~~ financing mechanisms for decommissioning.	See comment for para 1.22	X			
27.	3.2	- ensuring that the necessary scientific and technical expertise remains available for both the operator and for the support of ~~independent~~ regulatory review and other independent national review functions;	Regulator is to be independent according to IAEA requirement….	X			
28.	3.2 (new)	The responsibilities of the government shall include: (…) - **granting authorizations for the decommissioning of facilities, containing the time frame and the main objectives of the decommissioning**	Government has the responsibility to give framework of a specific decommissioning project		X		Bullet 2: add "including decommissioning authorization"
29.	Requir ement 5	The regulatory body shall establish the safety ~~standards and~~ requirements for decommissioning		X			

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 8/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
30.	3.3 1st, 2nd(new), 3th bullet	The responsibilities of the regulatory body shall include: ~~**establishing criteria and the time frame for the commencement of decommissioning;**~~ - **giving opinion to the government on the application for the decommissioning of a facility after assessing the report submitted by the operator;** - establishing **requirements related to the** ~~criteria~~ workers, environment and public protection safety, security **to be applied** for the decommissioning of facilities, including criteria for clearance of material during decommissioning in accordance with national policy and criteria for end states for decommissioning and termination of authorization;	The regulatory body evaluates the final decommissioning plan in accordance with legal and regulatory requirements Necessary precision: the definition of end state criteria may not always remain on the regulatory body: the operator may propose criteria, and then the regulatory body may approve them on a case-by-case basis but in consistence with the requirements it has established.		X	X	The comment is reflecting a specific national situation in France. See the revised text which accommodates several comments by different Member States.
31.	3.3 second bullet point	- establishing criteria for protection and safety, ~~security and~~ radiation protection of the environment for the decommissioning of facilities, including criteria for clearance of material during decommissioning in accordance with national policy and criteria for end states for decommissioning and termination of authorization;	Following para 1.21 security is not addressed in this requirements document. Regarding environmental protection it should again be clarified that radiological environmental protection is meant (see para 1.20)		X		"Security" is deleted, see the revised text.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 9/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
32.	3.3 bullet list	The 3 bullets dealing with the content and the review of the decommissioning plan should be grouped: - identifying the typical content of the decommissioning plans and supporting documents to be submitted to the regulatory body ~~for review or approval~~; - establishing the review process for decommissioning plans and supporting documents ~~(which are prescribed in national requirements);~~ This process shall ~~–~~give~~ing~~ interested parties an opportunity to provide comments on the final decommissioning plan and supporting documents before approval based on national requirements.	Same topic and more logical order		X		See the revised text modified to requests from several countries.
33.	3.3 bullet list	- inspecting and reviewing decommissioning actions and taking enforcement actions in case of non-compliance with national law, regulations, the authorization or licence conditions and safety requirements established by the regulatory body~~derived from the national legal framework~~;	Clarification		X		See the revised text modified to requests from several countries.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 10/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
34.	3.3 3rd bullet	Make this 3rd bullet a separate paragraph: 3.# Depending on the national legal and regulatory framework, the responsibilities of the regulatory body shall include establishing requirements for financial assurance for the funding of decommissioning and for a mechanism to ensure that adequate resources will be available when necessary for safe and timely decommissioning, (in the case where the government has delegated this to the regulatory body);	This bullet is not similar to the others as it is not a definite requirement: whether the regulator as to do it or not depends on national laws….			X	Covered in the last bullet of responsibilities of the Government.
35.	3.3 third bullet point	- establishing requirements for financial assurance for the ~~funding~~ financing of decommissioning and for a mechanism to ensure that adequate resources will be available when necessary for safe and timely decommissioning, in the case where the government has delegated this to the regulatory body;	See comment for para 1.22	X			
36.	3.3 9th bullet)	The responsibilities of the regulatory body shall include: - (…) - **~~Fostering~~ ensuring that operator have a safety culture in order to encourage a questioning and learning attitude towards safety and to discourage complacency[4,5].**	The role of the regulatory body is not to foster a daily safety culture		X		"Fostering" replaced by "promoting", see the revised text.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 11/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
37.	3.3, 10th bullet	The responsibilities of the regulatory body shall include: - (…) - establishing requirements and mechanisms for the collection and retention of records and reports relevant to decommissioning, **and to keep memory of a nuclear activity after the facility has been released from all the regulatory controls**;	Necessary precision (linked with comment n°19 below)			X	Retention of records and reports continues after termination of authorization, details in the guide.
38.	Requirement 6	The operator **shall consider decommissioning since the design of the facility, and where appropriate since siting**, implement planning for decommissioning	To reinforce taking account of decommissioning in the design. Taking decommissioning into account when choosing the site may not be relevant for all facilities….			X	See first bullet of 3.4
39.	Requirement 6	shall carry out the decommissioning actions in compliance with the authorization and with ~~safety standards and~~ **regulatory** requirements derived from the national legal framework.	Compliance with standards may not be mandatory. Compliance with regulatory requirement is…		X		"… and with the national legal and regulatory framework".

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 12/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
40.	3.4 5th and 6th bullet	The responsibilities of the operator shall include: - (…) - notifying **the government and informing** the regulatory body prior to permanent shutdown of the facility; - submitting a final decommissioning plan and supporting documents **including end state criteria in consistence with national regulations or requirements** for review and approval by the regulatory body, in order to obtain authorization for decommissioning;	Precision to clarify responsibilities			X	First part specific to France; Second part covered in section 7 Planning (see 7.11)
41.	3.4 8th bullet	- identifying a destination for all waste arising from decommissioning actions and for any residual waste arising from the operation of the facility and processing the waste appropriately;	Following para 1.19 waste from operation is not part of this requirements document.		X		See the modified text which accommodates several comments by different Member States.
42.	3.4 9th bullet	- ensuring that the facility is maintained in a safe configuration ~~during transition~~ between permanently shutting down of operations at the facility and until the approval of the final decommissioning plan;	For clarification, as transition is not explained until now (firstly explained in para 7.8). Insertion as in para 7.8.			X	See 1.2
43.	3.4 12th bullet	preparing and implementing appropriate safety ~~and security~~ procedures, including emergency plans;	Following para 1.21 security is not addressed in this requirements standard.	X			
44.	3.4 bullet list	- managing the decommissioning project and performing or having performed decommissioning actions. When actions are performed by contractors, the operator shall ensure contractors oversight;	Contractors are often involved See 3.4			X	We agree, but it is covered in 4.3.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 13/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
45.	4.2	An integrated system for the management and implementation of decommissioning shall be established as part of the operator's organization with the prime ~~responsibility~~ goal of ensuring that decommissioning will be conducted safely.	Clarification	X			
46.	4.3	The prime responsibility for safety shall remain with the operator. ~~It shall be permissible to delegate~~ If the performance of specific tasks involves ~~to~~ contractors~~,~~ ~~and~~ the operator ~~management for decommissioning~~ shall ensure that the work of contractors is appropriately controlled and that it shall be conducted safely. The integrated management system shall support these goals.	Clarification		X		See the modified text which accommodates several comments by different Member States.
47.	4.3	The prime responsibility for safety shall remain with the operator. It ~~**shall is**~~ be permissible to delegate the performance of specific tasks to contractors and the management for decommissioning shall ensure that the work of contractors is appropriately controlled and that it shall be conducted safely. If the operator changes during the lifetime of the facility, procedures shall be put into place to ensure the transfer of responsibility for decommissioning to the new operator.	The delegation of an activity to a contractor is not a requirement	X			
48.	4.3	Transfer the last sentence of 4.3 in 3.4 "If the operator changes during the lifetime of the facility, procedures shall be put into place to ensure the transfer of responsibility for decommissioning to the new operator."	More logical place	X			Inserted in 3.4 as a second part of the third bullet (after integrated management system [7]

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 14/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
49.	4.5	All individuals responsible for performing decommissioning actions shall have the responsibility to inform the decommissioning management of any concerns about safety. The decommissioning management also shall ensure that appropriate authority for suspending decommissioning actions is granted to ~~such individuals~~ responsible persons.	For clarification – only persons responsible for decommissioning actions shall have the power to suspend work, not each worker performing decommissioning actions		X		See the modified text which accommodates several comments by different Member States.
50.	4.5	All individuals responsible for performing decommissioning actions shall demonstrate their safety culture. In particular, they shall have the responsibility to inform the decommissioning management of any concerns about safety.	Should be broaden to safety culture…			X	Addressed in 3.4 bullet 3
51.	Requirement 8	~~The operator shall select a decommissioning strategy, which will form the basis for the planning for decommissioning. The strategy shall be consistent with national policy on decommissioning and waste management.~~ **The preferred decommissioning strategy shall be immediate dismantling. The operator shall demonstrate that, for the strategy selected, the facility will be maintained in a safe configuration at all times and will be decommissioned, and that no undue burdens will be imposed on future generations.**	The requirement 8, as it is written, is a precision Merge a part of 5.2 and 5.3. These paragraphs have a stronger meaning and have to be placed as the requirement 8.			X	There is no hierarchy (main requirement, sub-requirements). All the "shall" statements are requirements. 5.2 is moved before 5.1.
52.	5.1	The selection of a decommissioning strategy shall be justified by the operator. ~~The strategy selected~~	Proposed deletion as it is a repetition of 1.9.	X			

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 15/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		~~could be a combination of the two strategies of immediate dismantling and deferred dismantling.~~					
53.	5.2	Merge 5.2 and 5.1 : 5.1. The selection of a decommissioning strategy shall be justified by the operator. ~~The strategy selected could be a combination of the two strategies of immediate dismantling and deferred dismantling.~~ ~~5.2.~~ The preferred decommissioning strategy shall be immediate dismantling unless the operator justify this strategy is not practicable. ~~However, there may be situations in which immediate dismantling is not a practicable strategy when all relevant factors are considered.~~	Same topic Clarification		X		See the resolution of the comment 51.
54.	5.2	~~The preferred decommissioning strategy shall be immediate dismantling.~~ There may be situations in which immediate dismantling is not a practicable strategy when all relevant factors are considered.	Keep a part of 5.2			X	See the resolution of the comment 51.
55.	5.3	The operator shall select a decommissioning strategy, which will form the basis for the planning for decommissioning. The strategy shall be consistent with national policy on decommissioning and waste management.	The text of requirement 8 can replace 5.3			X	See the resolution of the comment 51.
56.	5.4	If the shutdown of a facility is sudden ~~(e.g. as a consequence of a severe accident),~~ the decommissioning strategy shall be reviewed on the basis of the situation that initiated the sudden shutdown to determine whether revision of the strategy is required.	The "sudden" shutdown may not be related to an accident at the facility. It may be a political decision or a decision based on economic factors….		X		See the revised text modified to requests from several countries

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COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 16/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		If the shutdown is motivated by an accident, The facility shall be brought to a safe configuration before the ~~an approved final~~ decommissioning plan is implemented.	Clarification				
57.	Requirement 9	[…] These provisions shall include establishing a mechanism to provide and ensure adequate financial resources for safe and timely decommissioning **subject to review by the government**.	Useful precision			X	Not the case in all the countries. The government shall establish a mechanism for financing decommissioning (see 3.2 last bullet).
58.		If comment 22 is not accepted, please change the following: **6. ~~Funding~~ Financing** **Requirement 9: ~~Funding~~ Financing of decommissioning**	See comment for para 1.22	X			
59.	6.1	Adequate financial resources to cover the costs associated with safe decommissioning, including management of the resulting waste, shall be available when needed, ~~even in the event of premature shutdown of the facility (e.g. as a consequence of a severe accident).~~	To foresee the financial resources for decommissioning after a severe accident is not reasonable possible.	X			
60.	Chapter 6 and Requirement 9	6.3 If financial assurance for the decommissioning of an existing facility has not yet been obtained, suitable ~~funding~~ financing provision shall be put in place as soon as possible 6.4 If the decommissioned facility is released with restrictions on its future use, financial assurance		X			

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 17/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		shall ensure that ~~funding~~ financing covers the facility and monitoring, surveillance and control of the facility throughout the necessary time period.					
61.	Requirement 10	The operator shall prepare decommissioning plan and maintain it throughout the lifetime of the facility, ~~unless otherwise required by the regulatory body~~, in order to show that decommissioning can be accomplished safely to meet the defined end state.	If the requirement can be invalidated by the regulatory body, it should not be a requirement….		X		See the modified text which accommodates several comments by different Member States (Finland).
62.	7.1	For new facilities, consideration of decommissioning shall begin early in design stage, and where necessary in the siting stage, and shall continue through to termination of the authorization.	Taking decommissioning into account when choosing the site may not be relevant for all facilities….		X		See modified text. Paragraphs 7.1 to 7.8 reordered based on the comments by several Member States to follow more logical order.
63.	7.2	For existing facilities where there ~~is~~ may be no initial decommissioning plan,	"Recent" new facilities have decommissioning plan…			X	For existing facilities it is known if there is an IDP (yes/no)
64.	7.2	a suitable plan for decommissioning shall be prepared as soon as possible ~~once the regulatory body has provided requirements and guidance,~~ and the plan shall be periodically reviewed and updated.	The issuance of regulatory requirements/guidance should not be a prerequisite. Current wording could generate inconsistency between requirement (e.g. 7.10…)	X			
65.	7.3	If permanent shutdown occurs before a final decommissioning plan is prepared, such plan should be established as soon as possible and adequate arrangements shall be made to ensure the safety of the facility until a final decommissioning plan can be implemented.	It is not enough to ensure plant safety while waiting, it should be also require to prepare the decommissioning plan	X			
66.	7.5	This initial decommissioning plan shall be	See comment for para 1.22	X			

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COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 18/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		required in order to ensure that sufficient ~~funds~~ financial resources will be available for decommissioning, to facilitate early planning for minimization of decontamination, to identify categories and to estimate quantities of waste.					
67.	7.6	at least every five years ~~or as~~ unless otherwise prescribed by the regulatory body	Make the requirement more straightforward ~~(see also 7.10)~~	X			
68.	7.7	~~In this way,~~ the design of and modifications to the facility	Superfluous	X			
69.	7.8 Requirement 11	Between the permanent shutting down of operations at the facility and approval of the final decommissioning plan, there may be a **limited** period of transition. During this period, some preparatory decommissioning actions may be performed subject to authorization.	Cf. comment n°1.			X	There is no unlimited / infinite transition
70.	7.8	Transform "During this period, some preparatory decommissioning actions may be performed subject to authorization." into a footnote	Information only See also next comment			X	This is an important point we want to keep in the text; "may" → "can"
71.	7.9	During the transition, operation of the facility shall be subject to authorization (e.g. continuation of the operating licence).	For clarification, that a new authorization might not be required		X		See the revised text modified to requests from several countries
72.	7.9	Merge 7.9 with 7.8	Same topic (transition phase)		X		See modified text based on several comments.

TITLE: Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 19/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
73.	7.10	The operator shall **notify the government** and inform the regulatory body prior to permanently shutting down the facility. If a facility is permanently shut down and/or is no longer used for its intended purpose, a final decommissioning plan shall be submitted to the regulatory body for approval within two years of the cessation of authorized activities, unless an alternative schedule is prescribed by the regulatory body.	In link with §3.4 5th bullet			X	It is specific to France (the comment on 3.4 was rejected as well). Discussion on this issue to come in the guide.
74.	7.11	The final decommissioning plan and supporting documents shall include the decommissioning strategy; decommissioning actions; the proposed end state and how the operator will demonstrate that the end state has been achieved; the timeframe for decommissioning; and details of the ~~funding~~ financing for the completion of decommissioning.	See comment for para 1.22	X			
75.	7.11	The final decommissioning plan and supporting documents shall include the decommissioning strategy; decommissioning actions; **the resulting waste management strategy;** the proposed end state and how the operator will demonstrate that the end state has been achieved; the timeframe for decommissioning; and details of the funding for the completion of decommissioning.	The waste management strategy is a part of decommissioning project and has to be considered in the final decommissioning plan		X		See the revised text modified to requests from several countries.
76.	7.11	Details of the ~~funding~~ financing for the completion of decommissioning		X			
77.	7.14	Updates of the final decommissioning plan by the operator shall be subject to review and, if warranted, approval by the regulatory body.	To allow some flexibility (depend on the importance of the updates)	X			

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COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 20/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
78.	7.16	The availability of adequate ~~funding~~ financing for the maintenance of the facility during the deferral period and for subsequent decontamination and/or dismantlement shall be demonstrated.	See comment for para 1.22		X		"adequate financial resources" in the new text
79.	7.16	The availability of adequate funding for ensuring the safety (surveillance, ~~the~~ maintenance…) of the facility during the deferral period and for subsequent decontamination and/or dismantlement shall be demonstrated.	To broaden the scope (maintenance is too restrictive…)		X		See the revised text modified to requests from several countries.
80.	8.1	Delete 8.1	Duplicates requirement 12			X	Similar, but not the same. The FDP shall be approved by the RB prior to its implementation.
81.	8.2	In the case of deferred dismantling, the operator shall ensure that the facility has been placed, is and will be maintained	Clarification		X		In the case of deferred dismantling, the licensee shall ensure that the facility is maintained in a safe configuration… (at all times)
82.	8.2	An adequate programme for maintenance, monitoring and surveillance~~, which shall be subject to the approval of the~~ consistent with the regulatory requirements ~~body~~, shall be developed and implemented to ensure safety during the period of deferment.	To allow flexibility on what is approved by the regulator Implementation is important			X	This programme is usually summarized in the FDP, so is subject to approval. This summary may contain links to existing maintenance procedures from the operational period (these details are for

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COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 21/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
							the guides).
83.	8.3	~~On the basis of~~ Consistent with the final decommissioning plan,		X			
84.	8.3	the progressive dismantling or removal of ~~safety systems~~ systems, structures and components have the potential for creating new hazards.	Safety systems : too restrictive		X		See revised text 8.3
85.	8.3	and exposures of workers shall be kept as low as reasonably achievable, within established dose limits and dose constraints shall not be exceeded	ALARA should be explicit to have consistency with BSS		X		See revised text 8.3
86.	8.3	The implications for safety of such actions shall be assessed and managed so that the hazards are prevented as far as reasonably practicable and the consequences of these hazards are mitigated,	Mitigation is not enough : prevention is needed		X		See revised text 8.3
87.	8.3 Line 3	On the basis of the final decommissioning plan, decontamination and dismantling techniques shall be used such that the protection and safety of workers and the public is optimized, the environment is protected and the generation of waste is minimized, as far as reasonably practicable. **Best Available Techniques shall be used as far as possible.**	Useful precision.			X	It is difficult to define the best technique. The proven, safe and economical techniques should be used. Selection of techniques is elaborated in the guide.
88.	8.3 bis (new)	**During decommissioning, the operator shall keep updated the list of structures, systems and components (SSC) important for safety. SSC important for safety can be progressively declassified as the decommissioning progresses, provided that the inspection and maintenance program is updated.**	Useful precision				**This proposal has not been seen by the Safety Standards committees and by the other Member States. Will be presented to WASSC in July 2013.**

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COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 22/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
89.	8.3. ter (new)	**During decommissioning, safety of the facility shall be reassessed by the operator, in compliance with the national regulation.**	Necessary precision: taking into account of the duration of decommissioning projects, which can extend on several years and sometimes decades, periodic safety assessment is required not only for the operation phase, but also during the decommissioning phase.			X	Not explicitly mentioned in this publication, but covered by GSR Part 4 (here referenced in Requirement 3, para 2.6)
90.	8.4	in accordance with the final decommissioning plan and the authorization and with ~~other~~ regulatory requirements ~~derived from the national legal framework~~ for which the regulatory body has responsibility for oversight	Clarification	X			
91.	8.9 (new)	**The operator ensures waste management traceability for the waste produced in the facility.** **The operator keeps a detailed and up-to-date account of the waste produced and stored in the facility, specifying the nature, characteristics, location and producer of the waste, the identified disposal processes and the quantities present and removed.**	Useful precision			X	This requirement is not specific to decommissioning waste, but is valid for all the RAW. Management of decommissioning waste shall follow all the general WM requirements.
92.	9.4 Requirement 15 § 9.4 bis (new)	**A system shall be established to ensure that memory of the past existence of the facility is kept after it has been released from all the regulatory controls. Future owners of the site shall be informed.**	Necessary precision: it is essential to ensure memory of the facility will be kept in order to allow an intervention of public power (government or regulatory body) in case of residual risk discovered after				**This proposal has not been seen by the Safety Standards committees and by the other Member States. It is relevant for fuel cycle**

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COMMENTS BY REVIEWER Country/Organization: FRANCE Date: 05/02/2013 Pages 23/23				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			the termination of authorization				**facilities and NPPs, but not for thousands of small facilities. Will be presented to WASSC in July 2013.**
93.	§ 9.5	If radioactive waste is stored on the site after decommissioning has been completed, a revised or new, separate authorization, including requirements for decommissioning**~~, shall be issued for~~ of** the storage facility **and provisions for final disposal of the waste shall be issued**, if appropriate.	Necessary precision: an indefinite storage, without any final disposal route for the waste generated during decommissioning would not be acceptable.			X	Requirements for decommissioning include already a requirements related to management of generated waste, including disposal.

Draft Safety Requirements DS450 "Decommissioning of Facilities"
(Version dated 11 September 2012)

	COMMENTS BY REVIEWER Reviewer: **Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)** (with comments of GRS, BfS) Page 1 of 11 Country/Organization: **Germany** Date: 2013-01-11				RESOLUTION			
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
2	1	1.7	1st sentence: "Planning for decommissioning begins at the ~~design~~ siting stage and includes the collection of information and data relevant to decommissioning …"	Consistency with the statements in 1.1 (last sentence) and 1.16.			X	Decommissioning considerations start at siting phase, while the planning starts with the facility design.
3	2	1.7	Last sentence: "Conducting decommissioning actions includes … conducting ~~of~~ oversight activities by the regulatory body and demonstrating that the facility meets the end state criteria specified in the final decommissioning plan."	Editorial.	X			
2	3	1.9	1st bullet point: "Immediate dismantling is the strategy in which ~~the equipment, structures, systems and components of a facility containing radioactive material are removed and/or decontaminated to a level that permits the facility to be released for unrestricted use, or released with restrictions on its future use. In this case,~~ decommissioning actions begin shortly after the permanent ~~cessation of operations~~ shutdown. This means that the equipment, structures, systems and components of a facility containing radioac-	Modify the arrangement of text to emphasize more clearly the difference between the two possible decommissioning strategies. The deleted text in the first sentence is not specific for immediate dismantling but, in principle, also holds for deferred dismantling. Replace 'cessation of operation' by 'shutdown' to be consistent with the terminology introduced in para	X			

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

			tive material are removed and/or decontaminated to a level that permits the facility to be released for unrestricted use, or released with restrictions on its future use. This strategy ~~implies promptly conducting decommissioning actions and~~ involves the processing of radioactive material for either storage or disposal."	1.2 (see footnote No. 1). The deleted text in the last sentence is nearly a repetition of the text in the first sentence and is therefore redundant.				
2	4	1.9	2nd bullet point: "… is either processed or placed in such a condition that it ~~can be put in safe storage~~ is safely separated for a longer period from the environment and the facility maintained until it is subsequently decontaminated and/or dismantled. This strategy allows for the processing of some radioactive material and its removal from the facility."	Modify wording to avoid a circular definition. Last sentence: We recommend to transfer the text from para 1.10 to para 1.9 in which the decommissioning strategies are described in more detail. In contrast to immedi-ate dismantling, where decommissioning ac-tions begin shortly after the permanent cessation of operations, the pro-posed extension clari-fies, that dismantling will be delayed for a longer period.		X		Accepted : 1.10 to be added; Rejected: "safe storage" remains.
2	5	1.10	Delete this para.	See our comment to para 1.9.	X			
3	6	1.16	"This publication ~~establishes the safety requirements for~~ covers all aspects of decommissioning …"	Modify wording to avoid repetition with text in para 1.15.			X	1.15 is the objective, while 1.16 defines the scope in terms of facility life-time.
2	7	1.17	1st sentence:	It should be clearly speci-	X			

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

			"This publication applies to ~~most types of facilities, including~~ nuclear power plants, research reactors, other nuclear fuel cycle facilities,…"	fied to which facilities the Safety Standard GSR Part 6 applies. If the list of facilities mentioned in that sentence is not comprehensive, it should be completed.				
2	8	1.18	4th sentence: "This publication does not address the remediation of areas contaminated by residual radioactive material arising from past activities that … (2) were subject to regulatory control but not in accordance with the requirements of the Basic S~~s~~afety S~~s~~tandards [4]."	Clarification. It should be clearly specified which safety standards are meant in this context. The sentence has been adopted from GSR Part 3, para 5.1.		X		See the revised text modified to requests from several countries (Australia).
3	9	1.21	~~These Standards~~ This publication does not deal with security measures.	Wording adapted to 1.16, 1.17 and 1.20.	X			
3	10	1.22	Last sentence: "Section 9 establishes the requirements for determining when decommissioning has been completed, including the requirements for surveys to demonstrate the completion of decommissioning actions and the termination of authorization."	Wording.	X			
1	11	3.2	General note to the 1st bullet point ("establishing a national policy for decommissioning and for the management of the resulting radioactive waste"): With respect to the contents of a national policy for decommissioning, further clarification or definition is required. Therefore, this bullet point should be substantiated with some explanatory information. Alternatively, a new para containing such information should be included after para 3.2.	Defining a national policy on decommissioning is essential because the decommissioning strategy selected by the operator shall be consistent with that policy (see Requirement 8). With regard to the contents of a national policy and corresponding strategies for radioactive waste management, the Safety Standard GSR Part 5 provides a good			X	Already covered in general terms, details in the guides.

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

				example, see Requirement 2 (“National policy and strategy for radioactive waste management”) with underlying paras 3.5 and 3.6. Analogously to GSR Part 5, a clear distinction between the terms ‘national policy’ and ‘national strategy’ is also recommended in the context of decommissioning. Para 3.5 of GSR Part 5 states: “The national policy on radioactive waste management has to set out the preferred options for radioactive waste management. It has to reflect national priorities and available resources and has to be based on knowledge of the waste to be managed (e.g. knowledge of the inventory and of waste streams) now and in the future. It has to assign responsibilities for various aspects of radioactive waste management, including regulatory overview.” Para 3.6 of GSR Part 5 states: “The national strategy for radioactive waste management has to outline arrangements for ensuring the implementation of the				

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

				national policy. It has to provide for the coordination of responsibilities. It has to be compatible with other related strategies such as strategies for nuclear safety and for radiation protection."				
2	12	3.3	General note: The items for the responsibilities of the regulatory body should be rearranged to follow a logical order. Proposal for new sequence of items: 1., 2., 3., 4., 6., 5., 7., 13., 8., 9., 10., 11., 12.	For consistency.	X			
2	13	3.3	2nd bullet point: "establishing criteria for protection and safety <u>of the workers and the public</u>~~, security~~ and protection of the environment for the decommissioning of facilities …"	The addressees should be added for clarification. Security is out of the scope of the document (compare with para 1.21) and should be deleted here.		X		See the revised text modified to requests from several countries (ENIIS).
2	14	3.3 / 3.4	Delete ninth bullet point under 3.3 "- fostering a safety culture …", but keep third bullet point under 3.4.	Fostering of safety culture is the main responsibility of the operator.		X		"Fostering" replaced by "promoting".
1	15	3.3	Add new last bullet point: "<u>establishing requirements and measures if a facility is released with restrictions on future use.</u>"	The possibility that a facility is released with restrictions on future use is expressed several times in the document and should be addressed here as well.		X		"<u>establishing requirements and criteria for termination of authorization, especially if a facility is released with restrictions on future use.</u>" (to accommodate the US comment)
2	16	Section 3, Requirement 6	2nd sentence: "The operator shall be responsible for all aspects of <u>protection and</u> safety <u>of the</u>	The addressees should be added for clarification.		X		"Safety, radiation and environmental protection

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

			workers and the public and protection of the environmental during decommissioning."					during decommissioning" – See the revised text modified to requests from several countries.
2	17	3.4	11th bullet point: "preparing and implementing appropriate safety and security procedures, including emergency plans;"	Security is out of the scope of the document (compare with para 1.21) and should be deleted here.	X			
1	18	3.4	Add new bullet point: "ensuring that requirements and measures are met if a facility is released with restrictions on future use."	The possibility that a facility is released with restrictions on future use is expressed several times in the document and should be addressed here as well.			X	Covered by bullet 14.
3	19	Section 4, Requirement 7	"An integrated management system shall be applied to all aspects of decommissioning [5]."	The citation of references should not be included in the requirements itself. Instead, we recommend to cite Ref. [5] at the end of para 4.1 since the second sentence of this para has been adopted from GS-R-3, para 1.1.	X			
2	20	4.1	2nd sentence: "These goals shall include safety, health, environment, security, quality and economic elements."	Security is out of the scope of the document (compare with para 1.21) and should be deleted here.	X			
3	21	4.3	2nd sentence: "… the management for decommissioning shall ensure that the work of contractors is appropriately controlled and that it is shall be conducted safely."	Modify wording to avoid doubled 'shall'.	X			See the revised text modified to requests from several countries (Cuba).
2	22	Section 5, Requirement 8	2nd sentence: "The strategy shall be consistent with national policy on decommissioning and	Consistency with the statement in para 3.2 (1st bullet point).	X			

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

			radioactive waste management."					
2	23	5.1	"The selection of a decommissioning strategy shall be justified by the operator. ~~The strategy selected could be a combination of the two strategies of immediate dismantling and deferred dismantling.~~"	The second sentence is dispensable. All possible decommissioning strategies are defined in para 1.9, which also addresses the combination of immediate dismantling and deferred dismantling.	X			
2	24	5.4	1st sentence: "If the permanent shutdown of a facility is sudden (e.g. as a consequence of a severe accident, a political decision in the Member State or an economic decision by the operator), the decommissioning strategy shall be reviewed …"	Consistency with the terminology introduced in para 1.2 (see footnote No. 1). Referring to 'shutdown' as a consequence of a severe accident as the only example seems to be incomplete. Sudden shutdown can also be caused by political or economic decisions where this document would apply in full scope.		X		See the revised text modified to requests from several countries (France).
2	25	6.1	"Adequate financial resources to cover the costs associated with safe decommissioning, including management of the resulting radioactive waste, shall be available when needed.~~, even in~~ In the event of premature shutdown of the facility (e.g. as a consequence of a severe accident, a political decision in the Member State or an economic decision by the operator), the provisions shall be accessible."	Two aspects are addressed here. They should be outlined in two sentences for clarification. In the extreme case of a severe accident shortly after commencing of operation, the provisions cannot be adequate to cover the costs for a safe decommissioning and waste management. With respect to the possible reasons of a sudden shutdown, see also our comment to para 5.4. To ensure consistency with the statements in paras 3.2			X	There should be an integral cost estimate for decommissioning of a facility, which includes dismantling of all the systems (clean, contaminated) and management of all the waste (conventional, chemically hazardous, radioactive), and also includes cost of

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

				and 3.4 (4th bullet point in each case), the term 'radio-active' has been added.				protection against chemicals, radio-activity, industrial hazards. Several MSs proposed deletion of the text in the brackets.
3	26	Section 7, Requirement 10	"The operator shall prepare a decommissioning plan and maintain it throughout the lifetime of the facility …"	Editorial.	X			
2	27	Section 7, Requirement 10	General note: The paras dealing with planning of decommissioning should be rearranged to follow a logical order. Proposal for new sequence of paras: 7.1, 7.4, 7.5, 7.6, 7.2, 7.7, 7.3, 7.8, 7.9.	For consistency.	X			
3	28	7.6.	2nd sentence: "The initial decommissioning plan shall be updated as necessary in the light of operational experiences gained …"	Wording.	X			
1	29	7.8	"Between the permanent ~~shutting down~~ shutdown of operations at the facility and approval of the final decommissioning plan, there may be a period of transition. The principal objectives of this period are to reduce hazards associated with the facility and to lower costs for operations and maintenance. During ~~this~~ the transition period, some preparatory decommissioning actions may be performed subject to authorization (e.g. de-activation of equipment that will not be required to support the decommissioning stage, removal of nuclear material from the facility, treatment of operational waste, decontamination of equipment,	1st sentence: Consistency with the terminology introduced in para 1.2 (see footnote No. 1). 2nd sentence: The main objectives of the transition period should be pointed out explicitly. 3rd sentence: To be more specific, some examples for typical preparatory decommissioning actions should be provided here.	X	X	X	See the revised text modified to requests from several countries To be elaborated in the guide.

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

			taking measures to prevent the spread of contamination)."					
3	30	7.9	1st sentence: "During the transition period and before the final decommissioning plan has been approved, the facility is considered an operating facility ~~operation of the facility.~~"	This proposed wording clarifies the duration of the transition period. Furthermore the old wording could be misunderstood in a way that transition would need an own authorization.		X		See the definition of transition; it already says it is a period between the final shutdown and the approval of the FDP. See the revised text modified to requests from several countries.
2	31	Section 7, Requirement 11	General note: The paras dealing with the final decommissioning plan should be rearranged to follow a logical order. Proposal for new sequence of paras: 7.10, 7.11, 7.16, 7.17, 7.12, 7.13, 7.14, 7.15.	For consistency. Paras 7.12 to 7.15 address updates of the final decommissioning plan and should be placed at the end.		X		7.14 moved, all others cover aspects related to the FDP (some aspects also valid for updates)
2	32	7.11	"The final decommissioning plan and supporting documents shall include the decommissioning strategy; kind and sequence of decommissioning actions; the proposed end state …"	Clarification and consistency with para 7.12 which allows that decommissioning actions are divided into several phases.		X		"…the schedule and sequence of decommissioning actions…"
3	33	7.12	1st sentence: "Large and complex decommissioning projects may benefit from a division ~~having decommissioning actions divided~~ into several decommissioning phases."	Wording.			X	No improved clarity.
2	34	8.6	1st sentence: "Disposal shall be the preferred management option for radioactive waste arising from operational activities that remains at the facility and radioactive waste that is generated during decommissioning."	Consistency with the wording used in Requirement 14.	X			

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

3	35	8.8	"… such material shall be removed and transported to another authorized facility (e.g. for interim storage) in compliance with the applicable <u>transport</u> regulations <u>[10]</u>; or otherwise the approved final decommissioning plan shall address the management of these materials ~~[10]~~."	Appropriate placement of the reference to the Safety Requirements SSR-6.		X		See the revised text modified to requests from several countries (Cuba)
1	36	8.9	Add new para 8.9 with the following text: "<u>The concept of clearance [4, 12] shall be applicable for radioactive material resulting from decommissioning activities</u>"	Disposal, although considered to be the preferred management option, does not preclude the clearance of materials that meet the relevant criteria. The Safety Guide RS-G-1.7 has been established to cover this issue and is proposed here as Ref. [12]. Alternative management options for radioactive waste arising from decommissioning should also be applied, to the extent practicable, to reduce the volume of radioactive waste to be disposed of. Therefore, such options should be addressed as well in this Safety Standard (e.g. clearance of materials from regulatory control, reuse of materials, etc.), providing a link to the Safety Requirements GSR Part 3. This is in line with the 2nd bullet point of para 3.3 which requires that the regulatory body establishes criteria for clearance of material during			X	Clearance is considered to be a good waste minimization practice, but is not mandatory.

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

				decommissioning in accordance with national policy.				
2	37	9.2	~~The facility shall be released~~ The regulatory body shall decide on the release from regulatory control once the operator …	As termination of authorization involves the release of the site (see 1.8), better use similar wording as it is used in connection with "termination of authorization".			X	See second sentence of 9.2
2	38	9.3	1st sentence: "… shall be maintained to ensure protection and safety of the workers and the public and protection of the environment."	The addressees should be added for clarification.		X		"..to ensure safety, radiation and environmental protection"
3	39	List of References	General note: The references should be arranged according to the order of their citation in the document. This means that the Safety Guide WS-G-3.1 should be cited in para 1.18 as Ref. [5] instead of Ref. [11]. Consequently, Ref. [5] – [10] have to be rearranged accordingly throughout the document.	For consistency.	X			
3	40	Ref. [7]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Governmental, Legal and Regulatory Framework for Safety ~~Part 1~~, IAEA Safety Standards Series No. GSR Part 1, IAEA, Vienna (2010)."	Correct title of the Safety Requirements GSR Part 1.	X			
3	41	Ref. [10]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Regulations for the Safe Transport of Radioactive Material, 2012 Edition, IAEA Safety Standards Series No. SSR-6, IAEA, Vienna (2012)."	Complete title of the Safety Requirements SSR-6.	X			
3	42	Ref. [11]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Remediation Process for Areas Affected by Past Activities and	WS-G-3.1 is currently under revision and will be superseded by DS468		X		Will be removed from the list of references

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

			Accidents, IAEA Safety Standards Series No. WS-G-3.1, IAEA, Vienna (2007) (under revision)."	"Remediation Process for Areas with Residual Radioactive Material". Compare with Ref. [8] which explicitly mentions the revision of the Safety Requirements GS-R-2.				(guides are not cited in the requirements)
2	43	Ref. [12]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Application of the Concepts of Exclusion, Exemption and Clearance, IAEA Safety Standards Series No. RS-G-1.7, IAEA, Vienna (2004)."	See our comment to proposed para 8.9.			X	Guide, see the resolution above.
3	44	List of Contributors	General note: Either the abbreviations of all contributors' institutions should be designated or '(RWMC)' should be deleted in the last contributor's affiliation.	For consistency.	X			
3	45	General	Please use uniform spelling in the whole document: either 'time frame' (para 3.3) or 'timeframe' (para 7.11).	Harmonization is required.	X			

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

Decommissioning of facilities

COMMENTS BY REVIEWER Reviewer: Mr. László Koblinger Page 1 of 1 Country/organization: Hungary/Hungarian Atomic Energy Authority Date: 2013/01/31				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	3.3 line 3	establishing criteria for protection and safety, security and ~~protection~~ of the environment for the decommissioning of facilities	'protection was redundantly mentioned twice		X		See the revised text modified to requests from several countries (ENIIS)
2.	9.3 line 2	to ensure ~~protection and~~ safety and protection of the environment			X		"…to ensure safety, radiation and environmental protection"

بسم الله الرحمن الرحيم

Permanent Mission of the Republic of Iraq Vienna

ممثلية جمهورية العراق
نوێنەرایەتی کۆماری عێراق
فيينا

No: 3/1/3

The Permanent Mission of the Republic of Iraq to the United Nations and International Organizations in Vienna presents its compliments to the Secretariat of the International Atomic Energy Agency (IAEA) and with reference to note verbal no. J5.03.1 dated 2012-09-18, has the honor to attach herewith the remarks and proposals on the Draft Safety Standers from the Ministry of Science and Technology of Republic of Iraq concerning the Safety Requirements for Decommissioning DS450.

The Permanent Mission of the Republic of Iraq avails itself of this opportunity to renew to the IAEA the assurances of its highest consideration.

2013-02-06

Enclosures:-

- Forms

THE PERMANENT MISSION OF THE REPUBLIC OF IRAQ

To - International Atomic Energy Agency/ Vienna.

A-1010 Wien, Johannesgasse 26 Tel.: +431/7138195 Fax: +431/7138208 email:office@iraqembassy.at

COMMENTS BY REVIEWER Page 1 of 2 Country/Organization: Iraq/Ministry of Science and Technology/Radiation and Nuclear Safety Directorate				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	2.3/24	The relevant discharge limits to the environment shall be applied during decommissioning. Monitoring of gaseous, liquid and solid discharges shall be conducted during decommissioning to verify compliance with environmental protection standards.	The Environmental protection measures to be applied during decommissioning are not clearly defined.				
2	2.4/4	Decommissioning shall be started for heavily contaminated systems, structures and components to achieve a progressive and systematic reduction in radiological hazards.	The graded approach is not clearly defined.				
3	3.3/16	Establishing regulations governing decommissioning of nuclear facilities and management of produced radioactive waste.	This is one of the most important roles of the regulatory body.				

Country/Organization: Iraq/Ministry of Science and Technology/Radiation and Nuclear Safety Directorate

COMMENTS BY REVIEWER				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
4	4.3/14	If specific decommissioning tasks are delegated to contractors, then the operator and the regulatory body are responsible for ensuring that the contractors have adequate skill, expertise and training in the field of radiological work.	The qualifications of the contractors involved in the decommissioning project needs to be clearly defined.				

Iraq comment on 2.3: Rejected - such a level of details is not adequate for a requirement publication. See the revised text modified to requests from several countries (France)

Comment on 2.4: Rejected - Proposed additional text is too prescriptive.

Comment on 3.3: Rejected – covered by the existing bullets

Comment on 4.3: Rejected – Regulatory body is not responsible for the skills and performance of contractors. Contractors are selected by the operator and the operator (licensee) is responsible for safety during decommissioning. Some more details on skills of the contractors and their control are given in the guides. See also 4.4.

J5.03.1

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Ref. No.: JPM/A/E1-03-2013

24 January 2013

Sir,

I have the honour to refer to the Agency's letter dated 18 September 2012 (Ref. No.: J5.03.1) regarding the request for comments on the draft Safety Standard *"Safety Requirements for Decommissioning"*. I have the honour to send you enclosed herewith the comments of the Government of Japan on the draft Safety Standard.

Accept, Sir, the assurances of my highest consideration.

Encl.: As Noted

村田 真一
Shinichi Murata
Alternate to the Resident
Representative of Japan
to the IAEA

Mr. Vladan Ljubenov
Decommissioning and Radiation Unit
Division of Radiation, Transport and Waste Safety
IAEA VIC Rm. B-0748

Safomanish

TITLE : DS450 Safety Requirements for Decommissioning

COMMENTS BY REVIEWER			
Reviewer:		Page... of...	
Country/Organization:		Date:	
Comment No	Para/Line No.	Proposed new text	Reason
1	p5, Chapter2	an ~~authorized~~ planned exposure	The word "authorized" is deemed unnecessary. What is the intent of "authorized" planned exposure?
2	P6, Requirement 3	for all facilities and activities that	Editorial

Safety Requirements for Decommissioning (DS450)

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Country/Organization: JAPAN			Page : ...of... Date :	RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.1/1	Some texts to explain briefly about the aspect of decommissioning in the siting should be added. Will the consideration of decommissioning from the siting be addressed concretely in a relevant guide (e.g. DS452)? It concerns us that there is insufficient explanation why the concept is expanded in this paragraph. As mentioned in para. 1.7, we think that it is appropriate to describe that planning for decommissioning begins at the design stage.	Current Safety Requirements (WS-R-5) and former Safety Requirements (WS-R-2) refer to consideration of decommissioning from the design stage. In DS450 the siting is newly added, hence some description is needed to explain why the concept is expanded.				
2	1.9	I would like you to let me know the reason why the terms of 'entombment 'is deleted.	Comment				
3	P.6/1	The application of graded approach should be addressed concretely in a relevant guide (e.g.DS452).	Concrete terms of 'application of graded approach 'encourage readers to more easily understand contents of DS450.				

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Page : ...of... Country/Organization: JAPAN Date :				RESOLUTION			
4	7.6/2	Para. 7.6 *mentions* 'The initial decommissioning plan shall be reviewed by the regulatory body periodically, at least every five years or as prescribed by the regulatory body..... Although we understand that para.5.7 in current Safety Requirement (WS-R-5) prescribes the terms of "at least every five years", we do not assume the need for big modification of the initial plan, within about five years that requires the review of the regulatory body. Therefore, we 'd like to suggest to consider whether the terms would be suitable or not based on the status on how each country implement this review of the decommissioning plan,	Comment				
5	7.9/1	During the transition, operation of the facility shall be subject to the authorization. Combine para. 7.8 with para. 7.9.	Clarification. This 'authorization' written in para. 7.9 considered to mean the authorization for plant operation as limited use. There are no 'shall statement' in para. 7.8.				

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Page : ...of... Country/Organization: JAPAN Date :				RESOLUTION			
6	7.12/1	Large and complex decommissioning projects may be effective/useful from ...	Clarification. In general, as for a project management of such projects which are large and complex, it is useful to divide into several phases in order to manage effectively. . But 'Large and complex decommissioning projects may benefit from...' seems to be unclear .				
7	8.7 bis	Furthermore, prior to starting decommissioning, the operator shall ensure that record for the radioactive waste resulting from it is kept.	It is important to keep records for the radioactive waste resulting from the decommissioning for the radioactive waste management.				

Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Page from 1 to 2 Country/Organization: Japan Date: 22 Dec. 2012				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.1 L1	Some texts to explain briefly aspect of decommissioning in the siting should be added. Will the consideration of decommissioning from the siting be addressed concretely in a relevant guide (e.g. DS452)? It concerns us that there is insufficient explanation why the concept is expanded in this paragraph. As mentioned in para. 1.7, we think that it is appropriate to describe that planning for decommissioning begins at the design stage.	Current Safety Requirements (WS-R-5) and former Safety Requirements (WS-R-2) refer to consideration of decommissioning from the design. In DS450 the siting is newly added, hence some description is needed to explain why the concept is expanded				
2	1.9	I would like to let me know the reason why the terms of ‘entombment’ is deleted.	Comment				
3	P.6 L1	The application of graded approach should be addressed concretely in a relevant guide (e.g.DS452).	Concrete terms of ‘application of graded approach’ encourage readers to more easily understand contents of DS450.				
4	7.6 L2	Para. 7.6 mentions ‘The initial decommissioning plan shall be reviewed by the regulatory body periodically, at least every five years or as prescribed by the	Comment				

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Page from 1 to 2 Country/Organization: Japan Date: 22 Dec. 2012				RESOLUTION			
		regulatory body….. Although we understand that para.5.7 in current Safety Requirement (WS-R-5) prescribes the terms of “at least every five years”, we do not assume that the need of big modification of the initial plan, within about five years, that requires the review of the regulatory body. Therefore, we ‘d like to suggest whether the terms would be suitable or not based on the state on how each country implement this review of the plan,					
5	8.7 bis	Furthermore, prior to starting decommissioning, the operator shall ensure that record for the radioactive waste resulting from it is kept.	It is important to keep records for the radioactive waste resulting from the decommissioning for the radioactive waste management.				

Decommissioning of Facilities (DS450)

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Page from 1 to 2 Country/Organization: Japan Date: Dec. 2012				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.13 (p.3)	Delete this paragraph.	Will the intent of this paragraph describe in "INTERPRETATION OF THE TEXT" attached before the body texts? (Safety related terms are to be understood as defined in the IAEA Safety Glossary (see http://www-ns.iaea.org/standards/safety-glossary.htm).)			X	Reference to the Safety Glossary is provided in all the IAEA Safety Requirement publications.
2	Title of requirement 1 (p.5)	**Requirement 1: Radiation protection, Safety Environment and safety**	Consistency with para.2.3. IAEA Safety Glossary defines "radiation protection" as "*the protection of people from the effects of exposure to ionizing radiation, and the means for achieving this"* hence "protection of the environment" should be added to the title.		X		New title: "Safety, radiation and environmental protection"
3	7.10/1 (p.14)	**…**prior to permanently **shutdown** ~~shutting down~~ **…**	Consistency.		X		"permanent shutdown of the facility"
4	5.2	This paragraph should mention the reason why immediate dismantling is the preferred decommissioning strategy.	Comment.			X	No undue burdens shall be imposed on future generations. (Safety Fundamentals, principle 7)
5	8.3/4 (p.16)	…exposures of workers shall be	This phrase deems that dose constraint is lower limit, however GSR Part3 mentions		X		See the revised text modified to

COMMENTS BY REVIEWER Reviewer: Secretariat of Nuclear Regulation Authority Page from 1 to 2 Country/Organization: Japan Date: Dec. 2012				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		kept within established dose limits and dose constraints shall not be exceeded. →……exposures of workers shall be kept within established dose limits **with due regard to dose constraints.**	"dose constraints are not dose limits; exceeding a dose constraint does not represent non-compliance with regulatory requirements,…(para.1.22)"				requests from several countries.
6	9.3/1,6 (p.18)	…facility **and/or site**…	Clarification and consistency with WS-G-5.1.		X		See the revised text modified to requests from several countries (Sweden).

Comment 1 in the first table: Accepted
Comment 2 in the first table: Rejected – no activities are to be decommissioned.

Table 2:
Comment 1 (on 1.1): Accepted, action – explain decommissioning related considerations during siting in DS452.

Comment 2 (on 1.9): Entombment is not a way to achieve termination of authorization in a reasonable period of time. It was "downgraded" from a decommissioning strategy to an option for management of waste. Such a decision was supported by all the Safety Standards Committees and by the participants of an IAEA TM on Safety Standards on Decommissioning.

Comment related to GA (page 6, line 1): Accepted – to discuss GA in the guide.

Comment related to 7.6: Rejected - There is flexibility (“or as prescribed by the regulatory body”). In addition, 5 years was accepted in WS-R-5, there is no obvious reason to relax this requirement. However, this point will be re-discussed with WASSC, as several Member States raised their concerns.

Comment on 7.9: Accepted – remaining sentence of 7.8 (without shall statement) merged with revised 7.9.

Comment on 7.12: Rejected – replacing “benefit” with “effective” or other terminology will not result in a broader concept of planning. We think the idea of having phases within the project is presented clearly.

Comment on 8.6: Rejected – we agree, but this aspect is covered in 3.4, last bullet.

ПОСТОЯННОЕ ПРЕДСТАВИТЕЛЬСТВО РОССИЙСКОЙ ФЕДЕРАЦИИ ПРИ МЕЖДУНАРОДНЫХ ОРГАНИЗАЦИЯХ В ВЕНЕ

PERMANENT MISSION OF THE RUSSIAN FEDERATION TO THE INTERNATIONAL ORGANIZATIONS IN VIENNA

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J5.03.1

Постоянное представительство Российской Федерации при международных организациях в Вене свидетельствует свое уважение Секретариату Международного агентства по атомной энергии и имеет честь препроводить замечания и предложения по проекту документа МАГАТЭ «Вывод из эксплуатации ядерных установок» (DS450), подготовленные совместно экспертами Госкорпорации «Росатом» и Ростехнадзора.

Представительство пользуется случаем, чтобы возобновить Секретариату уверения в своем самом высоком уважении.

Приложение: упомянутое на 2 л. на английском языке.

Вена, 18 » февраля 2013 г.

СЕКРЕТАРИАТУ МЕЖДУНАРОДНОГО АГЕНТСТВА ПО АТОМНОЙ ЭНЕРГИИ
г. Вена

Decommissioning of Nuclear Facilities (Draft Safety Requirements, DS450)

COMMENTS BY REVIEWER Reviewers: V.Bochkarev, A.Bukrinski, P.Stryapushkin; A.Sobolev, V.Lebedev, S.Mikheenko Country: Russian Federation Organizations: Scientific and Engineering Centre for Nuclear and Radiation Safety, State Atomic Energy Corporation "Rosatom"			Date: 30.01.2012 Page: 1	RESOLUTION			
Comment No	Para/Line No	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.9	1.9 ... - Deferred dismantling (sometimes called safe storage, safe store or safe enclosure) is the strategy in which all or part of a facility containing radioactive material is ...	The definition «Deferred dismantling » contains the phrase (requirement) «removal of the nuclear fuel from the facility (for nuclear installations)». It means that nuclear installation operator has to remove a nuclear fuel out of facility. This requirement is not consistent with Paragraph 8.8, which states that nuclear fuel may be present at the facility during decommissioning. Paragraph 8.8 should consider also the removal of nuclear material (which may remove without dismantling of facilities) from other objects, such as research laboratories, etc.				

COMMENTS BY REVIEWER Reviewers: V.Bochkarev, A.Bukrinski, P.Stryapushkin; A.Sobolev, V.Lebedev, S.Mikheenko Country: Russian Federation Organizations: Scientific and Engineering Centre for Nuclear and Radiation Safety, State Atomic Energy Corporation "Rosatom"			Date: 30.01.2012 Page: 2	RESOLUTION			
Comment No	Para/Line No	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modific at io n/rejection
2	Requirement 5:	Requirement 5: Responsibilities of the regulatory body The regulatory body shall regulate all aspects of decommissioning, ***for all stages of the facility's lifetime*** from the siting and design of the facility to the completion of decommissioning actions and the termination of authorization. ...	It is more exactly.				
3	1.7		Draft considers all decommissioning actions specified in Section 1.7, except non-radioactive waste managing. It's seems to be better to include in the draft a new section how non-radioactive waste management has to be carried out.				
4	1.11		Entombment is considered a solution only under exceptional circumstances. Paragraph 1.1 should describe the criteria for exceptional circumstances and have an extensive list of exceptional circumstances.				

Comment on 1.7: Rejected - Out of scope

Comment on 1.9: Rejected - We do not see a contradiction between the definition of DD and 8.8 (both require removal of the SNF).

Comment on 1.11: Rejected - To be elaborated in the guides

Comment on Req 5: Rejected - As explained in the Background, “all aspects of decommissioning” covers “all stages of the facility lifetime”.

TITLE DS450 *Decommissioning of Facilities – No. GSR Part 6 (Draft dated 2012-09-11)*

These are the Swedish comments to the IAEA draft requirements *Decommissioning of Facilities (DS450, 2012-09-11).* Comments were given by staff from Barsebäck Kraft AB, Forsmarks Kraftgrupp AB, OKG Aktiebolag, Ringhals AB, the Swedish Nuclear Fuel and Waste Management Co. (SKB), the Swedish Radiation Safety Authority (SSM), Studsvik Nuclear AB and Vattenfall AB.

COMMENTS BY REVIEWER Page 1 of 19 Country: **Sweden** Date: 2011-08-29				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
	General	Relevance and usefulness - The stated objective is appropriate, and the document is a useful improvement on the existing guidance.		X			
		Scope and completeness - It would be useful also to consider decommissioning and clean-up of buildings which are to be re-used for other/new nuclear or radiological purposes.	The scope is at large appropriate and the document is in general sufficiently detailed but a somewhat larger scope would be helpful.	X			
		Quality and clarity - In general we find the document to be good and of high quality. Sweden proposes however a number of additions and alterations as detailed below.	In places the text could be clearer and there are a number of inconsistencies and omissions which need to be addressed. We also have comments on the terminology.	X			
		It is suggested that the background chapter is reduced and some paragraphs are moved to later sections. It is suggested that paragraphs 1.14, 1.15 and 1.16 are moved forward as these contain	We feel the background chapter to be too detailed. Some of the paragraphs fit better into the following sections.			X	The document follows the IAEA structure and format.

		fundamental information to the reader. Change *operator* to *licensee* or *license holder* in the full document since this would be more appropriate. (e.g. 3.2, 3.3, Requirement 6, 3.4, 4.2-3, 4.6, Requirement 8, 5.1, etc.). It is suggested that a review of the use of the words *could* and *may* is done in order to better express the "*requirement*"-nature of the standard. Not all countries require that a decommissioning plan is approved by the regulatory body. One way could be to state: *Decommissioning actions are procedures, processes and work activities described in the decommissioning plan, notified to the authority. The overall safety assessment and safety report shall be approved by the authority.* <u>Comment:</u> Several organisations pointed to the need of more examples, illustrations etc. in order to clarify the meaning of some requirements. We presume this can be supplied in safety guides.	In general; governmental or authority requirements are placed on the licensee. GSR Part 3 refers to the "*licensee"* and GSR Part 1 to "*authorized party*". In some places the verb *may* is used to point to possible states or occurrences – avoid this if not needed. The report focuses too much on the decom plan than on the documents of importance to protection and safety. Several issues of decommissioning planning do not address nuclear safety and radiation protection although important for carrying out decommissioning.	X X X X		X	The IAEA position is that the decommissioning plan (DP) is the main safety related document for decommissioning. More details on the content of the DP will be provided in the Guides.
1.	1.3	The word *approved* should be omitted.	Since not all countries require approval of "decom plan" this should be taken out.			X	According to the IAEA, the DP is the main safety related

							document for de-commissioning.
2.	1.4	Comment for consideration	It is not clear whether "*facility*" could describe two reactors on one site - say 50 years apart in age - but with two different licensees?			X	See 5.5 (multi-facility site)
3.	1.5	The paragraph could be moved to Section 2 *Protection of Health and protection of the Environment*. Clarify the meaning of *optimisation* in this context.	The paragraph addresses the issues of Section 2. Clarify the use of the word "*optimised*" in this context, not to confuse it with *optimisation of protection and safety*.		X		Para 1.5 is not a requirement. Optimization replaced with "graded approach".
4.	1.6	Add *waste management* and *remediation* to the means of achieving site release. Change to: …*when the approved end state has been reached <u>and other relevant conditions are fulfilled</u>*…	Decontamination and/or dismantlement are not enough; there are usually rad. waste requirements and possibly remediation requests to be met in order to achieve site release (there can also be other regulations). Compare with 9.2		X		"Site clean-up" instead of "remediation". Definition of an end-state should identify all the "relevant conditions".
5.	1.7	*Planning for decommissioning begins at the design stage <u>and continues throughout the lifetime of the facility</u>…* Remove*: …conducting oversight activities by the regulatory body…*	Planning is a continuous process through the whole lifetime of the facility. The authority shall inspect and oversee decom but it is not a decom action, just as oversight during operation, is not an "operational activity".		X	X	Continuous planning is covered in 7.6 (updates) The regulator is playing an active role during conduct.
6.	1.8	Suggested change: *Termination of authorization involves, <u>inter alia</u>, the demonstration of compliance with the conditions of the ...., <u>management of</u>*	A nuclear licence could be coupled to a nuclear activity carried out at one or more sites. Before licence termination,			X	Termination does not involve management of waste. See also 9.5.

		produced waste, withdrawal of this authorization for the facility….	existing radioactive waste is frequently required to be put in a repository or to be transferred to a new legal party. Other licensee actions could also be required.				
7.	1.9	The last sentence of the definition of immediate dismantling could be removed: ~~*This strategy implies promptly conducting decommissioning actions and involves the processing of radioactive material for either storage or disposal*~~.	The sentence does not add anything to the clarity or meaning as given by the two first sentences.		X		See the revised text modified to requests from several countries (Germany).
8.	*1.9*	*Deferred dismantling…all or part of a facility containing radioactive material is ~~either processed or~~ placed in such a condition that it can be put in safe storage and the facility maintained until it is subsequently decontaminated and/or dismantled.*	The deferral means postponing dismantling/decontamination operations to a later stage and in the mean-time ensure safe (and secure) storage. One does not understand "processing" in this context.			X	Preparation for safe enclosure usually includes processing of some of the radioactive materials.
9.	1.10	Delete the paragraph	The processing of radioactive material and its removal from the facility is clear from 1.9 which states that a combination of the immediate and the deferred dismantling is possible. Managing operational waste and post-operational clean-out is usually allowed under the existing operational licence.	X			
10.	1.11	Move this to the scope section and/or supplement the description of the scope with: *Entombment ~~is~~ shall only be considered a valid strategy under*	The paragraph states that entombment is not an option in case of planned permanent shutdown. ("*For an existing*		X		"For an existing facility" is deleted.

		exceptional circumstances (e.g. following a severe accident). This report does not address entombment.	*facility*" can be removed since accidents only occur in existing facilities.) However, under the header Scope it is written that the report does not address remediation, nothing is said about the decom strategy.				
11.	1.15	Change *planning for decommissioning* to *...planning for decommissioning during siting, design and operation...*"	This would underline that the planning is very different in scope and level of detail during different stages of the facility's lifetime.			X	Continuous nature of planning is covered in 1.16 and 7.6.
12.	1.17	What is meant by: "*facilities for the processing and storage of waste <u>that is not</u> from nuclear fuel cycle facilities*"?	This is not understood without more explanation.	X			See the revised text modified to requests from several countries (Cuba).
13.	1.18	Consider removing the second sentence!	This sentence is already covered by the description of 1.4. Move paragraph 1.4 to Scope.			X	1.4 is definition, 1.18 is description of actions.
14.	1.18	Is the following text really needed?: "*This publication does not address the remediation of areas contaminated by residual radioactive material arising from past activities that (1) were never subject to regulatory control or (2) were subject to regulatory control but not in accordance with the requirements of safety standards"*	What about sites with both "historic" and more recent contamination? It may not be practicable to differentiate these. Does the publication apply for these sites? Will the declaration change anything considering the reports general nature?			X	1.18 defines the scope in terms of actions / activities. Decommissioning of a facility is aimed to lead to a removal of the regulatory control, while remediation of a land is done on sites which are usually not under regulatory control.
15.	1.19 / 7.8	The word *usually* should be removed.	This paragraph could be more			X	Rejected: removal

			developed (perhaps it should be in a safety guide). It would be useful with examples that are typically carried out in each phase. Can full circuit decontamination in a NPP be done in order to reduce radiation doses? What loose equipment can be removed? See also comment to 1.10.				of "usually" Accepted: We agree with the reason and all the suggestions will be considered in the guides.
16.	1.20	Perhaps the issue of "mixed waste" should be noted? The last sentence could be reformulated to be more explicit: *..these issues do not fall into the scope of the IAEA safety standards…*	What about contaminated asbestos, PVC-plastic etc? Maybe a reference to the IAEA mandate, by which the Agency may issue safety standards, could be given?			X	Mixed waste is covered as it is radioactive.
17.	1.22	Change to start: *Section 2 establishes the <u>radiological</u> requirements for the…* Is the paragraph 1.22 needed? What is the rationale (function)?	The word radiological could be included to further specify the types of requirements. The information is not much more than what is given by the section captions.		X		Accepted but modified: Section 2 establishes the requirements for the radiation protection and safety of workers. Rejected: 1.22 (structure) is a mandatory part according to the IAEA format.
18.	2.1	The *optimisation of protection and safety* is commented on by some readers/reviewers.	The new formulation of IAEA in GSR Part 3: *optimisation of protection and safety* is not well known or understood. Some organisations wonder why			X	The same formulation was used in WS-R-5 (2006); See the definition of

			…the draft does not address ALARA, BAT and the careful use of natural resources!!				optimization in the Safety Glossary.
19.	2.2	The phrase "*is of such a nature as to warrant remediation*" needs explanation.	This expression is felt to be too vague for a requirement.			X	This is not a requirement, but an explanatory text providing link to the remediation standards (for situations beyond the scope of this publication).
20.	2.3	Suggest change to "*Compliance with standards for the radiological protection of the environment and people shall be maintained during decommissioning and beyond if a facility is released with restrictions on future use".*	The word radiological is needed to more clearly set aside the non-radiological effects; the restrictions on future use could also be relevant for the protection of people.		X		See the revised text modified to requests from several countries (France).
21.	**Requirement 2: Graded Approach**	Reformulate the Requirement 2 to read: ***A graded approach shall be used for all aspects of decommissioning, consistent with the magnitude of radiation risks associated with the decommissioning activities***	The over-arching requirement does not make sense as written. The "*scope and level of detail"* must refer to planning, work to be performed or similar.			X	Existing wording is consistent with GSR Part 4; scope and level of details are the key aspects to be considered when applying GA.
22.	2.4	The paragraph is well written but the content should be emphasized at other places in the document (referral etc.)	A Graded Approach could be further referred to as appropriate in the document in order to give it more weight (e.g. in the sections on decom planning, conduct etc.)		X		We agree GA is applicable to all aspects and in all phases of decommissioning. That is why decision was made to put the requirement on GA

							upfront. There is already a para on planning (2.4). A new paragraph will be added to cover conduct.
23.	2.5	*The safety assessment and the safety report shall be updated to address the actions listed in the final decommissioning plan and assess incidents that may arise during decommissioning.*	This change in the wording emphasizes the safety report and the safety assessment as being the prime basis for protection and safety and the authority should carefully review those.			X	In the IAEA approach the FDP is the central safety related document and is approved by the RB. It is usually supported by a number of other documents and reports; we do not prescribe their names – "safety report", "safety analysis report" or "safety assessment".
24.	Req. 4, last sentence	Change to: … "*All aspects of decommissioning, <u>using a graded approach</u>, shall <u>as appropriate</u> be subject to authorization and regulatory oversight, from the siting and design…*".	There are situations where it is neither required nor appropriate in accordance with the efficient use of regulatory resources, as well as the graded approach concept, to use such a strict formulation as the original one.		X		Second sentence deleted; "all aspects of decommissioning" is added in the first sentence.
25.	3.2, 3.3, 3.4	The bullets of the paragraphs should be numbered 1,2,3 or given letters a,b,c	This makes it easier to refer to a single bullet in the paragraph			X	This is the style adopted in the IAEA Safety

							Standards.
26.	3.2, 3rd bullet	Delete the second bullet~~…*ensuring that the necessary scientific and technical expertise remains available*…~~	The Government responsibility regarding competence is addressed in Safety GSR Part 1, Requirement 11, and in GSR Part 3, 2.21-2.22 and it is not necessary to repeat this again in a specific sense regarding decommissioning. Otherwise this should be repeated also regarding "*siting, design, construction, commissioning, operation & decommissioning*" but would this be meaningful?			X	Our opinion is that this should remain, as the knowledge, retention and availability of scientific and technical expertise are important for long-term projects as decommissioning.
27.	Req. 5, 2nd sentence	Change …*shall establish the safety standards and requirements for decommissioning*.. to *shall establish requirements and adopt regulations and guides for decommissioning.*	This would be more in line with GSR Part 3, Req. 3: *The regulatory body shall establish or adopt regulations and guides for protection and safety*	X			
28.	3.3, first bullet:	Change to – *establish criteria for the final shutdown of a facility and commencement of decommissioning.*	The regulatory body should not establish a time frame for the decommissioning as long as protection and safety is upheld and the licensee fulfills the obligations concerning decom and waste management. This is the task of the licensee or alternatively could be restricted through international agreements or national policy.			X	Covered under 3.4 – "Responsibility of the licensee".

29.	3.3, second bullet; 3.4, 11th bullet; 4.1	3.3, second bullet (and 2 other places in the document: 3.4, 11th bullet; 4.1) Here security is mentioned although it is not included in the Safety Standards series according to 1.21.	For the sake of consistency and clarity, either remove 1.21 or remove security from the paragraphs!	X			
30.	3.3, 7th bullet, 13th bullet	Remove *approval* from the bullet statements	Many authorities do not approve the decom plan (and certainly not all supporting documents) – they may approve safety assessment, safety report etc. However, this way of regulating is not inconsistent with review of decom plans and request for updates and/or enhancements & supplements.		X		National RB is establishing the requirements for planning and what is reviewed and approved; IAEA approach: DP is the main safety related document and is approved;
31.	3.3, 8th bullet	Change to *…non-compliance with the authorization or licence conditions and protection and safety requirements…*			X		See the revised text modified to requests from several countries (France)
32.	3.3, 12th bullet & 9.3		Something should be added about "roles and responsibilities" for the endpoint *"restricted use"*.	X			See the revised text modified to requests from several countries (Germany, comments 15)
33.	Req. 6; 3.4	Change *operator* to *licensee*! Minor correction in last sentence of Req. 6, change *…safety and protection…* to *…safety and radiation protection…* and *environmental* to *environment*	In this place and in the rest of the document the same terminology as in GSR Part 3 should be used.		X		See the revised text modified to requests from several countries (Germany)
34.	3.4, 6th bullet	Concerning *approval* of final decommissioning plan, See comments 1	Prefer *notification and review of plan* and *thorough review*			X	That is the IAEA approach.

		and 30 above!	*(regulatory approval) of safety assessment and/or report* in accordance with GSR Part 4				
35.	3.4, 7th bullet	Change to: …*managing, <u>with the possible use of contractors,</u> the decommissioning project and performing decommissioning actions*;	Without discharging responsibility, it has been pointed out by several Swedish licensees that contractors must/could be used for decommissioning tasks.			X	See 4.3.
36.	3.4, 9th bullet	Change the formulation to: - *ensuring that the facility is maintained in a safe configuration ~~during transition and until the approval of the final decommissioning plan~~*	If *operator* is changed to *licensee*, the responsibility remains during transition <u>and decommissioning.</u> The licensee is required to ensure safe configuration also during decommissioning. It could perhaps be a different licensee during operation and during decommissioning but that is another issue.			X	The intention with this requirement is to focus on safety during transition.
37.	4.2, first sentence	Change to: *The licensee (authorized party), having the prime responsibility for safety, shall establish and use an integrated management system while carrying out decommissioning.*	The first sentence, as written is not understandable. We assume the licensee has the prime responsibility for safety and that the *licensee (authorized party*) shall establish and use an integrated management system??		X		See the revised text modified to requests from several countries (France).
38.	4.3	Change to: *The prime responsibility for safety shall remain with <u>the licensee.</u> It shall be permissible to delegate the performance of <u>defined</u> tasks to*	As above, we prefer to use the term <u>licensee</u> (or *authorized party)* as in GSR Part 1 or GSR Part 3. We prefer defined tasks	X			See the revised text modified to requests from several countries

		contractors…. And furthermore… *If the licensee changes during the lifetime of the facility, procedures shall be put in place to ensure the transfer of responsibility for decommissioning to the new licensee.*	instead of specific tasks in order not to be unnecessary limiting. It is however unclear who shall perform this – it would typically be a shared responsibility for regulators and licensees? The regulatory body should regulate such a transfer and the earlier licensee shall ensure that the new licensee receives the necessary information, operational data etc…? To what extent is it a part of the integrated management system?				(Cuba)
39.	4.4	Suggest change to: *Provisions shall be made that, as far as possible, institutional knowledge and relevant records about the facility and its previous operation are maintained and accessible.*	In a requirement document it is not appropriate to require that *key staff is retained*. This could perhaps be part of a safety guide as showing one way to achieve the requirement to preserve knowledge about the facility and its earlier operation.		X		See the revised text modified to requests from several countries (Finland); records are included in "institutional knowledge"; see also 3.4
40.	4.5, last sentence	Suggest change to: *The decommissioning management shall ensure that appropriate processes are in place to grant authority and support such individuals in suspending unsafe decommissioning actions.*	To achieve further clarity and coupling to an integrated, process-based, management system.	X			
41.	5.5	Consider whether this paragraph fits better under the Requirement 10 since it is associated with planning. See also comment 2. (Having two licensees at	We find it unclear what is meant by "*site strategy"*. In 5.5 considerations should be made for the interdependencies in the			X	This paragraph reflects selection of strategy for each individual facility

		one site (1.4)). Furthermore, clarify the use of the term "*site strategy"* in this context - is planning rather than strategy the correct word?	planning and carrying out of decommissioning of units, facilities at one site.				on a multi-facility site. Site strategy is high level programme for the site decommissioning that takes into account the interdependencies.
42.	Requirement 9	Add a third sentence: *Funding and cost estimates shall be based on national policy and decommissioning planning.*	The requirement should be supplemented so that cost estimates shall be based on the decommissioning strategy and realistic planning. ("National policy" covers possible levels of decision, from state level to policy by the owners/licensees.)			X	Aspect related to national policy is covered in the first sentence of the Req 9. Decommissioning planning aspect has been already covered in 6.2.
43.	6.1	Change to: *Adequate financial resources, including financial guarantees, to cover…* Change the text in the parenthesis to: (*e.g. for technical, economical or safety reasons*).	Without financial guarantees this could give a picture that the funds should be available already at commissioning (*when needed, premature shutdown etc.*)! A severe accident is not the major driving factor, more often due to economy, safety reasons etc. that facilities are closed or not restarted		X		Text in the brackets was deleted, based on proposals by several countries.
44.	6.2	Change "*periodic update of the initial or final decommissioning plan"* to *"periodically updated decommissioning planning".*	The important thing is that the updated planning forms one important basis for the cost estimates			X	Planning is not updated, planning is a process, activity or phase, plan is the

							document that is updated.
45.	6.3	Consider changing *"suitable funding provision"* to "*adequate funding provision*"	The word "*suitable*" seems too loose and inappropriate in this context	X			
46.	6.4	There seems to be something missing in the phrase…*shall ensure that funding covers the facility (management??) and monitoring, surveillance and control of the facility…*	Not understood		X		If the decommissioned facility is released with restrictions on its future use, financial assurance shall ensure that the financial resources are available for monitoring, surveillance and control of the facility throughout the necessary time period.
47.	Requirement 10	*The operator shall prepare a decommissioning plan*	*Missing article*	X			
48	7.3	Change to: *If permanent shutdown occurs before a new safety assessment and report are established, final decommissioning planning and the change to a suitable decommissioning organisation has taken place, the existing licensee must implement arrangements to ensure the safety of the facility in the interim phase.*	Decommissioning is a new stage in the life-cycle of the facility. There should however always be a licensee which has the responsibility to ensure the safety of the facility. Paragraph 7.3 gives the impression that it is the decommissioning planning that ensures the safety?!			X	Comment is based on a specific national situation. Also, it was clearly said in this document that the operator/licensee is responsible for safety.

49.	7.5	Please also add that the decommissioning plan is required in order "*to demonstrate that decommissioning can be performed safely*".	Aware of earlier comment that *safety assessment* and *SAR* are the most important "protection and safety" documents it is unclear if they are seen as a supplementary documents, part of the decommissioning plan (sub-section?) …but anyhow the planning information is needed for evaluation of the safety assessment.		X		It is covered by "demonstrate feasibility of decommissioning" which includes "safe decommissioning"
50.	7.6	Sweden is of the view that *…at least every five years…*in general is a too frequent interval. Sweden suggests this to be changed to *…at least every ten years or as prescribed by the regulatory body*. *Cost estimates and funding procedures shall be reviewed more frequently, at least every five years.*	Many new reactors are planning to operate for more than 40 years and a more formal update of the decommissioning planning is done at the same timeframe as *periodic safety reviews* are performed. The economic estimates should however be updated more frequently.			X	There is flexibility ("or as prescribed by the regulatory body"). In addition, 5 years were accepted in WS-R-5, there is no obvious reason to relax this requirement. This point will be reconfirmed with WASSC.
51.	**7.7**	Change the wording to be more specific: *The licensee shall retain appropriate records and reports…*	Do be more specific about who should retain what (licensee, regulatory body, government)		X		Appropriate records and reports that are relevant to decommissioning (e.g. records and reports of events) shall be retained by the operator/licensee during the lifetime

							of the facility.
52.	7.8	What is required in the paragraph and by whom? What is the "shall statement"?	This could instead be suitable for a Safety Guide or Technical document	X			See revised text (revised and merged 7.8 and 7.9)
53.	7.9	Consider changing the text to: *During the transition, the facility shall be subject to authorization.* Add at the end of the second sentence:…*or issued additional requirements during the transition phase.*	Could the word "*operation of the facility*" be understood to mean that the operation of the facility is still on-going? There might be need for other, more flexible requirements, during the transition phase.		X		See revised text (revised and merged 7.8 and 7.9)
54.	Requirement 11, 7.10, 7.14	Remove *for approval* from requirement 11 and in paragraphs 7.10, 7.15	As earlier pointed out, the decommissioning planning is not approved by the Swedish regulatory body, only the documents which are of relevance for "*protection and safety*", e.g. *safety assessment* and *safety reports*.			X	See several previous resolutions (FDP shall be approved)
55.	7.10	Change ~~*operator*~~ to *licensee* and in the third line: ~~*for approval within two years of the cessation of authorized activities, unless an alternative schedule is prescribed by the regulatory body*~~ to *for approval in a timely manner after the permanent shutdown.*	It is not appropriate in a IAEA Safety requirement to fix timelimits as one year or two years etc., this is for national authorities. Furthermore the activities after permanent shutdown continue to be regulated			X	See the revised text modified to requests from several countries (Cuba) This two years period will be discussed once again with WASSC.
56.	7.11	"Comment about the funding for the completion of decommissioning"	Sweden agrees with 7.11 but wish to point out that a funding mechanism might need more frequent and different review				No proposal for modification

			and have elements which are not contained in the "decom plan". The plan could reflect and refer to this mechanism rather than constitute the mechanism (this of course varies depending on national circumstances)!				
57.	7.13	Add commas in the first sentence: *In the final decommissioning plan, or updates to it, include new technologies…* Consider defining or further specifying *new technologies and concepts*	For readability. Are we here concerned with techniques and concepts not earlier used in dismantling of nuclear facilities, not used in dismantling of conventional industry or not used in the particular country?		X		"…or updates include …" We are concerned with all of them. To be elaborated in the guide.
58.	7.14	Change the last sentence of the paragraph to: *…regulations. The final decommissioning plan must remain up-to-date until the facility is decommissioned and fundamental changes shall be notified to the regulatory body.*	This is a more appropriate way of handling the updates and enables the regulatory body review, as appropriate, depending on what is changed and its importance to safety.		X		See the revised text modified to requests from several countries (France)
59.	7.15	Please add *…shall be determined by means of a detailed characterization survey, on the basis of records collected during the operation period, <u>and on modeling and analysis.</u>*	Not all radioactivity is possible to measure, for example is the activity of core components often calculated and activation of concrete is determined by a mix of sampling and modeling to receive good accuracy.			X	Activation is mentioned in the brackets, as it is not common for all the facilities. We do not go into the details of "how?" in the requirements.

60.	7.15	Second sentence should be changed to: <u>*Any accidental*</u> *contamination (including in subsurface soils and groundwater) or radioactive waste remaining from operation shall be included in the characterization survey.*	What we think is meant to be addressed is the accidental contamination? (After spent fuel removal from a nuclear reactor, all activity left is contamination or induced activity - activated corrosion products in the primary system must clearly be included in radiological survey!)			X	INES scale: accidents are events of level 4 and higher, these are out of scope of this publication.
61.	7.17	The regulatory body will only approve the "protection & safety"-related parts of the decommissioning planning, not the decommissioning plan as a whole, e.g. the last part of 7.17: *prior to its approval subject to national requirements* could be changed to *prior to the approval, subject to national requirements, of its safety related parts.*	The safe implementation shall be demonstrated in *safety assessment and SAR* – we will not argue whether this should be part of the decom plan or a separate document to the decom plan but the terminology should be in line with other IAEA safety requirements.			X	Comment is based on a specific national situation. There are many other aspects of the FDP that are of interest to local communities (social aspects, economic)
62.	8.3	Comment, the phrase …*the protection and safety of workers and the public is optimized…etc.* raised several comments and suggestions, i.e. to add to the paragraph that *exposures of workers shall be kept as low as reasonably achievable within established dose limits and dose constraints shall be established as appropriate.*	It is evident that the terminology from GSR Part 3 *optimization of protection and safety* <u>is not understood or well known.</u> Also, if this terminology should be used it should be used literally and not with change in wording such as …*safety and protection*. Sweden suggests that it could be considered, for clarity and communication purposes, to write out the requirement explicitly (e.g. as suggested in the left column).		X		See the revised text modified to requests from several countries

63.	8.3	Add *removal of contaminated or activated systems* to the list of actions which create new hazards and end the 2nd sentence with: *…creating new hazards which shall be accounted for in the planning of the work.* Replace the last sentence with: *Any exposures of workers shall be kept within established dose limits and dose constraints shall not be exceeded.*	The last sentence of 8.3 is unacceptable. The removal of safety system and progressive dismantling shall never compromise the work to keep exposures as low as reasonably achievable and certainly not allow for exceeding dose limits. If the safety systems are needed they should be kept, we do not allow workers to go up to the limit just because it is legal to do so – this is not consistent with good radiation protection.		X		See the revised text modified to requests from several countries
64.	8.4	Suggest changing first sentence of 8.4 to: *The regulatory body shall make arrangements for and shall implement the inspection and review of the decommissioning actions to ensure that they are being carried out in accordance with the overall safety assessment and safety analyses supported by the final decommissioning plan according to the regulatory body's responsibility for oversight.*	Makes the text shorter with focus on the safety assessment.			X	Comment is based on specific national situation (IAEA: FDP is supported by SA; Sweden: SA supported by FDP)
65.	Requirement 13	Suggest changing *Emergency planning* and *Emergency planning arrangements* to *Emergency arrangements*	Seems that it is not only the planning but the arrangements themselves which are important.		X		"Emergency response arrangements"
66.	8.6	Clarify if waste minimization, recycling and reuse already shall be applied before the radioactive material is classified as waste? We do not necessarily agree with the formulation: *Disposal shall be the*	This depends what is meant to be compared with. Re-cycling and reuse should also be considered but perhaps is this understood to be taken care of			X	Material that is reused is not waste. Minimization of waste generation is addressed in 8.3.

		preferred option for radioactive waste arising from …	in an earlier step?				Here we address radioactive waste generated after all efforts to minimize its generation.
67.	8.7	Please change 8.7 to read prior to starting decommissioning, the licensee shall ensure the availability of adequate processing, storage and, <u>as applicable,</u> transport package(s) for the radioactive waste resulting from decommissioning.	The requirement that all transport packages for all radioactive waste shall be ready before decommissioning starts seems unnecessary restrictive since often some material is stored at site before transport to disposal and/or interim storage. The important thing is to have a realistic plan so that transport containers are available when needed.			X	Availability does not mean that all the containers have to be already in the building prior to decommissioning; the intention was to say they should be available any time when needed.
68.	9.1	A final decommissioning report shall be prepared <u>*to report the actions that have been taken to decommission the facility, including a description of lessons learned, and*</u> to demonstrate that the end state of the facility as specified in the <u>*approved safety report or by the regulatory body*</u> ~~final decommissioning plan~~ has been met and this report shall be submitted to the regulatory body ~~for review and approval~~.	We would like to add that the report should describe the decom actions taken and lessons-learned. We prefer, as mentioned above, not to put emphasis on decom plan as the legal document to approve and follow but to safety assessment & safety reports and the agreed end-state could also have been specified by one or more authority decisions (including decisions by environmental courts or local/regional authorities)			X	There is no consensus about the content of the FDR. In some countries it is only a final survey report, in some other it includes description of actions performed, final survey, dose records, waste amounts generated and their destinations, lessons learned. That is why these

							details will be elaborated in the guides. The FDR is a basis for termination of decommissioning authorization, so it is reviewed and approved.
69.	9.2, 1st sentence	Change formulation to: The facility shall be releases from regulatory control once the licensee has demonstrated that the approved end state of the facility ~~as specified in the approved final decommissioning plan~~ has been reached and that any additional regulatory requirement have been met.	Same argument as above, prefer not to refer to decommissioning plan. The Swedish authority will only approve the safety-related documents (SAR and safety assessments).			X	Comment is based on a country specific situation.
70.	9.3	9.3 The term *release of facility with restrictions on its future use* should be replaced by the term *termination of license with restrictions on future use of the site (or similar),* since release means release from regulatory control, but when restrictions on the future use apply, the site is still subject to regulatory control. This will require similar changes to be made in other parts of the document.	This is a suggestion to the logic and consistency for your consideration.		X		"Termination of decommissioning authorization with restrictions on future use of the remaining structures and/or land"
71.	9.4-9.5	In 9.4 it is not clear which party (who) the "shall statement" refers to (licensee, regulatory body, government?). For 9.5 this is clear (regulatory body).	These are very important issues in connection with decommissioning and several have requested that they be further elaborated on – perhaps this is for a Safety Guide.			X	Responsibilities are with both the operator and the regulator to keep their parts of related records in

			Perhaps also something should be mentioned about decommissioning/decontamination preparing for new radiological/nuclear use of the site.				accordance with the records retention requirements.

Draft DS-450 Decommissioning of Facilities (STEP 8, 11 September 2012)

COMMENTS BY REVIEWER

Reviewer: Denise Varley

Country/Organization: United Kingdom/Office for Nuclear Regulation Date: 22 January 2013

Comment No.	Para/Line No.	Proposed new text/Comment	Reason
1	General comment	The stated objectives of the document appear to be appropriate, and are generally met by the document.	OK
2	General comment	The stated scope is appropriate and appears to be adequately addressed by the document	OK
3	General comment	The document is inconsistent in the use of the terms “safety” and “environmental protection”. The normal IAEA definition of safety (as in the Safety Objective) should be used, defining “safety” as the safety of people and protection of the environment in Section 1 Introduction. The term can then be applied consistently throughout the rest of the document.	Accepted, revised text uses the terminology as in the BSS.
4	General comment	Consider adding some reference in the document to the application of integrated waste management to the wastes arising from decommissioning, taking account of the interfaces between radioactive wastes and other wastes.	Rejected - mentioned in 1.20, details will come in the guides.
5	General comment	The Safety Requirements for Decommissioning (DS 450) are logically presented, containing scope that is useful for development and implementation of the decommissioning process.	OK
6	Section 1 Introduction	Consider adding in additional definitions, including “transition”, “initial and final decommissioning plans”	These terms are used in the document but not defined at the beginning. Rejected - Implicit definition exists (7.8). Transition is usually covered by the authorization for operation. Details are in the guides. Implicit definitions are given in 7.1, 7.2 and 7.11. More details and examples are in the guides.
7	1.3 and 1.6	Consider combining paragraphs	The document may read better and combining will provide a more logical order in this section. Accepted, 1.3 goes to 1.6.
8	1.3	Provide clarification on whether the decommissioning actions	The issue of when decommissioning actions need to be

		are taken prior to terminating an authorization or whether they can extend beyond termination.	taken is not sufficiently clear. Rejected - Any actions after the termination of decom authorization are not considered to be decommissioning actions (monitoring, surveillance related to remaining institutional control) and are subject to a separate authorization.
9	1.3 and in other paragraphs	Please clarify the meaning of the term “final decommissioning plan” as plans are updated and approved on an ongoing basis throughout the lifecycle of the plant.	The term “final decommissioning plan” is not defined and it is not clear when a plan becomes “final”. Rejected – see Req. 11 and para 7.11 – the final DP is the one submitted for approval and approved.
10	1.5	It would be more consistent with the rest of the document to refer to “radiological hazards and risks” (noting that the term “risks” is used extensively elsewhere in the document).	Rejected – hazards = source, risk = exposure, we want to eliminate source with a minimal exposure.
11	1.7	This refers to a final decommissioning plan but initial decommissioning plans are not discussed until Section 10. Consider the point at which initial and final decommissioning plans are defined and explained in the document.	It would be clearer if initial and final decommissioning plans were defined at the beginning of the document. Rejected - Details on decom plan, its content and purposes are explained in the guides.
12	1.9 1st bullet point	Consider replacement of the word “cessation” with “shutdown”	There is inconsistency in the document on the terms used. Accepted
13	1.10	Consider changing to “Deferred dismantling allows opportunity for the processing of some radioactive material and its removal from the facility, if appropriate alternative storage/disposal facilities/capacities are available.”	The proposed addition would clarify that processing of wastes can take place if facilities for storage and/or disposal are available. Rejected – 1.10 is moved to 1.9 as proposed by several MSs
14	1.17 Last sentence	Replace “these” with “such”	This would clarify that the supporting buildings and services relate to the disposal facilities, which are outside the scope of the document. Accepted
15	1.17 Last sentence	**However**, requirements for the decommissioning of supporting buildings and services of these facilities are established in the present publication.	This provides a better linkage with the previous sentence. Accepted
16	1.19	This paragraph is not clear on whether Post-Operational Clean-Out (POCO) is considered part of decommissioning or operations. A clearer definition of the break between operations and decommissioning would be helpful.	The issue of POCO was raised by respondents. POCO is not mentioned in the document, but is an important part of the work carried out after permanent shutdown and in reducing the hazards of subsequent decommissioning. Rejected - POCO usually starts during transition (operation) and will be explained in the guides.
17	1.20	Paragraph 1.20 indicates that the scope of the document excludes non-radiological hazards. Experience of decommissioning in the UK indicates that non-radiological hazards during decommissioning of nuclear facilities are significant and require careful management. This may be worth	The scope of the document is clear but the point made about the significance of non-radiological hazards in decommissioning is worth noting. Accepted – we agree

		mentioning in the context of the exclusion of non-radiological hazards.	
18	Requirement 2	A large part of the document details preparation of decommissioning strategy, regulatory and interested party engagement and then the submission of a final decommissioning plan two years before decommissioning, it is not clear how this is part of the safety requirements.	Rejected – relation of this comment to the Requirement 2 is not clear, as well as the proposed changes. We consider that preparation of decommissioning strategy, regulatory and interested party engagement and then the submission of a final decommissioning plan are important aspects with safety relevance.
19	Requirement 2	Consider amending paragraph 2.4 to: "The type of information and the level of detail in the decommissioning plans and supporting documents, **including safety assessments**, shall be commensurate with the type, scale, complexity, status and stage in the lifetime of the facility and with the hazards associated with the decommissioning of the facility.	Accepted
20	3.3 – 2nd bullet point	Add "radiation" between "criteria for" and "protection"	For clarity on radiation safety as opposed to non-radiological safety issues Accepted with modification – See the revised text modified to requests from several countries (ENIIS)
21	3.3 – 2nd bullet point	Remove reference to "security"	Security is stated to be outside the scope of the document. Accepted
22	3.3 7th bullet point and other sections	- update, review and approval of the decommissioning plan and supporting documents, and review and approval of any updates after the decommissioning plan has been approved;	The changes would remove any confusion between the initial and final decommissioning plans. Rejected – there is a clear distinction between the IDP and FDP
23	Requirement 6	Change "environmental" to "environment"	Editorial change. Accepted
24	3.4 – 8th bullet point	Consider the addition of "Operators should ensure that wastes are not created for which there is no destination".	The issue of availability of disposal routes for wastes has been an issue in the UK. Accepted with modification – covered by management of waste … See the revised text modified to requests from several countries (Cuba), see also 8.6
25	3.4 – 10th bullet point	Remove "and security"	Security is stated to be outside the scope of the document. Accepted
26	3.4 – 13th bullet point	Consider amending to " performing radiological surveys and characterization in support of decommissioning"	This reflects the fact that surveys are an integral part of decommissioning. Rejected – the intention was to cover all the surveys performed prior, during and after decommissioning. The term "characterization" is mainly used for the part performed prior to decom.
27	3.3	Consider adding a bullet point in paragraph 3.3:	The proposed change emphasizes the importance of operational experience in decommissioning.

		"- fostering a safety culture that encourages the use of international operational experience in decommissioning and associated benchmarking".	We believe this comment relates to 3.4. Rejected – this is adequate for the guides (international experience), but is not appropriate to have a requirement on that or on benchmarking.
28	3.4	Consider the addition of a bullet point to paragraph 3.4: - meeting expectations associated with a reasonable and prudent operator. - actively pursuing relevant international operational experience and benchmarking for decommissioning.	The proposed change emphasizes the importance of operational experience in decommissioning and expectations of operators of facilities. Rejected – see the resolution of comment 27.
29	4.1	Consider deletion of last sentence	The scope of the document is stated to be safety. Rejected – provides useful information, all the mentioned aspects have safety relevance.
30	4.4	Add in a sentence: "Reliance on key individuals for the safety of decommissioning should be minimised as far as possible".	The proposed addition is intended to bring attention to the issue of reliance on single posts for safety and that the risks associated with reliance on single individuals should be minimised. Accepted with modification – See the revised text modified to requests from several countries (Finland), focus on institutional knowledge instead of retention of key staff. More details in the guides ("should")
31	Requirement 10	Insert "a" between "prepare" and "decommissioning"	Editorial change Accepted
32	7.2 and 7.3	Define what is meant by initial and final decommissioning plans	As stated already, there is a lack of clarity on these definitions in the document. Rejected - There is a clear idea of evolution of the DP during the facility lifetime. The initial version is needed before construction and operation for the purposes defined in 7.5 and 7.6. It is being elaborated during operation to become FDP, which is the version approved by the RB for implementation (conduct). The purpose and the content of the FDP is explained in requirement 11 and in the paras 7.10 – 7.17.
33	7.5	Should "decontamination" be "contamination" in the second sentence?	It is not clear what the use of the word "decontamination" means here. Contamination should be minimized, thereby reducing the need for decontamination during decommissioning. Accepted with modifications – See the revised text modified to requests from several countries
34	7.5	Add " and activation" after "(de)contamination"	Minimization of activation is also important in reducing the hazards of decommissioning. Rejected – see revised text in which "decontamination" has

			been deleted.
35	7.9	Does Post-Operational Clean-Out (POCO) form part of the transition between permanent shutdown and decommissioning or is it part of decommissioning?	The document does not mention POCO. It would be useful to consider whether it should be addressed in this document, given it is a phase of decommissioning that is carried out by many operators and is well understood. Rejected (not explained in the requirement) - POCO is usually done under the operating authorization, so it is part of the transition (preparatory work for decom).
36	7.15 1st sentence	Consider changing "a detailed characterization survey" to "detailed characterization surveys"	Characterisation during decommissioning is progressive and iterative in nature. As written it sounds as if only one detailed survey is required when in practice it is an integral part of progressive decommissioning Considered and rejected
37	7.15 Final sentence	Consider amending to "Additional characterization of the site for the purpose of evaluating and preventing potential migration, taking account of sources of contamination, pathways for migration and receptors."	The proposed addition would clarify the issues that would need to be addressed in evaluating potential migration of contamination. Rejected - Too detailed for the requirements
38	8.1	Add "subject to national requirements".	This would give flexibility to national governments. Rejected – The IAEA position is the FDP shall not be implemented if not approved by the RB.
39	8.6	Consider adding before the final sentence: "The operator shall ensure that the wastes arising from decommissioning activities can be disposed of safely".	The proposed addition would clarify the responsibility of the operator in disposing of wastes in a safe manner. Rejected – the decommissioning operator is not responsible for the safety of disposal facilities. It shall only demonstrate compliance with the disposal WAC.
40	8.6	Consider adding: "The disposal of radioactive wastes arising from decommissioning should be carried out so as to minimize the radiological impacts on people and the environment"	The proposed addition would clarify the responsibility of the operator in disposing of wastes in a manner that minimizes radiological impacts. Rejected – out of scope.

Comments on the IAEA DRAFT GENERAL SAFETY REQUIREMENTS DS450, version from 11 September_2012
DECOMMISSIONING OF FACILITIES

COMMENTS BY REVIEWER

Reviewer: ***Tetyana Kilochytska***, *Head of Unit on Radioactive Waste Management Safety* Page 1 of 1
Country/Organization: *Ukraine/ State Nuclear Regulatory Inspectorate of Ukraine*

Reviewer: ***Zoya Alekseeva,*** *Leading Researcher*
Country/Organization: *Ukraine/ State Scientific and Technical Centre for Nuclear and Radiation Safety*

Date: *18/01/ 2013*

RESOLUTION

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	In general	End state criteria and partial site release criteria are mentioned in the document. It is desirable to present these criteria or give the references on international experience (for example it should be clarified whether the background radiological conditions obtained prior to construction of the facility should be used as end state criteria and how such a criteria should be applied in case of partial site release)	To take into consideration international experience gained in decommissioning				
2	Para 3.4, Page 9, after bullet 5 add a new bullet	- submitting an initial decommissioning plan for review and approval by the regulatory body	To ensure an adequate procedure of consideration and approval by regulatory body				
2	Para 3.4, Page 9, 8th bullet, add new text	- identifying a procedure for characterisation of radioactive materials, estimate quantities of radioactive waste of different categories resulting from decommissioning actions, and identifying a destination for all waste….	To guarantee that all waste will be managed appropriately				
4	Page 12, para 6.4	Release of facility with restrictions on its future use and control of the facility are mentioned. It should be clarified type of restrictions as well as recommendations for the time period of control should be given	To take into account the final disposal route				
5	Page 16, para 8.6	If disposal capacity is not available, radioactive waste shall be stored safety in accordance with the relevant requirements and taking into account the generic waste acceptance criteria for final disposal [3,9]					

Comment 1: Rejected - This high level document does not provide details on site release criteria. The issue is addressed in the guides.

Comment 2: Accepted with modifications – submission of an IDP for review, but not for approval (consistent with the responsibilities of RB)

Comment 3: Accepted with modifications – See the revised text modified to requests from several countries (Cuba), in addition, the responsibility of licensee to manage all the waste during decommissioning is covered in paragraph 8.6.

Comment 4: Rejected, as it is related to chapter 9 which deals with completion of decommissioning and release of facility from regulatory control.

Comment 5: Rejected – too prescriptive (generic WAC for disposal may not be available in every country); current formulation “radioactive waste shall be stored safely in accordance with the relevant requirements” gives more flexibility.

TITLE: USA Comments on IAEA Draft Safety Requirements DS450: "Decommissioning of Facilities – General Safety Requirement Part 6"

COMMENTS BY REVIEWER Reviewer: USA (Contact: Boby Eid: Boby.abu-eid@nrc.gov) Page 1 of 9 Country/Organization: USA/US Nuclear Regulatory Commission Date: January 17, 2013				RESOLUTION COMMENTS			
Comment No.	Para/Line No.	Comments/Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Title	We suggest modifying the title from *"Decommissioning of Facilities,"* to *Decommissioning of* **Nuclear** *Facilities".*	Clarity: The current title may contemplate inclusion of non-radiological facilities.			X	The scope (1.17) provides a list of facility types, not all of them are nuclear facilities.
2	Para 1.3, Page 1	Modify Para 1.3 to read: 'Decommissioning actions' are the procedures, processes and work activities as described in the approved final decommissioning plan **and/or activities after shut down to ensure containment and safety.**	Completeness: Operator may conduct certain decommissioning activities essential to safety after cease of operation and report such activities to the regulator in a specific post-shut report. .			X	The proposed addition is related to the transition phase which is part of operational phase.
3	Para 1.6, Page 2	At the end of Para 1.6 add the following: **Public inputs are to be addressed before completion of decommissioning activities.**	Completeness: Stakeholders and public inputs are significant in the decision-making regarding the end-sate of the decommissioning facility.			X	To be addressed in a lower level document.
4	Para 1.9, Page 2, Line 11	Delete text between parenthesis to read:	Consistency with Para 1.9.	X			.

		Deferred dismantling ~~(sometimes called safe storage, safe store, **SAFSTOR**, or safe enclosure)~~ is the strategy in which ..					
5	Para 2.2, Page 5	However, if the incident or the particular situation is of such a nature as to warrant **remediation under emergency situation**, other IAEA safety standards apply [~~4,~~ 11].	Clarity & Completeness			X	Remediation is an existing exposure situation and is usually performed once the emergency is declared over.
6	Para 2.3 Page 5	Compliance with environmental protection standards **[insert reference**] shall be maintained during decommissioning and beyond if a facility is released with restrictions on future use.	Clarity and completeness: This Para is left ambiguous to interpretation of the reader as to "what environmental protection standards adopted by IAEA.**"** **We recommend adding a reference [e.g., [4]]; or adding a statement to read: "Compliance with applicable environmental standards, or limits, required by government or state authorities."**	X			See the revised text modified to requests from several countries (France)
7	Para 3.1 Page 6	Modify 3rd line to read:	Completeness and quality:	X			

		These requirements **shall** apply in establishing the appropriate infrastructure **and responsibilities**. Alternatively specific citation of requirements needs to be inserted.	Use of the word shall for requirements is necessary in order to have consistency across the document.				
8	Page 6, Requirement 4	Modify the last sentence to read: **All aspects of decommissioning shall be subject to authorization and regulatory oversight, from the stage of siting and design of a facility to the stage of authorization for license termination.**	Completeness, clarity, and consistency with Para 1.1			X	Last sentence is deleted (See the revised text modified to requests from several countries (Sweden))
9	Para 3.3 Page 7	Modify 1st bullet to read: "establishing criteria and the time frame for the commencement of decommissioning **and termination of authorization of licensed facilities**;	Completeness		X		See the revised text modified to requests from several countries (Germany, comment 15)
10	Para 3.3 Page 7	Modify 3rd bullet to read: establishing requirements for financial assurance for the funding of decommissioning **including** a mechanism to ensure that adequate resources will be available when necessary for safe and timely decommissioning, **in the case that the government has delegated this to a regulatory body.**	Language & completeness			X	The paragraph is changed based on several comments by other countries; proposed changes do not improve the completeness.

11	Para 3.3 Page 7	Add a new bullet after bullet 3 to read: **Establishing requirements to conduct adequate survey to identify all radiological contamination at the facility.**	Completeness to ensure having requirements for adequate survey.			X	This is covered by requirements for planning; it will be elaborated in the guides.
12	Requirement # 6 and Para 3.4 1st line, Pages 8 & 9	After "the operator," add **"and/or authorized licensee." Alternatively, "The operator" needs to be explained in the glossary to include the "authorized licensee."**	Completeness to consider cases when the authorized operator is no longer the authorized licensee to carry out decommissioning and environmental monitoring activities	X			
13	Para 5.4, Page 11	Modify Para 5.4 to read: If the shutdown of a facility is sudden (e.g. as a consequence of a severe accident), the decommissioning strategy shall be reviewed **and integrated with the emergency response actions on the basis of** the situation that initiated the sudden shutdown to determine whether revision of the strategy is required. The facility shall be brought to a stabilized condition and safe configuration before an approved final decommissioning plan is implemented.	Completeness to link and align emergency response actions with strategy for decommissioning after achieving stable conditions and safe facility configuration. This also represents transition from emergency situation to existing situation in accordance with the IAEA BSS.		X		Content in the brackets is deleted, See the revised text modified to requests from several countries (France)
14	Para 5.5, Page 11	Modify Para to read: For sites with more than one facility, a site strategy for decommissioning shall be developed to ensure that the interdependences of the facilities are	Clarity and flexibility to allow deference of decommissioning one unit until cease of operation of another			X	This example can be used in the guide as one possibility.

		taken into account in the planning for individual facilities which will lead to final decommissioning plans for each facility (e.g. by means of partial site release). **Alternatively, decommissioning of one facility after cease of its operation can be deferred until cease of operation of another adjacent facility licensed by the same operator**.	interdependent unit.				
15	Section 6.1, page 12	Regarding *"Financial Assurance;"* there are two concerns with the current draft revision in Section 6.1. • **First, the following sentence was removed from the previous draft issued in February, 2012, and should be inserted back in the text: "A mechanism to provide for the required financial resources needs to be in place before authorization to operate the facility is given**	• This provision and the recommended added sentence are needed to address adequate financial assurance for <u>new</u> facilities, while provision 6.3 as worded pertains to <u>existing</u> facilities. The added sentence would be consistent with provision 6.3 which requires approval of renewal or extension of the authorization to include financial assurance.		X		First concern is partly covered in 3.2 bullet 4, and in 6.1. More details will be provided in the guides. Second concern accepted, the text in the brackets is deleted.

		• **Second, the concern in Section 6.1 is with the wording in the last sentence "…even in the event of a premature shutdown of the facility (e.g., as a consequence of a severe accident)." The parenthetical words were added after the February draft.**	• This wording is inconsistent with statements about financial assurance in section 3.3 on page 7 and section 3.4 on page 9 that state financial assurance should "…cover the costs associated with safe decommissioning, including management of resulting radioactive waste." Severe accidents should not be the basis for financial assurance. A premature shutdown could, however, occur for other reasons such as a business decision to close a facility before its previously planned shutdown.				
16	Para 7.1, Page 12	Modify Para 7.1 to read: 7.1. For new facilities,	Completeness.			X	Most of the aspects are covered already in Chapter 7 (details

		consideration of decommissioning shall begin early in the siting stage and shall continue through to termination of the authorization. **The regulatory body shall ensure that operators take decommissioning into account in the siting, design, construction, commissioning and operation of the facility, including maintaining records of design features to facilitate decommissioning , as well as maintenance records and records of spills or uncontrolled releases; by means of features to facilitate decommissioning, maintenance of records of the facility, and consideration of physical and procedural methods to limit contamination and/or activation. In addition, operators shall maintain records of environmental monitoring and enforcement actions. Further, operators shall consider use of physical and procedural methods to limit contamination, minimize waste generation, or activation.**					of the initial and final decommissioning plan).
17	Section 7.1	**Regarding the "Final**	The regulatory body		X		**"…unless an**

	page 14	**Decommissioning Plan." This draft added in wording: "… a final decommissioning plan shall be submitted to the regulatory body for approval within two years of the cessation of authorized activities, unless an alternative schedule is prescribed by the regulatory body." While the two years submittal and alternative schedule is consistent with NRC's requirements and was discussed in February, the alternative schedule should not be <u>prescribed</u> by the regulations**	may not have enough information to prescribe an alternative schedule. Instead, the sentence could be revised "…unless an alternative schedule is requested by the operator and approved by the regulatory body."				**alternative schedule is agreed with the regulatory body."**
18	Para 7.15, Page 15	At the end of Para 15, add the following sentence: **Assessment of potential migration of radioactivity in subsurface media (e.g.; soil and/or aquifer) shall be conducted within the performance period established by the regulatory authority**.	Assessment of potential migration of radionuclide is necessary to ensure protection of the public and the environment within the authorized performance period.			X	Not applicable to all the facility types. Details of the Safety Assessment (including dose assessment) are provided in the guides.
19	Para 8.3, Page 15 &16	Last line, Modify 2nd sentence to read: **"Decommissioning actions such as**	Transport of large components such as reactor vessel and early		X		See the revised text modified to requests from

		decontamination, cutting and handling and transport of large equipment, and the progressive dismantling or removal of systems and components have to be coordinated in advance with the responsible parties in order to avoid potential of creating new hazards.	coordination with responsible parties is essential to avoid hazards.				several countries.