

Resolution Table for DS441 Construction of Nuclear Installations (Draft 1.1) October 2011

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Sweden 1	General	The guide is not completely consistent regarding manufacturing and procurement of components and parts. Some parts of the guide mention these important aspects, while other parts of the guide do not. There is much more that needs to be considered in these contexts, concerning technical requirements and quality assurance. Compare e.g. with Q6 and Q7 in the IAEA's Safety Series no. 50-C/SG-Q. The working group has to decide, and bring clearer boundaries for what should be included in the guide and not, with arguments why. References to other IAEA standards, where issues are developed and refined, have to be given.			For procurement, GS-G-3.1 already covers the topic as referenced in par. 1.1. For manufacturing, some new recommendations are added to incorporate the ideas of 50-C/SG-Q which is not included in its superseded document GS-G-3.1.		Recommendations on procurement are provided sufficiently in GS-G-3.1 and this is mentioned in par. 1.1 of the draft. The recommendations on manufacturing are added to enhance the topic. By above modifications, recommendations provided in Q6 and Q7 of 50-C/SG-Q are generally covered by GS-G-3.1, GS-G-3.5 or DS441.
Finland 1	General	The safety guide DS441 "Construction of Nuclear Installations" has developed and the focus has been changed from the detailed guidance to the technical work done at the construction site to the overall management of the project. The detailed technical instructions are expected to be published in related technical document. This change has enhanced the approach of the safety guide.		X			
Finland 2	General	As the DPP of this guide was approved in CSS meeting this spring there has not been too much time to work with the safety guide along with the approved DPP. One of the major goals of this NUSC internal review could be the assessment of the coverage of the issues to be dealt in the safety guide.	general	X			

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Finland 3	Gene ral	There are different types of TSO services needed during the manufacturing and construction. These topics should be included to the safety guide. The independent assessment and inspections made by consultants and third party organizations should be dealt separately.	The use of TSO services is a broad issue that could be opened more in this safety guide. What are the requirements for the TSO support and what are the roles of different stakeholders when TSO support is needed.		As of now, different types of TSO services are out of this guide’s scope and this was never included in DPP. However, reference statement to DS429 “External Expert Support for the Regulatory Body” should be added in future after its content is thoroughly reviewed. But as of now, this is what DS441 has on TSO: GS-R part 1 Requirement 20 and 21 describes the TSO and this is referenced in para. 3.1 of DS441. Also, GS-G-1.3 paras. 3.17-3.18 covers TSO services.		Because DS441 is developed in parallel with DS429, any guidance with regards to TSO and third party assessment should be consistent with each other. Principally, DS429 should be the one covering this topic and DS441 should make reference DS429. If there is any missing issue which should be addressed, those issues may be amended in the future as DS429 is developed.

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Egypt 3	Gene ral	<p>The previous DPP which we receive it from approximately 1 year have more important sections for construction phase such as : Introduction , Safety classification , Civil /Architectural Engineering and Construction , Mechanical , Component Manufacturing and Installation , Electrical and I&C Components Manufacturing and Installation, Implementation , System Integration , Welding and Authorization and Commissioning</p> <p>These topics are much suitable for construction espically for newcomer countries (first nuclear plant)</p> <p>My question if there is possibility to consider these items or sections again in the present document ?</p>				X	Unfortunately most of the technical recommendations which authors wrote are not nuclear specific and too detailed to be included for the IAEA Safety Standards. And many people, including some NUSSC representatives, do agree that this is the case. However, these recommendations will be included in a future TECDOC.
Egypt 4	Gene ral	I suggest to change the title to: management system for the construction of nuclear Installations. Because most of the documents deals with management.			Modified to : Construction <i>for</i> Nuclear Installations		Change should make it less technical and be consistent with NS-G-2.9 "Commissioning for NPPs"
USA Supplementary #1	Gene ral	<p>Are the revised intent, scope and context for this version, Draft 1.1, of DS441, consistent with its title, which does not include any reference to Management System?</p> <p>Although the title refers to the main life phase of the installation that is the subject of the document, the title is not explicit in noting that the document emphasizes aspects of the Management System.</p> <p>This comment is less significant if the numbering of the final guide indicates that it would</p>	<p>Precise relation between the title and the intent, scope and context of the guide.</p> <p>The "Explanatory Notes on the DS441, Draft 1.1" (attached PDF file called 'DS441 Caveats') state:</p> <p><i>"DS441 was originally intended to include</i></p>				To have the phrase "Management System" in the title is misleading since the Guide is not entirely on Management System issues (regulatory activities, for instance).

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		<p>emphasize aspects of the Management System.</p> <p>Note: Draft 1.1 incorporates the comments previously made and that apply to its new intent, scope and context.</p>	<p><i>recommendations from the technical aspects of civil & architectural, mechanical, electrical, I&C, software and welding as described in the table of contents of DPP (approved by CSS in May 2011). During the draft development with experts, however, these technical recommendations were found to be inappropriate (technically too detailed which are not necessarily directly related to nuclear safety) for the IAEA Safety Guides, but instead more appropriate for the TECDOCs. Some NUSSC and CSS representatives were able to preview these recommendations and have also commented that this</i></p>				

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			<p><i>is the case. Therefore, it was decided to focus only on management of construction activities from the perspective of management system."</i></p> <p>This statement seems to indicate that there was a significant change in the intent and scope of DS 441. Accordingly, the table of contents in Draft 1.1 differs from that in the Document Preparation Profile, DPP441 that is in the IAEA's web site. Also, the first three references in the Background section of the Introduction of DS441, which provides a context for the guide, all refer to guidance related to aspects of the Management System.</p>				

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UK93	General	<p>No mention of forms of contract driving contractor behaviour. Areas to be considered:</p> <ul style="list-style-type: none"> • Design change control • Deviations and variations • SQEP • Licensee “Intelligent customer” recognition • Use of Design Authorities • Use of Nuclear safety committees • Auditing of the supply chain • Keeping supply chain lengths to a minimum • Keeping contractorisation to a minimum 				X	To make recommendations on the forms of contract is considered too detailed. The general notions of how to ensure safety from the perspective of those suggested areas are basically covered in the guide except (1) use of design authorities, (2) use of Nuclear Safety Committees, (3,4) keeping supply chain lengths and contracting to a minimum. But these are not <u>directly</u> related to safety. What we should focus is to develop a simple, general “overarching” guide to cover these many details such as forms of contract.
France 1	1.1	The fundamental goal of construction is to correctly build an approved <u>as designed</u> . In order to accomplish this, this Safety Guide provides appropriate <u>recommendations on</u> management process	Avoid using approved designed (who approved it?)			X	Approval is provided in the IAEA glossary as “The granting of consent by a regulatory body.” This is what DS441 assumes similar to References on regulatory related Safety Guides.
Canada 10	1.4	<p>Replace first and second sentence with “Where contracted services are an integral part of construction, contractor oversight challenges are similar in scale and safety importance as those for operating facilities”</p> <p>Delete entire third sentence.</p>	First and second sentence needs to allow for those countries who still utilize internal utility construction organizations (i.e. no contracting) (or may decide to go in that direction because it makes business		<p>First and second sentence is replaced as suggested but the statement about the factors for increasing in contract service stays.</p> <p>The paragraph is also moved from BACKGROUND section</p>		To explain its significance as recent projects have failed to take precautionary measures and manage appropriately of increased contracting services. This gives background information for supervising contractors in the later section. This may be helpful for some countries not familiar with large projects like construction of NPPs.

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			<p>sense)</p> <p>The second sentence is not necessary in the paragraph. Increased use of contracted service is common in all industries, not just nuclear.</p> <p>In addition, the concept of “turn key projects” is not accepted by a large number of Nuclear Regulators around the world. Licensees must be accountable for all design, safety analysis construction and commissioning activities by their licence.</p>		to the section on Contract Oversight (between 4.37 and 4.38).		The paragraph is moved to 4.37 and 4.38 since it does not belong to the BACKGROUND section.
UAE 1	Para 1.4	Place para 1.4 after para 2.2.	Para 1.4 does not constitute background information. While I agree with what it says it does relate to the other parts of this article.		Move and insert this paragraph between 4.37 and 4.38		The paragraph does not seem to fit well for the section on definition of contractors.

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USA supplementary 2	1.7	<p>Section 1.7 states <i>“This Safety Guide identifies and explains safety significant construction activities which should be considered, checked and reviewed for ensuring quality of a new nuclear installation.”</i></p> <p>Comment: There should be a clarification on whether there may be other safety significant construction activities besides those addressed in the guide (for specific applications).</p>			1.7 is modified as: “This Safety Guide identifies and explains safety significant construction <u>management</u> activities which should be considered, checked and reviewed for ensuring quality of a new or modified nuclear installation		Emphasize that the guidance and recommendation in DS441 is mostly from Management System perspective.
Finland 4	1.8	<p>add</p> <ul style="list-style-type: none"> To assist the stakeholders in understanding the roles and responsibilities of different types of technical support organizations contracted. These technical support organizations may be such as consults carrying out independent review and assessment or third party inspections during different lifecycle phases of the components and structures. 	This safety guide would be helpful also to different kinds of TSO organizations.		To assist stakeholders in understanding the roles and responsibilities of different types of <u>contractors</u> . (second sentence is not included)		The word ‘contractors’ is used since many other contractors (designers, suppliers, manufacturers, installers, etc.) are described in the draft. But as of now, the draft has no detailed description of different types of TSOs so second part is excluded. But the second part should be covered mostly by DS429 “External Expert Support for the Regulatory Body” and this will be referenced in future as it is developed.
Canada 17	1.10/Line 4	“The IAEA’s Nuclear Security Series [Reference X] covers...”	Reference the IAEA Nuclear Security Series documents for improved clarity			X	The reference to all relevant IAEA Nuclear Security Series documents is not usually provided directly in the IAEA Safety Standards. Please see other Safety Guides on how it is similarly handled.
USA 1	1.10	(ADD the following after the first sentence) The security measures that describe actions taken during nuclear power plant construction should	A review of open-source media coverage and		The suggested paragraph with slight editorial modification		

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		<p>consider, detect, and deter conditions that would impair the capabilities of security- and safety-related systems, structures, and components (SSCs) to perform their intended functions, where those conditions are not otherwise detected by engineering and performance barriers to ensure that SSCs are installed and tested as designed. Security measures employed during construction should consider control of personnel, material, and vehicles; random patrols/inspections as defined in site procedures; and pre-employment screening</p>	<p>discussions with terrorist experts confirmed that both domestic and international terrorist groups have targeted and have expressed the intent to target nuclear facilities and/or critical infrastructure and symbolic facilities in the United States and abroad. Such terrorists or criminal extremist organizations have the following attributes:</p> <ul style="list-style-type: none"> • persistence in attacking identified targets or target types over periods that extend to multiple years and with a variety of methods (e.g., attacks on the World Trade Center); • patience and a 		<p>is added to section 2 as part of prerequisites for construction.</p>		

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			<p>willingness and ability to develop plans that require several years and multiple people to implement (e.g., attacks on September 11, 2001);</p> <ul style="list-style-type: none"> • ability and willingness to attack protected and/or hardened targets (e.g., the U.S.S. Cole); • an interest in attacking symbolic or iconic targets; • a focus on nuclear materials and facilities; • creativity in strategy and approach; and • a willingness to die or be apprehended in the course of an attack. <p>The review of media</p>				

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			<p>coverage also identified numerous examples of "ecoterrorism," some directed at domestic facilities, including nuclear power plants under construction. Groups like Earth First, the Earth Liberation Front, and the Animal Liberation Front are the most visible organizations employing this tactic. These organizations have demonstrated the capacity to perform acts of sabotage and violence and to destroy property. Security during the construction phase could identify clues to future terrorist intentions. Intentional actions taken during the construction phase could cause a delayed security event or could otherwise</p>				

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			<p>negatively impact the security of the plant once it becomes operational.</p> <p>Terrorists routinely gather information and perform surveillance against potential targets during the early planning stages of an attack.</p> <p>The primary concern regarding terrorist-related activities during the nuclear power plant construction period is the ability for potential adversaries to introduce undetected defects into security- or safety-related SSCs or to pre-position contraband (e.g., surveillance equipment, weapons, and explosives) that could be used for malicious purposes after the plant is</p>				

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			<p>operational. A secondary concern is the potential for adversaries to conduct detailed site surveillance that could support the execution of future malevolent activities.</p> <p>As stated previously, no specific regulatory requirements currently exist for access authorization and physical protection at construction sites for nuclear power plants before the receipt of nuclear fuel. The US recognizes that potential construction-related sabotage is partially mitigated or deterred by industrial security measures and other activities conducted by licensees during the plant construction period (e.g., robust designs, safety-</p>				

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			<p>related quality assurance programs, preoperational testing). However, high level expectations discussed in this document would provide the necessary assurance that potential terrorist-related threats would be identified or prevented. The proposed requirements would provide the necessary assurance that persons performing construction work on new nuclear power plants are not tied to terrorist activities and that system, structures, and components have a regulated level of physical protection during construction.</p>				

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France 4	Section 2		<p>The part entitled "Prerequisites for the construction of Nuclear Installations" (2.4 to 2.15) has large overlaps with other paragraphs in the following chapters: it may be better to distribute/merge the paragraphs in these chapters.</p> <p>As a consequence, the chapter 2. could be suppressed as the other parts of chapter 2 (2.1 to 2.3) could be integrated in chapter 1.</p>			X	<p>It is suggested that prerequisites to initiate the construction should be given and emphasized separately as experience has shown that the industry tends to start without taking care of all presented issues. Overlaps seen in later sections will be eliminated as much as possible. Structure of section 1 (or chapter 1) should stay as it is to be consistent with the standard format on Safety Guides format. (Section 1 should consist of background, objective, scope and structure only and no definitions or use of terms).</p>
Canada 19	2.1	<p>Replace the term "tests" with "commissioning activities".</p> <p>Consider eliminating the use of terminology such as "pre-commissioning tests", "pre-operational tests" etc. and using the more generic term "commissioning activities"</p>	<p>The term "tests", "associated tests" or "commissioning tests" is not discussed in reference [9] (IAEA Safety Glossary).</p> <p>The term "tests" is too narrow. The term "Commissioning Procedures" covers off a gamut of different activities, such as inspections</p>		<p>The following footnote is added: "In some cases, pre-commissioning tests may be a part of commissioning programme and performed by group or organization responsible for commissioning. In this guide, pre-commissioning tests are included in</p>		<p>Annex of NS-G-2.9 (DS446 under development) defines "pre-requisites for pre-operational tests" which is usually done as pre-commissioning tests before commissioning and most countries do understand this concept because in most cases pre-commissioning tests are done during construction (before commissioning) by construction organization or group, not commissioning people. Before handover from construction to commissioning group, there usually</p>

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			<p>and tests that are used to complete commissioning.</p> <p>The terms “pre-commissioning tests”, “pre-operational tests” are confusing in practice and result in contractual issues on a project. All actually forms of “commissioning procedures” conducted in a continuum of construction and commissioning approach to operation..</p>		<p>construction stage and assumed to be performed by the construction organization.”</p>		<p>exist tests to ensure the correct installation, set-up, assembly, etc. has been done by the installer or assembler. To generalize simply pre-commissioning tests into commissioning activities creates more confusion than the current definition.</p>
France 5	2.2		<p>A discussion may be useful in NUSSC to see whether it is appropriate for a licensee to contract the construction organization...</p>	X			<p>To be raised during NUSSC. But the construction organization should be allowed to be a contracted organization because not all licensees have adequate capacity to work as the construction organization, especially for the licensee in new embarking countries or countries with no recent construction experience. But the responsibility for safety is always with the licensee.</p>

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Canada 21	2.2/L ine 5 and 2.3/L ine 1	IAEA may wish to consider revising to include Owner’s Engineer and/or Owner’s Support Services for completeness and consistency with industry practice	The document does indicate that the licensee can hire a contractor to perform some of its duties, but it does not use the terminology of the Owner’s Engineer (OE) or Owner’s Support Services, which are now common in the nuclear industry			X	Unfortunately these are not defined currently in the Safety Glossary and probably not clear for many countries as owner could mean different parties (State owned? Stock owner? Operating company?). Also If we introduce these specific terms, then there would be other new terminologies used in industry practice which may makes this guide too specific and inconsistent compared to other Safety Guides.
USA Supplementary3	Section 2.2	<p>Section 2.2 in reference to the Construction Organization, states: <i>“Where the licensee is unable to fulfill this role in all its aspect, it may appoint a contractor or contractors to carry out specific roles for a part or the whole of an installation.”</i></p> <p>Comment: This can be construed as meaning that only under these circumstances the licensee may take this action.</p>			Modified as follows: “This construction organization is the sole entity managing the construction activities <u>such as</u> civil and architectural works, manufacturing, assembling, installation and testing of items important to safety at the level of the entire installation. Where the licensee is unable to fulfil this role in all its aspects , it may appoint...		Modification makes these activities as an example and not necessarily a complete list.

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Finland 5	2.3	replace consultants with technical support organizations	TSO support is wider than such consults and is widely used in IAEA guidance		TSO is added after consultants		Consultants and TSO are not always equivalent so they are written separately.
ENISS 1	2.3	The Contractor refers to any individual...or procurement document directly issued by the licensee	The contractors should have the same obligations than the licensee			X	The definition of the contractor includes all those who are contracted by anybody. Thus the contract or procurement document can be issued by anybody, not just a licensee.
ENISS 2	2.3 Subcontractor, fabricator, consultant and their sub-tier level	Definition refers to all layers of organization performing activities to which the requirements of this Safety Guide may apply in a graded manner	To subcontractors and the other layers safety related requirements may apply in a graded manner and in some case not apply at all. Consider the case of specialized suppliers providing high technology items applied in many industrial activities			X	The approach is to first define what contractors generally mean and then provide safety recommendations. Although the definition includes ones not involved in safety matters, all recommendations in this guide apply only to safety significant issues and therefore only contractors relevant to safety issues. Graded approach is mentioned in 1.9. and 4.37

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UK01	2.4 end	The regulatory body should also review the management systems once construction is in progress.	It is often the case that only once construction has actually started that the regulator can adequately judge some management systems , ie when they are in use. Having procedures in place is accepted prior to start but it is people who use these that will make the procedure stand or fall.		The proposed recommendation is added to 3.6: “-how proposed arrangements, procedures and quality assurance programmes for implementing the design throughout construction is implemented under a proper management system;”		The proposed issue is not a prerequisite for a construction so it is added as regulatory body’s function during construction in section 3.
Finland 6	2.5	delete governmental add TSO aspect ... vendors, manufacturers and construction organizations; and an appropriate governmental infrastructure, including a regulatory body with well defined responsibilities and functions as well as technical support services for the licensee and the regulator.	There is no reason to limit the infrastructure to the governmental aspects.		... an appropriate governmental infrastructure, including a regulatory body with well defined responsibilities and functions; <u>and an appropriate technical support infrastructure for the regulatory body and licensee.</u>		Some modification to the suggested sentence to avoid run-on sentence.

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EC 1	To be included at the beginning of 2.5	The highest level of safety should be the top priority at the construction stage. To be achieved, this highest level of safety requires: [...]	<i>To remind that the safety remains the priority even at construction stage.</i>			X	The suggested addition is already implicit from the top tier documents of SF-1 and GS-R-3.
Canada 24	2.5/Last Line	With respect to "...an appropriate governmental infrastructure, including a regulatory body with well defined responsibilities and functions", add "It is the responsibility of the licensee to <u>identify and understand jurisdictional boundaries and responsibilities where there is more than one regulatory body governing an area (i.e., national and provincial governance over occupational health and safety; pressure boundaries; protection of the environment)</u> "	For improved clarity, as there may be more than one regulatory body governing construction activities (i.e., national, provincial, municipal regulatory agencies)		The suggestion is newly added between 2.6 and 2.7.		The suggestion can be independent recommendation of its own after 2.6 (after recommendations on required licence)
Finland 7	2.6	...The preliminary safety analysis report may include among other things information on site evaluation, the design basis, nuclear and radiation safety, deterministic analyses and complementary probabilistic safety assessment.	The list of PSAR is not complete.		The mentioned sentence is deleted.		The content of PSAR is irrelevant to this guide.

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France 9	2.6	Before construction starts, a preliminary safety analysis report should be <u>available to describe the nuclear installation and its safety features with key design characteristics updated as appropriate and authorized by the regulatory body.</u> The preliminary safety analysis report may include information on site evaluation, the design basis, nuclear and radiation safety, deterministic analyses and complementary probabilistic safety assessment.	The content of the PSAR is not the topic of this guide. What is interesting is the link between PSAR and construction.	X			
UAE 3	2.6	Add to the list of contents of the PSAR “a description of the management system and quality assurance programme that the applicant will implement, and the construction inspection programme and the initial test programme that the applicant proposes to demonstrate that the facility has been constructed in accordance with the approved design.	These elements are part of established guidance on SAR content eg IAEA GS-G-4.1 and USNRC Reg Guide 1.70. They are important matters to be reviewed before licensing of construction.		The list is deleted since it is not the objective of this guide. However, reference to GS-G-4.1 is added.		
Japan 4	2.6/5	The preliminary safety analysis report may include information on site evaluation, the design basis, nuclear and radiation safety, deterministic analyses and complementary probabilistic safety assessment.	It is not necessary to address the contents of the PSAR that are discussed in the relevant IAEA document.	X			
Ukraine 1	Para 2.6	The preliminary safety analysis report should include information on site evaluation, design basis, nuclear and radiation safety, deterministic analyses and complementary probabilistic safety assessment.	Because it is obligatory information at the stage before construction and modification.		The whole sentence is deleted.		The list of PSAR content is deleted since it is out of this Guide’s scope. Instead, a separate guide GS-G-4.1 “Format and Content of SAR” as a reference is added.

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Canada 26	2.8	The term "Adequate completion of design" appears vague and must be clarified to say something along the lines that <i>conceptual design of all major systems must be complete and detailed design of all safety systems must be complete.</i>	For improved clarity; Canada's position is that SSC technical specifications must be, at a minimum, at the procurement specification level of detail. Prior to construction, all safety related R&D must be complete.			X	Adequate level of design completion before the start of construction depends on each project so this is difficult to specify. In some cases, not all detailed designs of all safety systems are complete at the start of excavation on-site, for example. For this, each country's own judgement should be exercised for applicability of this recommendation.
Japan 5	2.8/6	Design changes <u>and late completion of design work</u> should be minimized after construction starts."	Construction stage is overlapping with Design stage. So, the risk is not coming only from "Design change" but also "Late completion of design work".	X			
France 11	2.9	<u>Well defined and, where necessary, qualified</u> Qualification of a methods of construction, transportation, inspection or testing should be <u>established</u> done before commencement of the activities, especially for a first-of-kind technology., <u>as more quality non-conformance and re-works are expected more likely to occur when new methodologies are applied for the first time.</u>	Not all methods need qualification...		2.9 <u>Development and qualification of a well-defined</u> methods of construction, transportation, inspection or testing <u>that is relevant to safety</u> should be done before commencement of the activities,...		

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Canada 27	2.9	This paragraph must be developed to describe how <i>potential non conformances and deviations ought to be minimized by planning ahead, doing sufficient RD, mock-ups etc.</i>	For improved clarity		Added: "Potential non-conformances and deviations should be minimized by early planning with adequate resource for qualification activities such as R&D activities or mock-up or full size verification tests."		Minor editorial modification to the suggestion.
UK10	2.11 List	Add: <ul style="list-style-type: none"> - Training of construction site personnel and joint exercises. - Provision of additional alarms 	New construction personnel need to be aware of the emergency arrangements too. I.e. the different alarms being used for nuclear event and undercover alarms. Also consideration should be given to operatives, such as the overhead crane driver, who may need to remain in his cabin for extended periods	X			
Canada 29	2.12 first sentence	After 'risk assessment' add ' and threat assessment '	A construction site presents additional security threats to an existing facility and vice versa.	X			

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Canada 30	2.12/ Line 5	Add dust control to list	For completeness		dust		The word “control” is not necessary since these are risks.
UK12	2.12 line 6	Add: piling	Likely operation	X			
Canada 33	2.14	Add an additional point between 2.14 and 2.15 <u>“Environmental monitoring and protection measures at the site should be in place to ensure adequate mitigation of potential environmental effects related to construction activities”</u>	For completeness		X		
UK13	2.14 End	Add at end: Details of these measures should be included in the emergency planning arrangements.		X			
France 14	2.15	Suppress bullets related to logistics and infrastructure.	These items are not directly related to safety.			X	Although some may seem indirect, experts have concluded that all these issues are very important to ensure quality (=safety) of new builds based on lessons learned.
USA 2	2.15 / line 10	ADD text after “Security aspects within and around the site” as follows: “such as physical barriers, posting, surveillance and monitoring capability, uniformed security personnel, communication capability, and control personnel access”	A physical barrier is installed to provide clear separation of the Construction Area from the surrounding area at the new reactor location. The barrier’s purpose is to clearly delineate the area for control of personnel and vehicles. Procedures		Added to and combined with the suggested paragraph and placed in the end of section 2 “Prerequisite for the construction of Nuclear Installations” for its emphasis Any further details should be referenced		

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
			<p>should provide a basic description of the barrier and the controls to access the Construction Area. Controls for the Construction Area may be accomplished via a physical barrier or through natural terrain that prevents personnel and vehicle access. The barrier(s) could include chain link fencing, buildings, walls, etc..</p> <p>Posting Information alerting the public to the site policy and legal restrictions on activities within the Construction Area and penalties for violation should be posted appropriately in conjunction with the establishment of physical barriers/boundary.</p> <p>Security Force</p>		to the IAEA Security Series as stated in the guide.		

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
			<p>Presence Uniformed physical security personnel should be present within the Construction Area to control access. Security personnel control the access of personnel, vehicles, and material to the Construction Area, perform observations and/or inspections of personnel, vehicles, and materials entering the Construction Area, provide surveillance of the Construction Area and adjacent areas for unauthorized personnel and activities or security events. Inspections (verifying paperwork, obtaining authorization, visual assessment of contents, etc) should be conducted to determine that any</p>				

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>material, vehicles, and activities observed are consistent with a legitimate purpose, and to identify unauthorized items that could adversely impact the construction of security-and safety-related SSCs to deter unauthorized acts.</p> <p>Surveillance and Monitoring Surveillance of the Construction Area for unauthorized activity Construction site procedures should describe surveillance method(s) utilized and what the surveillance will observe, e.g., location of explosives, entry points, etc...</p> <p>Communications and Interface with Local Law Enforcement In the event of</p>				

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>suspicious or unauthorized activity within the Construction Area, security personnel are expected to report such activity to Local Law Enforcement Agencies (LLEA).</p> <p>Communications with Operating Plant Licensee Staff (when applicable)</p> <p>A communications and interface plan should be developed that details methods of communication between the security and/or facility operations supervision for the Construction Area and Operations and Security staff of any operating reactor licensee.</p> <p>The communications plan should establish methods for</p>				

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>notification of the licensee for any potential hostile action and for emergency notification of construction personnel in the event of operating plant emergency conditions affecting construction site personnel.</p> <p>The plan also should ensure that communications in the Construction Area do not adversely impact the communication capability of operating plant personnel (security, operations, fire/emergencies, etc.) due to radio frequency interference on similar radio channels.</p>				

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 32	2.15/Line 15	Add an additional bullet - <u>Construction processes and equipment such as cranes, scaffolding, temporary structures, portable equipment, flammable equipment etc are all designed to withstand natural events such as earthquakes, floods, fires, heavy rains, snow, ice etc., during the construction phase (which can last over 5 to 7 years)</u>	For completeness	X			
UK14	2.15 list	Add Marking of nuclear licensed site boundary	Indication of requirement for nuclear procedures and controls.	X			
UK15	2.16	Add new para.: 2.16 In cases where construction is being resumed on a suspended project special consideration should be given to factors that may influence continued construction. Detailed guidance can be found in [**].	As this is a generic standard, there should be a short section cross referring to IAEA TECDOC 1110 "Management of delayed nuclear power plant projects". This previous guidance refers to management of suspended projects and the new standard should also include some guidance on resuming construction.	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
UK16	2.17	<p>Add new para.:</p> <p>2.17 Some activities, such as ground investigation, may be carried out before a nuclear licence has been granted. Arrangements should be put in place to ensure that, if the outputs of these activities are incorporated into the permanent works or can have an influence on them, any pre-licensing activities are planned, executed, monitored and documented to standards equivalent to activities carried out post-licensing.</p>	Underpinning of safety related activities	X			
UAE 4	Secti on 3	Describe more fully the meaning of “regulatory oversight”.	<p>According to the referenced IAEA guides a regulatory framework for safety comprises the following elements:</p> <p>1-Standard setting through regulations; 2--Authorizations through licensing; 3- Inspection and monitoring of compliance; 4- Enforcement.</p>		The following paras are added: 3.2 The regulatory oversight during construction refers to monitoring and observing directly of construction work practices, items, and equipment. It also includes inspection and assessment of safety related construction activities through such methods as: discussions and interviews with relevant personnel; examination of procedures, records and documentation;		The noted elements of (1) standard setting through regulations and (2) authorizations through licensing should have been finished as pre-requisites for construction. The meaning of regulatory oversight is most suitable for (3) Inspection and monitoring of compliance. Therefore this is added as a new paragraph. (4) is considered not part of oversight as GS-R part 1 para.2.9(b) suggests.

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
					<p>and measurements and tests.</p> <p>3.3 The regulatory oversight should satisfy regulatory body that the licensee is in compliance with the conditions set out, for example, in the authorization or regulations. In addition, the regulatory oversight should also take into account, as necessary, the activities of contractors of services and products to the licensee. The regulatory oversight should not relieve the licensee or contractor(s) of its responsibility for ensuring safety.</p>		

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UAE 5	Para 3.2.-3.5	Add more explicit reference to implementation of a regulatory inspection programme for oversight of the activities of a licensee after review and assessment of the application and granting of a licence.	According to GS-G-1.3 inspection is an important activity by which the regulatory body verifies that the licensee is conducting its activities safely and in compliance with the conditions of the licence. However section 3 mentions the word "inspection" only once in para 3.3.	X			A new paragraph (3.2) describes briefly the inspection activities through discussion, interviews, examinations of procedures, etc.
France 15	3.6		Deletion of 3.6 should be considered This section deals more with the assessment of the design than with manufacturing/construction oversight. However, it is true that new information may have design implications, so having consequences on construction...			X	As mentioned in the comment, new design information during construction should still be reviewed during construction since they may have regulatory implications to the on-going construction. The issue of feedbacks between construction and design is very relevant to construction and should not be separated completely.
France 16	3.6	- on a systematic basis, the development of the <u>detailed</u> design of the nuclear installation as demonstrated in the safety documentation submitted by the applicant or licensee;	The general design should be established before the construction starts.	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 17	3.6	the progress of research and development programmes relating to demonstration of the design, if applicable; and	The detailed design (following the construction authorization) should not depend upon research and development programs.			X	R&D may continue, for instance, on construction method or inspection method which may have impact on design.
France 18	3.6	Add a new second bullet: “- if the documents related to the detailed design is made available to the construction organization so that it has enough time to prepare and manage the construction properly”.	As the detailed design is being performed during the construction phase, a good sequence of activities is essential to ensure the quality of the construction.		-the availability of the documents related to the detailed design for the construction organization so that it has enough time to prepare and manage the construction properly;		Few editorial changes to the suggestion
ENISS 3	3.6	During <u>licensing phase</u> the Regulatory body should review and assess: - at identified hold points he development applicant or licensee; - the progress if applicable.	To be consistent with the principle of developing the design as far as possible before construction start.		-on a systematic basis, the development of the <u>remaining</u> design of the nuclear installation as demonstrated in the safety documentation submitted by the applicant or licensee;		Licensing phase is not really the scope of DS441 so it should not be used. “Remaining” is added to the word “design” to make it more understandable with the principle that the design should be complete as far as possible before construction starts.
Egypt 2	3.6	Ensure that all structure, systems and components are installed properly and as in the design	I suggest to added this item to para 3.6			X	It is too strong to say that the regulatory body ensures ALL SSCs are installed properly. This is the responsibility of the licensee

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Ukraine 2	3.6	To add a new bullet: - How design /design issues changes due to results of construction and/or maintenance			New additional bullet: - how proposed arrangements, procedures and quality assurance programmes for implementing or <u>modifying the design</u> is carried out under a proper management system;		More additional information and clarification.
France 20	3.7	The hold or witness points should be carefully selected to assure : - <u>enable</u> observability or testability especially before irreversible steps are made; - <u>check</u> construction organization preparedness for next stage.	“assure” is too strong	X			
UK19	3.7 Line 3	...witness points such as excavation to rock head or formation level, first concrete...	Key point	X			
Canada 37	Section 4 title	Reword title to “ Licensee Management System for Construction of a Nuclear Installation	To be consistent with messaging in remainder of document that the licensee is ultimately accountable for the construction activities. Thus, the management system of construction should be ‘owned’ by the licensee.			X	It is true that the remainder of the document mainly describes responsibility for the licensee but there are some guidance directed to construction organization.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
UK21	4.2 line 3	...commissioning, operational and decommissioning phases...	Important phase	X			
Japan 6	4.2/3	This involves an understanding Personnel should <u>recognize</u> that deviations from procedures and specification, or failure to understand the safety significance of structures, systems and components may have <u>lead to</u> unforeseen consequence in the future.	to give strong message			X	A following guidance exist already: 4.3 (last sentence) "Application of safety culture attributes should be implemented in <u>all participating organizations and individuals.</u> " 4.6 "The licensee should ensure all contractors and subcontractors in the supply chain or involved in surveillance activities are <u>fully aware of the safety significance of what they have been contracted to supply.</u> "
EC 2	4.5	To be inserted in the first sentence of 4.5: The licensee should ensure all contractors and subcontractors in the supply chain <u>or involved in surveillance activities</u> are fully aware (...)	<i>The term "supply chain" may be understood with a restrictive meaning. It should be made more explicit that contractors may provide other products than equipment or works.</i>	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
EC 3	4.5	To be inserted after the first sentence of 4.5: This safety awareness should be ensured not only for 'complicated' works like welding but even for 'more simple' tasks like anchoring or cable sheathing, especially since some sub-contractors may not have any experience of working for the nuclear industry.	<i>This is not obvious: In the past in many cases those activities were not identified as important for safety because all the attention was paid to complex tasks.</i>		This safety awareness should be ensured for all tasks including common construction works such as anchoring or cable sheathing since contractors may not have experience of working for the nuclear industry.		Editorial change
UK24	4.5-4.6	Add new para.: "The licensee must have adequate control and oversight of the supply chain and have robust systems and procedures in place to monitor this."	Control issue	X			
Japan 7	4.7/1	To support the safety culture principles, there should be a process for reporting concerns directly to management and <u>to the regulatory body according to their significance.</u>	Report to the regulatory body should be limited according to their significance.		To support the safety culture principles, there should be a process for reporting <u>safety</u> concerns directly to management and to the regulatory body.		Fewer words with same effect.
Finland 8	4.8	The intention of the requirement should be opened.	general		management <u>system</u> requirements		It is management system requirements, not management requirements.(see paras 2.6 and 2.7 of GS-R-3)

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
Sweden 3	4.9	Add a new bullet "Safety significance of different parts or items"			Newly added: "A graded approach based on the relative importance to safety of each item, service or process should be used. The graded approach should reflect a planned and recognized difference in the application of specific quality assurance requirements."		The suggested addition is added as par.4.8
Finland 9	4.9	The interface between construction and design should be made clear. Many of the presented issues to apply graded approach belong to the design phase.	general			X	Similar to commissioning, design and construction stages overlap significantly at the installation level and there will be a constant interface with design throughout construction as they are closely interacting to each other. So during construction, their interface is best described on activity basis wherever there is relevance. The graded approach described in DS441 is only applicable to construction relevant activities.

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Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK26	4.9 (a)	Add new: (a) The importance of the activity to nuclear safety	Overriding consideration		A new paragraph is added: 4.9 A graded approach based on the relative importance to safety of each item, service or process should be used during all construction activities. The graded approach should reflect a planned and recognized difference in the application of specific quality assurance requirements.		More emphasis on safety by having this paragraph first.
France 22	4.9 (c)	Replace (c) by “(c) The safety significance of equipment, materials, procedures, records and other documents”.	Too detailed at this stage. The requirement on traceability is covered by paragraph 4.24.	X			The original (c) is moved to the section on traceability.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
UK27	4.10-4..14	<p>This comment could be applied to the proposed section or at some other point in the text.</p> <p>Throughout any contracting process, the licensee must retain ultimate responsibility for the quality of work performed, whether by its staff or by contractors, and for maintaining the safety of the licensed facility. Effective oversight by the licensee must ensure that the quality of products and services from its contractors, and any chain of subcontractors, is commensurate with their safety significance. The licensee’s oversight must ensure compliance with applicable codes, standards and regulatory requirements. In order to do this, the licensee must retain sufficient core capabilities to;</p> <ul style="list-style-type: none"> • be an “intelligent customer” in its contracting process and oversight; • have a robust management system to ensure the required quality; • be the “controlling mind” for all activities; • maintain and take ownership at the appropriate time of its safety case • be the “design authority for the facility. 	<p>Suggest shorter sharper statement.</p> <p>Project Owner Obligations - Maintenance of Nuclear Safety and Project Quality.</p>			X	<p>It is better to start the section with the overarching requirement from Ref [5], and develop these issues as shown. Suggested issues are all prevalent in 4.10-4.13 and the current structure is considered quite succinct already.</p> <p>The following suggested bullet cannot be accepted:</p> <p>-be the controlling mind (this is not widely understood so need some explanation)</p> <p>The bullet about design authority is covered in 4.44:</p> <p>Otherwise, all other issues are covered adequately in 4.10-4.14.</p>

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 38	4.11/Line 1	Modify to include " <u>all applicable legal and regulatory requirements</u> "	Where multiple jurisdictions and requirements exist, requirements, standards may not be aligned in all cases.		Following footnote will be added: "Where multiple jurisdictions and requirements exist, requirements or standards may not be aligned in all cases. In this case, all <i>applicable</i> legal and regulatory requirements should be met,"		Footnote is used to note a special exception of the case so that the point of meeting all "necessary" legal and regulatory requirements by the licensee is emphasized in the main text.
France 23	4.13/last bullet	- Preparing the commissioning programme, <u>taking into account tests performed during construction;</u>	To make a clearer link between commissioning tests and tests performed before	X			
Canada 40	4.14	This section calls for the Construction Manager to be appointed from the Owner's organization to be responsible for construction activities. This may not always be necessary or practical. <i>Instead, the wording should reflect that the Owner is responsible for the safe construction of the plant and must have an oversight role and an appointee to ensure that construction proceeds per requirements.</i>	Workability			X	It is not talking necessarily about the owner of the installation. The licensee should appoint one single manager to be responsible so that the line of responsibility is very clear. The suggested notion about responsibility for safety construction and oversight role is prevalent throughout the guide. In addition, owner could mean mere stockholders in today's financial framework which has no responsibility for safety.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 27	4.16 (c) (d)	(c) Identification of generic construction activities, develop and maintain guides (d) Preparing safety related working procedures, including industrial safety procedures, to issue to the personnel of both the construction organization and the contractors, and establishing that both the construction organization and the contractors' industrial safety arrangements on the construction site comply with the applicable requirements;	These items are already covered by (b)			X	(b) is about general information and instruction for settlement at the site. (c) and (d) refer to construction activities which provide 2 different issues. (c) is a higher level "guide" on how to use instructions, procedures and best practices. (d) is a lower level documents of "procedures."
France 28	4.16 (e)	(e) Monitoring the industrial <u>and nuclear</u> safety policies and activities of all personnel on the construction site to ensure compliance with statutory and regulatory requirements with regards to quality and safety;	Some of the construction activities are performed off-site		(e) Monitoring the <u>nuclear and industrial</u> safety policies and activities of all personnel to ensure compliance with statutory and regulatory requirements with regards to quality and safety		Editorial change

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
France 29	4.16 (g)	(g) Ensuring that <u>construction contractors' work, including when performed by contractors,</u> is carried out in accordance with procedures, specifications and drawings, that <u>nuclear safety and quality requirements</u> are specified and implemented and that inspections and tests at the suppliers' facilities <u>or construction site</u> are appropriate and in accordance with inspection and test plans and associated	Why limiting this to contractors as the construction organization may also perform work.... Inspections and tests are also to be performed on-site...		(g) Ensuring that work <u>by construction organization and contractors</u> is carried out in accordance with procedures, specifications and drawings, that <u>safety and quality requirements</u> are specified and implemented and that inspections and tests, <u>including those at the suppliers' facilities,</u> are appropriate and in accordance with inspection and test plans and associated surveillance schedules;		Few editorial changes.
France 31	4.16(j)	(j) Carrying out inaugural inspection for systems or components and obtaining relevant baseline data for comparative purposes in in-service inspection;	Already covered by (g) as modified. See also 4.24 (e)			X	The important issue of inaugural inspection and obtaining baseline data, which may not be the same content, should be emphasized.
Canada 42	4.16/ last line	Add item (o): <u>Through auditing of procedures and surveillance of work activities, ensuring that adequate documentation is being produced to demonstrate such things as due diligence, compliance and corrective actions.</u>	For completeness	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 35	4.21	A system should be established to ensure that applicable inputs such as legal, regulatory and licensee requirements, <u>and more generally safety and quality requirements</u> , are correctly translated into specifications, drawings, procedures and instructions.	To emphasize on safety and quality		A system should be established to ensure that applicable inputs such as legal, regulatory and licensee requirements <u>for ensuring safety and quality</u> are correctly translated into specifications, drawings, procedures and instructions.		Quality and safety requirements are integrated into legal, regulatory and licensee requirements.
EC 4	4.21 and 4.22	To be inserted between paragraphs 4.21 and 4.22: Every call for tender about safety-related components should include and emphasize the specific nuclear requirements and local nuclear regulations particularly as regards quality management and safety culture. Compliance with those requirements should be properly checked at the stage of awarding contracts and until the work is fully implemented	<i>The specific requirements should be made clear as soon as possible, especially for companies which have no experience of the nuclear industry.</i>		The first sentence is modified and added as para. 5.9 in "Procurement specifications." The second sentence is modified and added to the suggested section. First sentence is modified as: "The procurement specifications relevant to items important to safety should emphasize the safety requirements including implementation of safety culture and quality management."		

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
					Second sentence is modified as: "Compliance with safety requirements including implementation of safety culture and quality management should be ensured for all relevant parties, including contractors from the stage of awarding contracts to the work completion."		
UK?? (no number)	4.23	Add at end: Reliance should not be placed on just quoting codes and standards.	Interpretation for the particular circumstances may be required.	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 24	4.24 (b)	Manufacturing and assembling details;	Need explanation of intention of the wordings.		The licensee should be able to trace these details for safety significant items so that information on the items can traced back for problems, modification, maintenance, etc. The information such as the name of the manufacturer or assembler, how and where it was made with what material and with what requirements and codes and standards, etc. are critical.		This explanation is not considered necessary in the document.
UK33	4.25	Add at end: Construction records can be of great importance during the decommissioning of nuclear facilities.	Not just commissioning and operation.		Modified the second sentence as follows: "This information will facilitate the planning of work in these areas during commissioning, operation <u>and decommissioning.</u> "		Fewer words with same effect.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 51	4.29/Line 2	Clarify “for transfer of responsibility and working”.	Please clarify meaning of this sentence. The sentence as-written is incomplete. Perhaps the word ‘areas’ is missing?		“Appropriate rules and procedures should be established and documented by the construction organization to control and coordinate the handover of completed works from one supplier to another in order to maintain the integrity of the completed works.”		Clarification of the sentence.
Canada 52	4.29	Add new sentence. <u>The rules and procedures should be approved by the licensee for use in the project.</u>	The current clause does not assign responsibility for approval of rules and procedures. As the licensee is accountable, the licensee should be the approving body. They do not need to approve each transfer on a case by case basis, but rather, this review can be delegated in the rules and procedures.	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
Japan 8	4.30/1	When items important to safety and working areas are to be transferred between groups within the construction organization, both concerned groups should make <u>it sure by such as confirmations inspections</u> together at the location in consideration .	Checking together is one of ways.		Modified to "...both concerned groups should make <u>a joint check</u> of the transferred items and the associated documents. Both parties should sign formally to indicate the transfer of responsibilities."		clarification
France 49	4.32 (c)	(c) Any <u>remaining</u> non-conformances or incomplete items should be identified, <u>the safety implications assessed and the issues resolved</u> ; and it should be ensured that the status of such items is clear and does not have the potential to affect safety during commissioning activities.	Safety assessment of non-conformance is required.		(c) Any remaining non-conformances or incomplete items should be identified and assessed to ensure there is no safety implication during commissioning activities.		More clarification on suggested modification.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
Canada 53	4.32 Title	Change to <u>Transfers from construction organization through commissioning organization to operating organization</u>	<p>Scope of this section is currently too narrow and should be expanded.</p> <p>Many systems in a nuclear facility are actually placed in service following commissioning and are accepted by the early operating organization. These systems actually operate in the latter stages of construction. Examples include HVAC, lighting, domestic water, in plant power systems etc. These systems are needed to commission and prepare other SSCs for future operation.</p>			X	<p>Transfer from commissioning to operating organization is out of this guide's scope since commissioning is not included. DS446 (commissioning of NPPs) covers transfer from commissioning to operation adequately and it should avoid any overlap.</p> <p>In order to understand more clearly, the construction and commissioning should be considered in SSC basis, not as a whole installation. This implies that the construction and operation can overlap, but the scope of this guide is looking at the level of SSCs going through construction stage until completion of pre-commissioning tests and the handover to commissioning.</p>

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 54	4.32 Sentence 1	Reword sentence to “The licensee should ensure that provisions are made to control and coordinate the handover <u>of ownership from the constructor to the commissioning teams and from the commissioning teams to the operator</u> ”				X	Transfer from commissioning to operating organization is out of this guide’s scope since commissioning is not included in this guide. DS446 (commissioning of NPPs) covers transfer from commissioning to operation adequately and it should avoid any overlap.
Canada 57	4.32/ last line	Add a bullet: <u>(g) The level of technical detail in transfer documentation should be sufficient to allow the recipient to identify parts and order replacements.</u>	To facilitate maintenance	X			
UK37	4.32 (g)	New para. (g) All information should be copied to the plant operators and other parties who will be responsible for ageing management at a later time.	Key information	X			
France 51	4.33	The licensee and construction organization, if necessary, <u>All parties involved</u> should ensure that sufficient suitably qualified and experienced people are available as required by the construction	Contractors are also concerned	X			
USA 3	4.33	(ADD) authorized and cleared personnel	Pre-Access Screening for Construction Workers Within The Construction Area The construction site entity should perform a check on all		The following sentence is added to para. 2.17: “Security measures employed should consider control of personnel, material, and vehicles; random patrols/inspections as		

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>potential Construction Area employees that includes:</p> <p>Verification of identity, through the compilation of information and other comparable data presented by the individual and reviewed by a reviewing official.</p> <p>Conducting a name search against terrorist databases and watchlist to ensure the individual is not a suspected terrorist.</p> <p>Conduct a check for outstanding warrants to ensure the individual is not wanted by law enforcement authorities for the suspected commission of a</p>		<p>defined in site security procedures; and <u>screening (pre-employment screening and gate clearance) for access to security and safety controlled areas.</u></p> <p>Any further details should be referenced to the IAEA Security Series as stated in the guide.</p>		

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
			<p>crime by performing a good faith effort to contact law enforcement authorities located in the area of the individual's permanent residence.</p> <p>These requirements are in addition to the pre-access drug and alcohol testing. The implementation process for access to security- and safety-related SSC-controlled areas to include the reviewing official process is outlined in the construction site security procedures</p>				
Sweden 4	4.35	Consider including that a (full scale?) simulator of the installations control room should be available for training purposes as soon as reasonably achievable.	A simulator is a good tool for the licensee personal who will operate the installation, when participating in the construction.			X	Suggested addition is out of scope for the training of operating personnel during construction. The training of operators is covered in NS-G-2.9 "Commissioning of NPPs." (Although it does not mention simulator, it should be reflected in this one than DS441)

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Sweden 5	4.36 & 4.37	The articles should be developed.	There are more important aspects to be mentioned.			X	The evaluation of contractors is well covered in GS-G-3.1 (Appendix III "Selection of Suppliers") as it is referenced appropriately.
France 53	4.36	The construction organization should be <u>is usually</u> responsible for contracting activities for construction. However and the licensee should be notified <u>of the contractors chosen to supply or manufacture items important to safety. Depending on the processes agreed between the licensee and the construction organization, licensee' s approval may be needed.</u>	The responsibilities of the construction organization vs the licensee are defined between them.		It is rewritten as: "Depending on each regulatory or contractual case, the construction organization is usually responsible for contracting activities for construction. As a minimum, the licensee should be notified <u>of the contractors chosen to supply or manufacture items important to safety, or to provide safety significant service. Depending on the agreement between the licensee and the construction organization, licensee's approval may be needed."</u>		Few additional words for better description.

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
ENISS4	4.36	The construction organization should be responsible for contacting activities for construction and the licensee should approve them.	To maintain the principle of the responsibility of the licensee.		“Depending on each regulatory or contractual case, the construction organization is usually responsible for contracting activities for construction. As a minimum, the licensee should be notified <u>of the _____ contractors chosen to supply or manufacture items important to safety, or to provide safety significant service. Depending on the agreement between the licensee and the construction organization, licensee’s approval may be needed.</u> ”		The responsibilities of the construction organization vs the licensee are defined between them.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
UAE 6	4.36- 4.38	<p>Edit the text to state that the licensee has primary responsibility for oversight of the contractors.</p> <p>It should also be stated here the licensee responsibility includes inspections tests and verification of manufacture and construction, which the regulator verifies but does not substitute for.</p>	<p>This is a fundamental safety principle and is stated correctly in 4.11 to 4.14. The latter paras are inconsistent with this. See also para 5.32</p>		<p>“Depending on each regulatory or contractual case, the construction organization is usually responsible for contracting activities for construction. As a minimum, the licensee should be notified <u>of the contractors chosen to supply or manufacture items important to safety, or to provide safety significant service. Depending on the agreement between the licensee and the construction organization, licensee’s approval may be needed.</u></p>		<p>The sentence is modified to make it more acceptable for each project case and to avoid confusion of responsibilities between construction organization and the licensee.</p> <p>The responsibilities of the construction organization vs the licensee are defined between them.</p> <p>The licensee’s responsibility for Inspections, test and verification is added to one of bullets in 4.13.</p>
Sweden 6	4.38	<p>Add the following bullets:</p> <ul style="list-style-type: none"> o Complexity of work and service o Type and needs of expert skills for carry out the work or service 		X			
Finland 10	4.38	<p>add. independent third party inspections</p>	<p>The special features of the third party inspections require attention.</p>		<p>The utilization of independent third party inspections</p>		<p>Clarification</p>

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
ENISS 6	4.38 second bullet	The experience of the contractor in relation to theprovided	Experience of licensee seems much less important			X	Experience makes the licensee an "intelligent customer." The licensee should clearly understand the product or service being supplied as para. 4.13 recommends. If this is not the case, the licensee should increase the level of contractor oversight to ensure that the product or provided service meets all requirements.
Canada 60	4.38	Add bullet: ' <u>security considerations</u> '	A low safety significance task could end up being a significant security risk if too little oversight is applied.		Add to the first bullet: "safety <u>and security</u> significance of the item or service."		
France 57	4.39	At the beginning of the first bullet list, add: (*) Applicable safety requirements for the item to be manufacture or built	Knowing the safety characteristics expected by the designers is a key requirement	X			
France 58	4.39 (c)	(c) Documents and information to be submitted, <u>including non-conformance reports and evidence that the as-built item meets the safety and quality requirements;</u>	Emphasises on non-conformances and as-built conditions	X			
France 59	4.42	Delete 4.42	Too much detailed.			X	This is considered a very good practice based on lessons learned.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Egypt 5	4.42	Construction organization should ensure that each contractor organizes daily.....	Contractors may be replaced by construction organization			X	In actual practice, a construction organization cannot <u>ensure ALL contractors</u> to have daily too-box meetings. This recommendation is best left for each contractor to hold the meetings.
UK46	4.42 Line 1	The construction organisation should ensure that...	Clarity			X	In actual practice, a construction organization cannot <u>ensure ALL contractors</u> to have (hundreds of) daily too-box meetings. This recommendation is best left for each contractor to hold the meetings.
UK47	4.42 End	The use of Safety Action Plans for daily changes to specific areas is also a good reminder to site personnel on entering particular areas.	Safety point			X	This is not included because:.(1)First need to define what the Safety Action Plans is, (2)It is getting too much into detail by doing this; (3)This is not a “should” statement so it is not really a recommendation.
UK49	4.45 End	Co-located offices can aid communication between designers and contractors.	Good practice			X	Good practice but this is too obvious and not necessarily a safety significant recommendation.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
EC 7	4.49 first sentence	To be inserted after first sentence of 4.49: This system should define non-conformance and specify the roles and responsibilities of the licensee, the vendor and the subcontractor for reporting and correcting non-conformances, as well as the regulatory approval process. Compliance with these requirements should be checked by the licensee and the regulator.	<i>A non-conformance in the nuclear field may not be a non-conformance for companies used to other fields (civil work for instance).</i>		This system should define non-conformance and specify the roles and responsibilities of the licensee, construction organization and contractors for reporting and correcting non-conformances. In addition, this system should incorporate the regulatory approval process for handling any non-conformance.		Editorial change for clarification
UK51	4.49 Last line	...are required to identify and report non-conformances.	Basic duty			X	Requiring EVERYONE at the construction site is too strong
France 65	4.55	The licensee should be pro-active in sharing and open in reporting safety relevant experiences internationally through appropriate databases.	Too much detailed	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK58	4.56	New para.: 4.56 The plant operator needs to address ageing management starting at the pre-operational stages of the life of the plant. This should include the potential implications of variations, concessions and non-conformances detected and corrected prior to plant operation. The plant supplier, design organizations, constructors and manufacturers may not be available for support at future stages of the plant lifecycle, and thus the transfer of knowledge and experience is important from the conceptual stage onwards [**].	The IAEA has identified under IAEA Safety Reports Series No. 62 "Proactive Management of Ageing for Nuclear Power Plants" that, as relevant good practice, the plant operator needs to address ageing management even at the pre-operational stages. This should include the potential implications of variations, concessions and non-conformances detected and corrected prior to plant operation.			X	Paras 4.18(k), 4.16, and other additional recommendations already give guides to maintenance of ageing management related records such as baseline data, construction records. The suggested paragraph is overlapping with already given guides.
UAE 7	Section 5	Combine with section 4.	As it is section 5 covers similar ground to section 4 by discussing some of the standard elements of a QA program.		For now, these sections will remain as it is. But the comment is noted and will be kept for future possibility to combine them.		Section 5 is separated to focus more on the management of actual construction work (manufacturing, assembling, installation, etc.) on-site or at off-site. It is more field-oriented, hands-on guidance. This distinction may help readers to easily separate the issues.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Finland 11	5.	<p>The issues that could be elaborated more are.</p> <ul style="list-style-type: none"> • roles of different organizations • the onsite lifecycle phases (phases during construction such as manufacturing, assembling, installation, testing, etc.) of components, structures and systems 			<p>(first bullet): various TSOs and third party may be enhanced as DS429 is developed and referenced.</p> <p>(Second bullet): no elaboration on these phases as of now.</p>		<p>(first bullet): The current description of responsibilities of different organizations (regulatory body, licensee, & contractors) is quite sufficient and practical for its wide application but TSO and third party surveillance should be referenced to DS429 or enhance in the future while maintaining consistency.</p> <p>(Second bullet): There are adequate safety significant recommendations for each of these phases. If SSC phases during construction are to be elaborated, this may require significant re-structuring of the Guide. The current structure is relatively consistent with GS-R-3.</p>
UK89	Section 5	Arrangements should be put in place for third party surveillance inspection of the contractor's materials testing. This is particularly relevant to concrete mix trials and concrete quality control testing.	To promote good practice in provision of appropriate technical surveillance on adequacy of testing for materials manufactured on site.		To be discussed and worked on.		DS429 should be the main source for this. DS441 should make a reference in the future and maintain consistency with DS429.
UK90	Section 5	Special attention should be paid to arrangements for inspection and testing to verify adequacy of foundation formations prior to placing of blinding.	To promote good practice in provision of appropriate control the process for verification of adequate formations.			X	We tried before to include this but this was determined to be too detailed for this guide. If we go into this level of details, there are many other recommendations in the other technical fields.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
UK91	Secti on 5	<p>As part of a graded approach to construction oversight, particular importance should be attached to the design, construction, testing, commissioning and operation of special civil structures. Where 'special' in this context means those complex structures which are required to achieve a high level of safety performance.</p> <p>Such special structures may be considered to be reactor containment structures but may also include other complex structures such as fuel pools.</p>	Proposed expansion of scope to deal with special civil structures.			X	Ditto.
Japan 1	Secti on 5 General	<p>The following two aspects that are characteristics of construction should be newly developed.</p> <ol style="list-style-type: none"> 1. Washing Pipes and pipe systems washing after completion of construction 2. Packing before transportation 	NQA-1 Part II could be referred in developing this part.		For (1) washing: The following para. Is added to the section on Cleanness and Foreign Material Control (section 5): "Specific procedure should be developed and implemented for cleaning by flushing or rinsing. The procedure should include: checking of actual circulating flow path to satisfy specified requirements with regards to location, position, and status of all components;		

Comments Category : Technical Accuracy/Completeness

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
					<p>Tagging of critical components to prevent inadvertent actuation; Inspection of the interior of all accessible components and piping for cleanness; and isolation or protection of any components such as demineralizers, filters, instruments and any other components which may be damaged by cleaning; and sealing of the cleaned system after finished.”</p> <p>For (2) packing: Following recommendations are added as 5.41 and 5.24: 5.41(new) During the planning phase for manufacture and assembling, consideration should be given to such factors as: (f) Handling,</p>		

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
					storing, <u>packaging</u> and delivery requirements Control of items and consumables 5.24 Items and consumables should be controlled from through <u>packaging</u> , shipping, handling, receipt and storage at any location, including off-site manufacturing facilities, receipt through storage, handling and use, to prevent their abuse, misuse, damage, deterioration or loss of identification.		
France 66	5.1	- The activities to be performed, including verification and validation for integrated digital I&C system, environmental and seismic qualification of items important to safety, in manageable units;	Why focusing on digital I&C, environmental qualification.... ?		-The activities to be performed in manageable units. Complex activities such as verification and validation of integrated digital I&C system or environmental and seismic qualification of items important to safety should be planned carefully;		These are emphasized because they will take significant time as these are ever-changing technologies.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK59	5.2 End	Add at end: The construction programme should be fully integrated with a procurement programme highlighting long lead-in items.	Key point	X			
Canada 65	Add new para. after 5.2	<u>The regulatory bodies involved should be given regular and timely updates of the construction schedule.</u>	Necessary for licensee oversight activities.	X			
UK62	5.6 End	Add at end: There should be regular meetings at which the contractor's methods and method statements are discussed with the design team. There is the potential for the contractor's methods to undermine design assumptions. Conversely, early contractor involvement can assist the designer in the appreciation of the contractor's preferred method of construction and thus improve buildability.	Key point	X			
UK63	5.7 End	Add at end: Special consideration should be given to the form of cast-in items and plant fixings. Post-drilling of concrete for the installation of plant fixings may be unacceptable and undermine the nuclear safety case.	Nuclear safety.	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Sweden 8	5.8-5.10	Either the text needs to be extended with other important aspects, or there has to be references to other IAEA documents that provide more guidance. Compare with previous Q6.	The articles are very important and the text has to be expanded			X	Reference is already given in para. 1.1 which includes GS-G-3.1. GS-G-3.1 paras 5.50-5.51 and Appendix III covers procurement sufficiently. We don't make specific reference here to maintain consistency with other issues.
France 71	5.8	Procurement specifications should be developed to ensure that items important to safety will be provided in such a way that they can ensure the achievement of the design specifications and required level of safety including the generic guides developed by the construction organization.	To be consistent with deletion in 4.16	X			Although 4.16 is not deleted, suggested deletion is accepted because it seems out of place.
Canada 68	5.10	New bullet – Bill of Materials	For completeness	X			
France 74	5.12	Contractors should obtain approval of the licensee and/or construction organization before beginning work and ensure they have the relevant information including work schedule	Depends on the agreement between the licensee and the construction organisation...	X			
France 75	5.13	The licensee should ensure that documentation to be used for construction activities is up to date, including latest design information, drawings and work procedures, and is in accordance with the approved design. The licensee should ensure that documentation to be used for construction activities <u>is should be consistent with the current design and the nuclear installation licensing safety case.</u> up to date, including latest design information, drawings and work procedures, and is in accordance with the approved design.	More general but give emphasis on the licensing basis.		The documentation to be used for construction activities should be up to date, including latest design information, drawings and work procedures. These documents should also be consistent with licensing basis.		Editorial improvement

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
Canada 69	5.14	New item below 5.14 (part of Prerequisites for construction works) Add <u>“The licensee should have in place emergency planning and emergency measures to ensure worker and public safety in the case of an on-site or external event that may occur during construction.”</u>	This is missing from the document and is a very important aspect of a construction project. (particularly following the Fukushima accident)	X			
UK72	5.18 List	Add at end: (e) Contingency plans	Important point	X			
EC 8	First sent ence of 5.19	Items and consumable should be controlled from storage at the manufacturer site through packaging, shipping, handling, receipt and storage at the construction site.	<i>The paragraph 5.19 is included in the section “receipt, handling, transport, storage, preservation and maintenance” of the chapter “general considerations” and the requirements should not be limited to the construction site only.</i>		Items and consumables should be controlled through packaging, shipping, handling, receipt and storage at any location, including off-site manufacturing facilities, to prevent their abuse, misuse, damage, deterioration or loss of identification..		Editorial change for clarification.
Canada 70	after 5.19	New item below 5.19 (part of Receipt, handling etc.) Add <u>“Items and consumables that could represent a security threat if misused should be controlled according to the level of risk possible”</u>	Particularly important in the area of software, chemicals, explosives etc. Item 5.19 is not clear enough in this respect.	X			
France 77	5.20	Delete 5.20	Duplicates 5.19	X			

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
EC 9	5.21	To be inserted at the end of the 5.21 Handling devices should be included in the scope of the supervision performed by the construction organization.	<i>For safety and security synergy.</i>	X			
Finland 12	5.24	Consider to add "radiation protection" to the list.	NDC sensors containing a radiation source might be used in the construction area.	X			
France 78	5.24	Storage areas should be established and controlled by the construction organization,	Contractors and licensee should also be involved. Duplicates 5.25	X			
Finland 13	5.26	Consider also marking the storages telling about the items stored.	If storage contains NDC sensors it should be marked to inform about this.		(i) Radiation protection from any sources and their appropriate markings.		

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
EC. 10	5.36 and 5.37	To be inserted between 5.36 and 5.37: Technological expertise of the manufacturer should be proven and verified by the licensee, not only through final acceptance tests but also by checking that proven state-of-the-art technology is used. An augmented regulatory approach and inspections should verify that new manufacturing techniques and new types of equipment meet the specifications set by the designer.	<i>The necessary technology is not always properly known or used by the manufacturer (example: large components of the Reactor Coolant System)</i>		Technological expertise of the manufacturer should be by the licensee, not only through final acceptance tests but also by checking that proven state-of-the-art technology is used. An augmented monitoring or inspections, if needed, should verify that new manufacturing techniques and new types of equipment meet <u>relevant design requirements</u> .		Editorial change
France 81	5.37	All items important to safety should be inspected and tested by the manufacturers against applicable codes and standards <u>and including design (including safety) standards requirements</u> .	Give a broader scope		All items important to safety should be inspected and tested by the manufacturers against safety and design requirements and applicable codes and standards.		Editorial change
UK79	5.37 End	Add at end: If necessary, factory simulation and soak testing should be performed on safety critical items, such as C,E and I, including both hardware and software.	Key point			X	Proposed addition is getting too detailed as there are other critical factory tests besides I&C simulation and soak tests.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
UK80	5.38 End	Add at end: The level of traceability for individual component or batch identification should be highlighted in the inspection and test plan for SSCs of safety significance.	Key point		The following is added to 5.37: "The level of traceability for individual component or batch identification should be highlighted in the inspection and test plan for items important to safety."		5.37 is more appropriate than 5.38.
EC 11	After 5.39	To be inserted after 5.39 (in section "Manufacturing and process": Special attention should be paid to the purchasing of commercial-grade components for safety-related equipment by the equipment manufacturer. The purchased parts should be properly documented and controlled by the manufacturer.	<i>For better clarity.</i>		Special attention should be paid to the procurement of commercial grade component or product that is proposed to be a part of any safety function. The suitability of the product or component should be verified as described in Ref. [3].		The suggested recommendation is already covered in Ref. [3], GS-G-3.5, paras 3.5-3.7. But the proposed paragraph is added to the section titled "Procurement specification" as last guide in its section.
Canada 74	5.43 last sentence	Add the following to the end of/following the last sentence: <u>"However, the licensee should ensure that the ability of the existing operating organization to maintain safe operation of the existing facility will not be affected by construction activities."</u>	"Communications" should not distract staff of the operating facility.		The licensee should ensure that the ability of the existing operating organization to maintain safe operation of the existing facility will not be affected by construction activities.		"However" is not necessary.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
EC 12	5.42/ last sentence	To be inserted before the last sentence of 5.42: For instance, the consequences of potential contamination from a construction site for operating units should be assessed and if needed, the contamination should be monitored. All other potential risks should be assessed (digging, excavation, spurious fall of cranes, use of explosives, etc.).	<i>For better clarity</i>	X			"
UK86	5.42 End	Due account should be taken of particular construction hazards such as the collapse envelopes and boundaries of tower and crawler cranes.	Important point		Following is added to 5.42: "For instance, the consequences of potential contamination from a construction site to operating units should be assessed and its contamination should be monitored, if necessary. All other potential risks should also be assessed (digging, excavation, spurious <u>fall of cranes</u> , <u>collapsing of items</u> , use of explosives, etc.)."		Summary of all comments received.

Comments Category : Technical Accuracy/Completeness							
Comment No.	Para/L ine No.	Proposed new text	Reason	Acce pted	Accepted, but modified as follows	Reje cted	Reason for modification/rejection
EC 14	5.46	To be inserted after 5.46: Temporary devices used at the manufacturing, construction and commissioning stages should be properly documented in order to ensure that all the temporary devices are removed after their use.	<i>This kind of recommendation is more specific than the others but is still related to management issues and it could fit the scope of the safety guide.</i>		Temporary devices used during the manufacturing, installation, inspection, testing should be controlled and documented.		Temporary device can stay for long time even after commissioning as long as not causing any safety problem, but they should still be controlled.
EC 15	5.46	To be inserted after 5.46:The labelling of components should be in place as soon as the components are installed.	<i>See comment 14.</i>			X	Para. 5.26 covers the issue adequately. (labeling ALL components would be too much)
EC 16	5.46	To be inserted after 5.46: Special attention should be paid to the risk of fire during construction and commissioning, as the fire protection may not be fully installed at those stages and as construction works can generate dirt and heat.	<i>See comment 14.</i>			X	Para. 2.14 covers the issue.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 1.	1.1/2	...this Safety Guide provides an appropriate...	For clarity, insert recommended word (shown in bold underline)	X			
Japan 11	1.1 line 3	The fundamental goal of construction is to correctly build an approved design. In order to accomplish this, this Safety Guide provides appropriate management process which focuses on various aspects of construction activities and supplements the requirement recommendation and guidance provided by The Management System for Facilities and Activities [1], ...	Editorial		..the requirement, recommendation and guidance...		Requirements are provided in the IAEA Safety Requirements and recommendation and guidance are provided in the Safety Guides.
Canada 2	1.1/L ine 4	...and guidance provided by: The Management...	For improved clarity	X			
Canada 3	1.1/4 1.1/5 1.1/6	...and Activities [1]; Application... ...and Activities [2]; and, The Management... ...Installations [3], on ...	For improved clarity	X			
Canada 4	1.1/7	...accordance with a management...	For improved clarity	X			
Canada 5	1.2/2	...to both the construction of new nuclear installations and the modification of existing...	For improved clarity	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 2	1.2	Nuclear installations vary greatly in type, size, utilization and other characteristics so that judgement has to be exercised on the measure of applicability <u>the following recommendations</u> to a specific installation.	Clarification		Nuclear installations vary greatly in type, size, utilization and other characteristics so that judgement has to be exercised on the measure of the following recommendations' applicability to a specific installation.		Editorial correction
Japan 2	1.2/1 and 1.7/1	1.2; This safety guide is broadly applicable to nuclear installations and is intended for application to both the construction of new and the modification of existing nuclear installations. 1.7; This Safety Guide identifies and explains safety significant construction activities which should be considered, checked and reviewed for ensuring quality of a new nuclear installation.	The application of this guide should be consistent between Para. 1.2 and Para.1.7. This safety guide is broadly applicable to nuclear installations and is intended for application to both the construction of new and the modification of existing nuclear installations. "to both the construction of new and the modification of existing nuclear		1.7 is modified as: "This Safety Guide identifies and explains safety significant construction activities which should be considered, checked and reviewed <u>from the perspective of management system</u> for ensuring quality of a new <u>or modified</u> nuclear installation."		Previous 1.7 was not correct in a sense that this guide is not giving recommendations with regards to ALL construction activities. The Guide is more limited to Management System related issues.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<i>installations</i> is preferable. Editorial correction				
Japan 3	1.2/3	Nuclear installations vary greatly in type, size, utilization and other characteristics so that judgment has to be exercised on the measure of applicability to a specific installation.	The message of this sentence is not clear. Need explanation of Objective of "judgment" as well as the intention of this sentence.			X	This is the statement recognizing that some parts of the Safety Guide may not be applicable or may need some judgement in their interpretation to be applied for a specific installation such as fuel fabrication/reprocessing plant, innovative reactors, etc. Similar statement can be found in many other IAEA Safety Standards such as NS-R-1, NS-G-1.10, NS-G-1.12, etc.
Canada 6	1.3/L ine 8	...the design and commissioning are fully compliant...	Replace 'is' with 'are' for verb agreement	X			
Japan 12	1.3/9	It is recognized that even if the design and commissioning is fully compliant with all of the above requirements, a high level of safety can only be achieved <u>when</u> if the construction is carried out with high quality and care, since commissioning cannot test all aspects.	Editorial	X			
Canada 7	1.3/L ine 10	...since commissioning cannot test all aspects of the design .	For improved clarity	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 8	1.3/Last line	...although no nuclear material during the construction may be present during construction.	Move phrase for clarity	X			
UK92	1.3 end	...material may be present during construction.	Neater wording	X			
Canada 9	1.4/Line 2	The use of contracted services tends to be increased by: a lower Less availability of nuclear expertise; the expansion of the international supply chain; the first-of-a-kind project; and, turn-key projects tend to increase the use of contracted services.	For improved clarity and ease of understanding		Move this par to between 4.37 and 4.38		The paragraph does not seem to fit well for the section on definition of contractors.
Canada 11	1.5/Line 3	Replace "with high quality" by in conformance with requirements.	What does high quality mean?			X	High quality here is suggested and implicit from the following statement that follows in 1.5: "...consistent with applicable codes, standards, and design requirements as part of the demonstration that the product can be commissioning and is capable of operating safety and reliable over its lifetime."
Canada 12	1.6/Line 1	This Safety Guide is applicable to the construction stage of a new nuclear installation and the modification of an existing nuclear installation, including the process of manufacturing...	For consistency with para 1.2	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UAE 2	1.6	Insert “and modifications” after the words “...construction stage”	Para 1.2 states that this document is applicable to both construction and modification, however modification is not mentioned in either the Objective or Scope.	X			
Canada 13	1.6/L ine 4	...performing the associated tests. The design and or commissioning stages are is not included...	Typo		Neither the design nor commissioning stage is not included in this Safety Guide,		Editing
France 3	1.7	This Safety Guide identifies and explains safety significant construction activities which should be considered, checked and reviewed for ensuring quality of a new nuclear installation <u>or of a modified installation.</u>	Consistency with 1.2		Modified as: “This Safety Guide identifies and explains safety significant construction activities		Editing
Canada 14	1.7/L ine 2	...for ensuring quality of a new or modified nuclear installation.	For consistency with para 1.2		which should be considered, checked and reviewed from the perspective of management system for ensuring quality of a new or modified nuclear installation.” ditto		Editing

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 15	1.8/First bullet, Line 3	"...design safety intent" should read <u>design and safety intent</u>	For improved clarity	X			
Canada 16	1.8/Last bullet, Line 1	- To assist licensee and construction organizations in understanding...	Typo			X	Restricted to one organization to avoid confusion
Canada 18	1.11/Last line	...focusing on actual construction works <u>on-site and at off-site locations</u> at off-site and on-site.	For improved clarity	X			
Egypt 1	2.1/2	..., the carrying out of civil , Mechanical; and Electrical works	construction includes all engineering works such as civil , mechanical; and electrical,...etc			X	This is just a word-to-word definition of construction from the IAEA Safety Glossary and any new or different wording is not recommended for maintaining consistency.
France 6	2.2	This construction organization should be established as is the sole entity managing, <u>at the nuclear installation level</u> , the construction activities of civil and architectural works,	Clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Korea 1	2.2/Line 5	Delete 'important to safety'	Not to limit the scope of test (and other construction activities)		This construction organization is the entity managing the construction activities of civil and architectural works, manufacturing, assembling, installation and testing of items important to safety at the level of the entire installation.		Modified for clarification. This statement actually limits the definition of construction organization doing any construction works relevant to safety. This is no problem because the scope of the IAEA Safety Standards is limited to nuclear safety in most cases.
Canada 20	2.2/Line 8	The responsibilities of the contractor(s) should be clearly defined and controlled, and <u>contractor governance and activities should be inspected by the licensee.</u>	For improved clarity	X			
Canada 22	2.3/Line 2	Add " <u>The word 'contractor' is an</u> an all-inclusive term used..."	For improved clarity		The term 'contractors' includes designers, manufacturers, producers, assemblers, installers, distributors, importers, sellers, suppliers, subcontractors, technical support organizations, consultants and their subsidiaries.		Enhanced for completeness.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 7	2.4	The construction should start only after the licensee has satisfied itself by means of verification that the main safety issues in the design have been resolved; and after and that relevant authorization have been issued. <u>If the construction starts before the regulatory body has satisfied itself, by means of review and assessment, of the adequacy of the safety analysis submitted, and the adequacy of the proposed arrangements, procedures and quality assurance programmes for implementing the design throughout construction, the licensee takes an industrial risk (i.e ; structures and equipment already constructed may not be adequate as build).</u>	Construction may start before the regulator review the whole safety case and licensee management program...		First modification is done as suggested; Last sentence is modified as follows: ...procedures and quality assurance programmes for implementing the design throughout construction, the licensee <u>bears the risk that the product may fail to meet necessary requirements.</u>		Editorial
France 8	2.5	The legal and governmental framework should be sufficiently implemented <u>adequate</u> for proper regulation during construction.	Clarification			X	The legal and governmental framework can be adequate on paper but does not mean it is sufficiently implemented.
Canada 23	2.5/L ine 1	Achieving the The highest level of safety that can be achieved in the construction of nuclear installations <u>requires: a sound legal basis; a..."</u>	Typo and for clarity		The highest level of safety that can be achieved in the construction of nuclear installations requires:		Minor editorial correction to the suggested phrase.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK02	2.5 line 2	“ qualified and experienced”	There is no mention of experience . To be suitably qualified and experienced one has to be both qualified and experienced.	X			
Canada 25	2.6/L ine 1	All applicable licences, permits and approvals required to initiate construction activities should be in place.	For improved clarity, as there may be more than one regulatory body governing construction activities (i.e. national, provincial, municipal regulatory agencies)	X			
UK03	2.6 line 4	“preliminary safety analysis report (preconstruction safety report)”	clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK04	2.7 (all)	Developing and maintaining an appropriate safety culture is a priority for nuclear site licensees. It underpins the way in which their organisations are designed and managed. This should be reflected in the leadership, procedures and behaviours which place an overriding priority on safety. All efforts should be made to encourage a nuclear safety culture in order to ensure that an adequate level of safety consciousness and acceptance of personal responsibility for safety are achieved by all parties. This includes licensee, regulatory body, contractors and their supply chains and other stakeholders. Not all contractors will have been appointed by the start of construction and measures should be put in place to ensure that all parties share the same vision and consciousness.	Clarification and emphasis		Suggested recommendation is provided in dedicated section on safety culture in paras 4.2-4.7		
France 10	2.8	Adequate completion of design, including acceptance criteria, and engineering work commensurate with the authorization process should be checked and verified prior to start of construction.	Superfluous	X			
UK05	2.8 line 3	Replace "The future....begins". Before construction begins, a forward action plan covering remaining design and engineering works and the necessary resource requirements should be developed and monitored as construction proceeds.	Clarification and emphasis	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK06	2.8 line 4	Care should be taken to ensure that the form of contract does not result in late completion of design work resulting in parties being placed under time and cost pressures that may affect quality and ultimately safety.	Clarification and emphasis	X			
UK07	2.9 start	Development of method statements and qualification of methods of..	Clarification and emphasis		Development and qualification of well-defined methods of construction, transportation, inspection or testing that is relevant to safety should be done before commencement of the activities, especially for a first-of-kind technology.		Combined with other comments
UK08	2.9 end	These may be mitigated by the use of trials, mock-ups and 3-D modelling and the use of experts and specialist coordinators.	Clarification and emphasis		Following paragraph is added at the end: "Potential non-conformances and deviations should be minimized by early planning with adequate resource for qualification activities such as R&D activities or mock-up/full size verification tests."		Editorial enhancement

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 28	2.11/Line 1	Consider replacing paragraph and first bullet with: <u>For sites with existing nuclear installations, emergency preparedness considerations should include:</u> <u>- The average and peak employment at the site throughout the construction or modification project; and,</u>	For improved clarity		For sites with existing nuclear installations, emergency preparedness considerations should <u>take account the followings:</u>		Editorial adjustment accommodate following bullets (“take account” is more appropriate than “include”)
UK09	2.11 line 1	At existing sites, the emergency preparedness arrangements.. Delete “into”	Emergency preparedness of existing site – should be modified for the new arrangements of construction activities. Ie extra people on site, disruption to infrastructure such as roads (often with security gates for traffic and personnel to pass through).		“For sites with existing nuclear installations, emergency preparedness should take account the followings:”		Simplification. The suggested emphasis is given in the following bullet points.
France 12	2.11	- The various phases of construction and commissioning with their inherent and different major risks.	Superfluous	X			
France 13	2.12	The regulatory body should ensure that the licensee(s) should carry carries out a risk	Typo	X			
UK11	2.12 line 1	Delete “should”	Emphasis	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 31	2.12/ Last sentence	Further guidance on interaction with effect on and from existing facilities is provided in paragraphs paras 5.42-5.44	For improved clarity	X			
UK17	3.2 Line 3	...suitably qualified, trained and experienced..	Important point	X			
UK18	3.3 Line 2	...to a graded approach...	Typo	X			
Canada 34	3.3 line 1	Change sentence to "The regulatory body should develop requirements or guidelines governing its oversight..."	Some regulatory regimes do not require establishment of "requirements" in the strict sense. Guidelines and principles are sufficient in those cases so long as a consistent methodology is followed.	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 35	3.5/L ine 2	“To properly implement an oversight programme during construction, the communication between the licensee, regulatory body and any other authorized bodies as appropriate should be formally defined before construction begins.”	For improved clarity, as there may be more than one regulatory body governing construction activities (i.e., national, provincial or municipal regulatory agencies)	X			
France 19	3.7	the regulatory body should make use of hold points or witness points such as first concrete, major safety significant equipment installation, fuel on site, entering commissioning, or <u>following</u> a major deviation from the requirements.	Clarification	X			
Canada 36	3.7/L ine 5	Add “These should be identified and communicated to the licensee as early as possible to allow consideration in planning and scheduling activities.”	For improved clarity	X			
UK20	3.8	Replace with: The regulatory body should have in place a system to allow them to receive and address any matters raised by other parties concerning the safety of construction.	Clarification	X			
Japan 13	4.3/2	..., temporary workers with various <u>levels of</u> skills, ...	Clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 21	4.3	These factors are known to be some of the prime conditions that can induce poor <u>challenge</u> safety culture.	Alternative wording			X	Although meaning is same, the original has more impact by emphasizing that these are conditions which <u>may lead to POOR safety culture</u> .
UK22	4.3 Line 6	...and the maintenance of...	Better wording	X			
Japan 14	4.4/3	... in organizations less familiar with nuclear <u>safety</u> requirements.	Clarification	X			
UK23	4.4 line 4	...or are employed...	Typo	X			
Japan 15	4.4/last sentence	A system to train personnel, <u>especially for personnel</u> who have transferred to or employed on nuclear projects from other industries, should be established to make them aware of the additional issues associated with nuclear safety.	Clarification			X	The original has fewer words with same meaning (The statement only applies for personnel from other industry).
UK25	4.6 line 2	Monitoring and evaluation should cover not only contractors' organisations but also staff.	Neater	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 16	4.7/1	To support the safety culture principles, there should be a process for reporting concerns directly to management and the regulatory body.	Clarification is needed for concerns as this sentence starts with 'To support the safety culture principles'. Concerns on safety culture or on nuclear safety , or on both?		The word "safety" is added before concern		The addition is to mean anything relevant to safety, including both safety culture and nuclear safety.
Japan 17	4.8 Heading	APPLICATION OF GRADED APPROAH	Clarification Graded approach here is the same definition with that defined in the IAEA Glossary? The wordings 'the grading process' in Para. 4.8 and 'the grading approach' in Para.4.9 should be in line with the Glossary.			X	The term "Grading" is used already in GS-R-3 and other guides. (for instance, there already exists a section titled "GRADING THE APPLICATION OF MANAGEMENT SYSTEM REQUIREMENTS")
Sweden 2	4.9(a)	Addprocesses such as welding and non-destructive testing and		X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 39	4.11/Line 3	The list on the last line could be expanded to read: “... <u>the primary responsibility for health, safety, security, environment and quality.</u> ”	For completeness			X	SF-1 says, “...‘safety’ means the protection of people and the environment against radiation risks, and the safety of facilities and activities that give rise to radiation risks...” Thus safety includes health and environment. It is an important concept but not necessary to mention it again.
Japan 18	4.13/1	The licensee should take the responsibility during construction for all activities that could affect safety of the installation regardless of location.	Editorial			X	Authors would like to emphasize off-site also (manufacturing /testing / storage facility, transportation, etc.).
Japan 19	4.13/1 st bullet	The licensee should establish a construction supervision plan <u>of the items important to safety</u> with consideration for the safety importance of the items important to safety that includes audits, product quality surveillance, witness/hold...	Editorial		“The licensee should establish a construction supervision plan <u>for the items important to safety which includes audits, ...</u> ”		Editorial
UK28	4.13 List	Last point: - Transfer of documentation when moving from construction to commissioning and from commissioning to operation	Key interface			X	Yes but from commissioning to operation is out of scope for DS441: it is covered by NS-G-3.9, “Commissioning of NPPs”.
UK29	4.13 End	Add final point: -Ensuring that appropriate records relevant to plant life and ageing management are preserved.	Important considerations for licensee and operator.	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 20	4.14/ last sentence	The construction manager has the responsibility to ensure that the construction meets safety requirements .	Clarification needed Requirements vary from those of legal, regulatory, licensee, those are mentioned in para. 4.21, and as well as industrial ones. Usage of requirement should be clear throughout this document.		...meets <u>all relevant</u> safety requirements...		Clarification. The addition of "all relevant" makes it consistent with 1.8 and applies to any safety relevant requirements. Other usages of the term are also checked and modified as necessary. For the requirements used under the section titled "Requirements Management," a foot note is added to distinguish its meaning.
France 24	4.15	The construction manager should have access to the necessary resources to establish a construction organization which may be or include contracted staff <u>or even sometimes be entirely contracted</u> .	Clarification			X	The original is quite clear and more simple.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 25	4.15	The role and responsibilities of the construction organization should be defined and documented by the licensee. The management structure of the construction organization should define as well as the level of responsibility for groups within it, including the responsibilities among contractors.	Merging the two sentences offers more flexibility on who defines what...		The role and responsibilities of the construction organization should be defined and documented by the licensee. The management structure of the construction organization should define the level of responsibility for groups within it, including the responsibilities among contractors.		Easier to read with a break in the middle.
France 26	4.16 (b)	Ensuring that the construction organization staff and the contractors are established on the site in a controlled manner in allocated areas and are provided, where appropriate, with the necessary site services, information and instructions with regard to the applicable industrial <u>and nuclear</u> safety requirements;	The construction organization staff should also be included. Industrial safety requirements are necessary but nuclear safety requirements also...	X			
Canada 41	4.16/bullet (e)	"to ensure compliance with statutory and regulatory requirements with regards to quality, safety and environmental protection "	For completeness			X	Safety includes the protection of the environment as SF-1 states.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 30	4.16 (h) (i) and (k)	(h) Carrying out maintenance for equipment as required, ensuring ; (i) proper care of equipment that could deteriorate during construction, such as dehumidification of electrical equipment and preservation of critical surfaces and (k) Carrying out adequate housekeeping activities to protect open equipment against foreign materials intrusion and contaminants;	Same topic (maintaining equipment in good shape) so can be merged.	X			
UK30	4.16 (h)	Carrying out maintenance of equipment as required;	Typo	X			
UK31	4.16 (i)	... of electrical equipment, preservation of critical surfaces that could rust and prevention of contamination.	Key aspect added	X			
Japan 21	4.16(j)	Carrying out inaugural inspection for systems or components and obtaining...	Clarification needed As it refers in-service inspection, it seems the same as pre-service inspection. Unfamiliar wordings such as inaugural inspection should be defined, if it remains here.		Modified to “first inspection”		Clarification
UK32	4.16 (l)	..of completed work and records...	Records are important	X			
France 32	4.16 (n)	(n) Ensuring that relevant regulatory requirements are incorporated into work related documents.	Superfluous as already covered by (g) as modified	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 43	4.17/Line 2	Recommend actually listing the content of paragraphs 5.43 to 5.60 from Reference 3, rather than just citing them	For ease of use, so that the reader does not have to refer to a separate document to get this information.			X	The IAEA Safety Guides do not repeat recommendations and guidance from other SGs except making reference to avoid any inconsistencies (in future when revisions take place) and reduce the volume of the guides.
France 33	4.18	Construction management is a leadership function primarily concerned with the organization, co-ordination and control of large human, equipment and material undertakings with many constraints, with the aim of achieving technical excellence, by working to quality standards, by optimizing the schedule and the supply chain.	Superfluous	X			
Canada 44	4.19/Line 2	"They should take due account of safety and environmental protection	For completeness			X	Safety includes the protection of the environment as SF-1 states.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 45	4.20 Line 2	Delete the word "recent".	Document should be "timeless". This issue has appeared everywhere in multinational projects for a long time. (not just nuclear) The clause is valid and suggests a Human Factors advisor should be available on the project team.	X			
Canada 46	4.20/Line 3	Add to first sentence: ...and have documentation to demonstrate it.	For improved clarity		...and maintain documentation to demonstrate them.		Editorial modification
Japan 22	4.20/3	Recent experience has shown that a construction project can involve the use of temporary workers with various skills, multi-layered and multi-national contractors with various languages, cultures, legal and regulatory backgrounds, and different conventions for measurements.	Clarification Need explanation of the wordings; conventions for measurements.		Modified to: "different conventions for measurements (usage of different units, measurement methodologies with various types of measurement equipment/devices, uncertainty, etc.)		clarification

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 34	4.20	These differences should be taken into account in developing the project management <u>and choosing</u> Project managers— should have competences to function successfully in this environment.	Shorter wording	X			
Canada 47	4.21/Line 4	Correct typo in. "...safety related activities and items important to safety are consistent..." or modify to read "safety related activities and items important to safety are consistent used and maintained in accordance with applicable requirements national regulations and standards "	Correction/Modification (See also comments on paras 2.5, 2.6)	X			Accepted the first suggestion. Second is not accepted because requirements include not only regulatory requirements and standards but also any other safety requirements by the licensee.
Canada 48	4.22 Last sentence	Reword to: <u>The licensee should ensure that the relevant requirements...</u>	Do not use passive tense	X			
France 36	4.23	The licensees should ensure that all information supplied by the design organization is sufficiently clear and explicit to convey all the <u>relevant</u> requirements to the contractors chosen to	Clarification	X			
France 37	4.24	Traceability of items important to safety from initial design through construction <u>then commissioning</u> is an important aspect of ensuring safety.	Clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 38	4.24	The licensee, <u>in liaison with the construction organization</u> , should ensure that processes are in place and should collect and store such records as required by itself and the regulatory body.	To highlight the role of the construction organization (for its contractors...), as written at the end of 4.24			X	Repetitive if suggested phrase is added. See last sentence of 4.24.
Canada 49	4.24 Second sentence.	Reword to “The licensee should ensure that <u>a configuration management process is established to ensure that processes are in place to</u> collect and store...”	Lessons learned from past projects has shown that the plant configuration must be adequately ‘baselined’ during construction in order to be effective during plant operation. The configuration management program is the most appropriate process by which the achieve this.			X	The issue of traceability here is sometimes wider than configuration management. For instance, marking and tagging or inspection and test records are not always part of the configuration management. Configuration management is already well covered in GS-G-3.5 as referenced.
France 39	4.24 (e)	(e) Construction and test records <u>(to be later used as baseline data)</u> .	Clarification	X			
France 40	4.24	The construction organization should be responsible for ensuring that the traceability records required by the licensee are provided to them.	See previous modification at the beginning of 4.24			X	The original statement at the end of the paragraph would highlight the role of construction organization better

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 41	4.25	Comprehensive photographic and, where appropriate, video records and computer simulations should be compiled, particularly in areas that will <u>later</u> be eventually inaccessible or will be subject to intense radiation. This as such information will facilitate the planning of work in <u>these</u> areas of high radiation levels during commissioning, and operation and decommissioning which would shorten working times.	Clarifications Also useful for decommissioning	X			
France 42	4.25	This will ensure that similar photograph taken or tapes made during subsequent inspections or maintenance work can be easily compared, and will help in any work <u>preparation planning and familiarization of personnel that are undertaken before the start of maintenance work.</u>	Shorter sentence, not limiting to maintenance work.	X			
Canada 50	4.25/7	Correct typo in "This will ensure that similar photographs taken or tapes made during subsequent inspections..." or simply state that "This will ensure that <u>visual records</u> made during subsequent inspections..."	Correction/Modification	X			
France 43	4.28	To avoid any risk of compromising the quality of work, the construction organization should define processes for identifying and resolving conflicts and misunderstandings between contractors, for instance concerning conflicts with construction schedules, activities, tools, work spaces..	Resolving conflict may not result in avoiding poor quality....	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 44	4.28	The construction manager should have the final authority to resolve potential conflicts at the construction site	Superfluous and may be wrong (the licensee, or even the regulator may have the final say). The previous sentence is enough...	X			
France 45	4.29	Appropriate rules and procedures should be established and documented for transfer of responsibility <u>of</u> and <u>for allowing working on items important to safety.</u>	Clarification		Appropriate rules and procedures should be established and documented by the construction organization to control and coordinate the handover of completed works from one supplier to another in order to maintain the integrity of the completed works.		Minor editorial change for easier reading.
France 46	4.29	Access control for items important to safety and working areas should also be written and implemented for the transfer.	Superfluous (already covered by the previous sentence)			X	It is considered better to separate access control and transfer of responsibility and work in 2 steps to emphasize clearly of their significance.
UK34	4.30 / 2	...both groups concerned..	Word position changes meaning	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 24	4.30/2	When items important to safety and working areas are to be transferred between groups within the construction organization, both concerned groups should make <u>confirmations inspections</u> together at the location in consideration.	Clarification This activity is not the category of "inspection".		Modified to "...both concerned groups should make a <u>joint check of the transferred items and the associated documents.</u> Both parties should sign formally to indicate the transfer of responsibilities."		Clarification
UK35	4.32 /2	... from construction to commissioning.	Typo	X			
France 47	4.32 (a)	(a) Documentation relating to the items <u>to be</u> transferred should be reviewed by the construction organization for completeness and accuracy.	Clarification	X			
Korea 2	4.32 Item (a)	construction organization → construction and commissioning organization	Commissioning organization should also review		Modified as : <u>(a)Documentation relating to the items to be transferred should be reviewed by the construction organization and the receiving party for completeness and accuracy.</u>		To maintain flexibility, receiving party is used because some States allow construction group to commission.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 55	4.32/bullet a	Add "...construction organization and the receiving organization " for completeness and accuracy.	For improved clarity		"...construction organization and the receiving party for completeness and accuracy.		It may not be an organization
France 48	4.32 (b)	(b) Pre-commissioning inspection and <u>pre-commissioning</u> functional tests should be carried out and the results recorded.	Clarification as functional tests largely performed during commissioning	X			
Canada 56	4.32/bullet b	Reword sentence to ' <u>Inspections and commissioning activities should be carried out and results recorded</u> '	To cover off new scope of this section.			X	Should maintain the concept of pre-commissioning inspection and functional tests as described in the Annex of NS-G-2.9
France 50	4.32 (e)	(e) An inspection of transferred items and associated records and documents <u>should be conducted</u> .	For consistency with other bullets.	X			
UK36	4.32 (e)	An inspection of transferred items and associated records and documents should be carried out.	Verb added.	X			
UK38	4.33 Line 1	Delete ", if necessary,"	Basic duty	X			
France 52	4.34	Requirements for resources should be estimated, planned and secured for the construction of items important to safety, particularly for the long lead items.	Clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 25	4.34/2	Requirements for resources should be estimated, planned and secured for the construction <u>(including manufacturing)</u> of items important to safety, particularly for the long lead items.	Clarification		Modified to: Resources should be estimated, planned and secured for <u>all construction activities</u> of items important to safety,...		The definition of construction already includes manufacturing, but modified as shown to emphasize all activities, including manufacturing.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 58	4.36	Delete 'and the licensee should be notified and approved as necessary'	Extra text is confusing and unnecessary. The licensee should be part of the construction organization.		It is rewritten as: "Depending on each regulatory or contractual case, the construction organization is usually responsible for contracting activities for construction. As a minimum, the licensee should be notified <u>of the contractors chosen to supply or manufacture items important to safety, or to provide safety significant service.</u> Depending on the <u>agreement between the licensee and the construction organization,</u> <u>licensee's approval may be needed."</u>		The licensee is not necessarily a part of construction organization as par. 2.2 states. That is why it has "as necessary" at the end.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK39	4.36 Line 2	...and approve as necessary.	Typo		The paragraph is replaced with: “Depending on each regulatory or contractual case, the construction organization is usually responsible for contracting activities for construction. As a minimum, the licensee should be notified of the <u>contractors chosen to supply or manufacture items important to safety, or to provide safety significant service. Depending on the agreement between the licensee and the construction organization, licensee’s approval may be needed.</u> ”		As a result of other comments from other countries, a new paragraph is replaced with the old one.
France 54	4.37	The activities that they will perform should be established and documented.	???	X			
ENISS 5	4.37	The graded approachand selection of subcontractors providing materials.....and documented				X	Contractors include sub-tier contractors as par. 2.3 states.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK40	4.38 Line 1	The extent of oversight of the contractor's activities by the licensee and/or the construction organisation should be proportionate and based on the graded approach.	Neater wording	X			
UK41	4.38 Fourth point	...can be demonstrated and the risk of failure;	Emphasis			X	The addition does not make sense.
France 55	4.38 Last bullet	- Legal and regulatory requirements and related legal/statutory laws.	Alternative wording	X			
France 56	4.38 Last sentence	The licensee should be notified of the results of the oversight performed by the construction <u>organization for safety related matters</u> — as necessary.	Clarification. The licensee is responsible for safety.	X			
EC 5	4.38 Last sentence	The licensee should be notified of the results of the oversight performed by the construction <u>organization</u> as necessary.	<i>The word "organization" seems to be missing:</i>	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 59	4.38/ last line	Reword to: <u>“The licensee should be prepared to present the results of oversight performed by the construction organization”</u>	For completeness		The licensee should be notified of the results of the oversight performed by the construction organization on safety related matters and, if necessary, be able to present the results to the stakeholders.		clarification
Korea 3	4.38/ Last sentence	construction → construction organization	Correction	X			
UK42	4.38 Last sentence	...the construction organisation...	Missing word	X			
Canada 61	4.39 sentence 1	Reword sentence to ‘...subcontract(s), <u>the contractor(s) should demonstrate to the construction organization that the contractor(s) are</u> fully aware of all relevant requirements for the activities.’	Demonstration should not be restricted to a meeting although a meeting is a good idea.	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
EC 6	2 nd sentence of 4.39	The specific nuclear requirements should be identified and the requirements should include:	<i>See comment 4. It is better to insist on the requirements which are specific to nuclear industry, in order to avoid misunderstandings.</i>		The specific safety requirements should be identified and the requirements should include...		Editorial change. Safety refers to nuclear safety by default.
UK43	4.39 Last sentence	The licensee should be notified of this meeting and be represented at it (particularly if the construction organisation is not the licensee).	Licensee control of the supply chain process		Modified as follows: "The licensee should be notified of these arrangements and approve as appropriate (particularly if construction organization is not the licensee). An initial kick-off meeting with the attendance of all parties, including the licensee, should be utilized to confirm all these issues."		Modified as a result of considering all comments
Canada 62	4.40	Delete " <u>ideally during this meeting</u> "	To align with the above change	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK44	4.40 Line 1	...in advance of the meeting...	No. This meeting is noted as occurring post contract award in 4.39. It would be more usual for the contractor to have named potential subcontractors within the tender. They will confirm from this list which they wish to use but the Construction organization would normally have final sanction.		“ideally during this meeting” is deleted.		Change to not to specify the timing and maintain flexibility for each case.
UK45	4.41 Line 1	...should organise regular...	This should be a defined process	X			
Japan 26	4.43/ 6	...non-conformities shall be documented” (para. 4.16 6.15).	Correct citation; text refers to para.6.15 of Ref.[5].	X			
Japan 27	4.43/ 7	Furthermore, Ref. [7] states in paras 7.6 and 7.6 7.7 that:	Correct citation; text refers to paras.7.6 and 7.7 of Ref.[7].	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 60	4.45	Arrangements for communication should be established between the design and construction organizations and between construction organization and <u>its</u> the contractor(s) and to deal with queries on the design information from contractor(s).	The construction organization may have questions on the design	X			
UK48	4.45 Line 1	...between the designers/design authority and...	There will probably be a design supply chain in parallel to the construction supply chain.		The following footnote is added: "There may be a design supply chain in parallel to the construction supply."		Avoid introducing the undefined term 'design authority' (but a footnote is added to include design authority in designer(s)).
France 61	4.46	A process should be established to address change proposals from the contractor(s) with regard to the design information issued.	Superfluous	X			
UK50	4.46 Line 3	...involve the design organisation (designers/design authority)...	There will probably be a design supply chain in parallel to the construction supply chain.		Changed to "...design organizations" as in previous case with a footnote		Avoid introducing the undefined term 'design authority' (but a footnote is added to include design authority in designer(s)).
France 62	4.47	Progress assessment should also be done to provide early diagnosis of performance, <u>planning or resources</u> problems or schedule and cost overruns . Early remedies, adjusting human resource, <u>revising the schedule</u> , renegotiation of contracts should be considered to avoid compromising the quality of the product.	Clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 28	4.48/ 1	Independent <u>assessment review</u> programmes should be established and implemented, and address project management competence.	Editorial	X			
France 63	4.50	The process of determining the safety significance and the corrective actions of the non-conformance should include appropriate experts, including <u>when necessary</u> the design organization.	Clarification	X			
Canada 63	4.50	Add new opening sentence: <u>“Non-conformances of safety significance should be treated as events by the licensee, and resolved via a corrective action program in a graded manner.”</u>	This types of non-conformance have potential to end up as latent plant issues is not formally tracked and resolved. The corrective action program will ensure that the event resolution is adequately documented for future use.	X			
UK52	4.50 Line 2	.. including the design organisation (designers/design authority).	There will probably be a design supply chain in parallel to the construction supply chain.		Changed to “...design organizations” as in previous case with a gootnote.		

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK53	4.51 Line 2	...significance to the construction programme and nuclear safety...	NS is a key consideration		“Actions that are determined for corrective actions should be assessed in relation to their <u>safety</u> significance to the...”		Fewer words with same effect.
UK54	4.51 Line 2	...dealt with at the appropriate management level.	Typo	X			
UK55	4.52 Line 1	Records of the corrective actions taken to resolve non-conformances...	Neater wording	X			
France 64	4.52 Second sentence	The effectiveness of the process to implement corrective action <u>and to prevent similar non-conformances</u> should be <u>monitored</u> determined by monitoring for non-conformances reported.	Offers flexibility on the means used to monitor. Prevention of similar non-conformances should be highlighted	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 64	4.53	Sentence needs clarification	What is a "pending non-conformance"?		The following sentence is added before this sentence: "Due to the challenging nature of construction projects such as tight schedules, new technologies or limited resources, corrective actions to non-conformances may require long time and may stay as pending issue even after handovers from one party to another."		Added for clarification
UK56	4.53 End	Add at end. A comprehensive tracking system should be managed to ensure that non-conformances are resolved and records maintained and that the relevant parties are informed.	Clarity	X			
UK57	4.54 Line 3	Criteria should be established for the regular selection and reporting of construction related experience and measures put in place to ensure the dissemination of this information to the relevant parties. Mechanisms to enable sharing of construction experience in a systematic and timely manner should be put in place..	Neater wording. It is important to report the results.	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/L ine No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 9	5.1/1	Construction activities should be planned. The plan should specify, <u>for instance</u> :	Items raised here are only a part of activities.	X			
France 67	5.1 1 st bullet	- The planned sequential order (<u>taking into account pre-requisites</u>) and duration of these activities;	Clarification	X			
Sweden 7	5.1 First bullet	Make the article more specific by using other words than "integrated". The clarification can be made by making it clear that I & C system parts are installed and assembled on site, but have possibly been subject to V & V and qualification prior to delivery.	The article is partially dealing with aspects dealt with in other phases, ie. during manufacturing.		"Integrated" is deleted.		The word "integrated" is not necessary.
France 68	5.3	The planning, scheduling and work sequence should include hold and witness points <u>as necessary. Some may be in particular those specified by the licensee and regulatory body in the overall construction programme.</u>	Clarification, why limiting some of the HP/WP to the overall construction program ?	X			
France 69	5.4	The construction planning, scheduling and work sequence should include requirements for off-site manufacturing and assembling activities with adequate quality management programme.	Superfluous			X	Suggested deletion makes it too general and less clear than the original, i.e. requirements is clearer than activities. Also off-site manufacturing and assembling should also be emphasized that they should be under adequate QA programme.

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Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK60	5.4 Line 2	...for off-site manufacture and assembly under an adequate quality management system.	Neater wording.		Modified to: "...for off-site <u>manufacturing</u> and <u>assembling under</u> an adequate quality assurance programme".		To be consistent with 5.3. QA programme is emphasized during manufacturing.
UK61	5.6 Line 2	...to the principal designer/design authority	Clarification			X	A footnote is added instead for clarification and avoiding the introduction of another new term.
France 70	5.7	Construction sequencing should be reviewed and checked to ensure prior construction work (such as embedded items in walls or ground) would <u>will</u> not be adversely affected such as embedded items in walls or ground by later construction work.	Alternative wording	X			
Canada 66	5.8 line	Revise to read: "Procurement specifications should be developed with sufficient lead time to ensure that items important to..."	Late development of procurement specifications can result in a higher number of non-compliances as those development activities then become time critical to the installation schedule.	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 72	5.9	The safety classification of items important to safety should be included in the procurement specifications so that the supplier can determine the necessary codes and standards (including inspection requirements), <u>or parts of codes or standards, to apply.</u>				X	The “necessary” code and standards includes parts of codes or standards.
UK64	5.9 End	...(including inspection requirements), where these have not been specified by the designer.	Clarification	X			
France 73	5.10	A part	Typo	X			
Canada 67	5.10/Line 1	“As part of procurement documents for items important to safety there should be...”	For improved clarity	X			
UK65	5.10 Line 1	A part of...	Typo	X			
UK66	5.10 Line 2	...or assembly..	Neater wording	X			
UK67	5.10 List	Add at end: -Personnel training requirements	Key issue	X			
UK68	5.12 Line 1	...obtain the approval...	Typo	X			
UK69	5.14 Line 2	...loss of water supply, disruption of concrete batching, and any other interruptions...	Clarification	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
France 76	5.16	The environmental conditions (temperature, pressure, humidity, dust, dirt, airborne salt, wind, and electromagnetic conditions, ...) during construction work including manufacturing, assembling and transportation should be specified and periodically monitored to confirm that conditions are within their limits of: temperature, pressure, humidity, dust, dirt, airborne salt, wind, and electromagnetic conditions.	List is not exhaustive...		The environmental conditions <u>such as temperature, pressure, humidity, dust, dirt, airborne salt, wind, and electromagnetic conditions</u> during construction work including manufacturing, assembling and transportation should be specified and periodically monitored to confirm that conditions are within their limits.		List is given as an example to make it partial.

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
UK70	5.16 Line 2	...assembly and transportation should be specified and periodically monitored to confirm that conditions are within allowable limits of relevant factors, including, temperature...	Neater wording Clarification		The environmental conditions such as <u>temperature,</u> <u>pressure,</u> <u>humidity,</u> <u>dust,</u> <u>dirt,</u> <u>airborne salt,</u> <u>wind,</u> and <u>electromagnetic conditions</u> during construction work including manufacturing, assembly and transportation should be specified and periodically monitored to confirm that conditions are within allowable limits.		Rewording with comments from others
UK71	5.17 Line 1	...for installation...	Typo	X			
UK73	5.20 Line 1	...have an on-site item and consumable inventory management system.	Neater wording		5.20 is deleted		Deleted due to repetition of 5.19. See the resolution for France comment #77 categorized under technical accuracy/completeness
UK74	5.22 Line 1	...on-site...	Typo	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 71	5.22/Line 2	Clarify what is meant by "...whether they are being transported or on the transport route."	The meaning of this sentence is not clear.		The suggested phrase is deleted.		Deleted because it is confusing to some readers and adds not much value.
UK75	5.26 Line 1	..and their components..	Neater wording	X			
Canada 72	5.27 line 1	"...important <u>to</u> safety,"	Typo	X			
UK76	5.27 Line 1	...important to safety...	Neater wording	X			
UK77	5.28 Line 4	...after installation..	Neater wording	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 73	5.30	<p>Wording of this clause is not clear.</p> <p><i>“During the on-site or off-site pre-commissioning tests, the relevant items important to safety should be isolated or protected to avoid inadvertent actions.”</i></p>	<p>Sentence does not make sense when one applies a case such as offsite commissioning tests of a plant control scheme – some plant control systems are commissioned at the factory with integration tests completed at the construction site post-installation to complete commissioning. How would one apply 5.30 to this case?</p>			X	<p>Confusion is perhaps due to lack of understanding of the term pre-commissioning tests. As previously mentioned, pre-commissioning test is usually the “first ever” functional tests of individual subsystems or components after manufacturing, installation, or assembly. Thus some inadvertent action may result from this first test and may damage any connected SSCs. If they are done at on-site with everything connected, there should be some provision for protecting the connected SSCs and this is what this recommendation is saying</p>
France 79	5.32	<p>The licensee and construction organization should develop a process to verify the <u>adequate</u> completion of construction activities. This verification should be formally documented to confirm the items important to safety have been constructed to <u>(or installed as per)</u> the specified requirements and comply with the acceptance criteria.</p>	<p>Clarifications</p>			X	<p>..a process to verify the “adequate” completion of construction activities is unclear and requires more explanation. Completion may or may not include open issue depending on the agreement between parties but here it should be kept simply as completion.</p> <p>Installation is included in the definition of construction.</p>

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Korea 4	5.32/Item (f)	Add "and their resolution results" at the end of the sentence	Results should be recorded	X			
France 80	5.34	The adequacy of tests (contents, results and timing) should be justified and the test coverage analysed against the requirements specified for the system, <u>structure or component</u> .	Clarification ('system' is limitative)		The test plan, acceptance criteria and results should be documented such that they can be independently assessed. The adequacy of tests (contents, results and timing) should be justified and the test coverage analysed against the <u>specified requirements</u> .		No need to say about SSCs. Just "specified requirements" is enough.
UK78	5.36 Line 2	...of quality of manufacture and/or assembly.	Neater wording	X			
UK81	5.39 Line 1	...before the construction...	Typo	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 10	5.39	Regardless of the time of procurement, if the procurement is begun before construction licence is issued, the licensee should ensure procured items important to safety achieve the design specification and required level of safety.	Ensuring the design specification and required level of safety of the procured items should not depend on the time of the procurement.		<u>Procurement of item may start long before the construction licence is issued.</u> <u>Regardless of the time of procurement,</u> the licensee should ensure procured items important to safety achieve the design specification and required level of safety.		Maintain emphasis on early procurement.
UK82	5.41 List	(c) Manufacturing and assembly documentation is available as required;	Neater wording	X			
Japan 29	5.41/(h) and 5.45	5.41/(h) Cleanliness is of the correct standard; 5.45 The construction organization should ensure that on-site manufacturing and assembling of items important to safety is capable of producing an acceptable product which meets applicable codes and standard and design requirement.	Clarification The usage of word should be consistent between in paras. 5.41 and 5.45.		5.41(h) is changed to "Cleanliness meets applicable codes and standards and design requirements."		correction
UK83	5.41 List	(j) Non-conformances identified by receipt inspections are recorded.	Missing words	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Japan 30	5.41(j)	Non-conformances <u>have not been</u> identified by receipt inspection	Clarification		(j) Non-conformances identified by receipt inspections <u>are recorded</u> ;		clarification
UK84	5.42 Line 4	Assessment of safety and security during construction should be performed and take into account all hazards from, or to, nearby facilities and...	Neater wording	X			
EC 13	Last sentence of 5.42	Such consideration <u>should</u> include <u>also</u> consequence assessment of [...]	<i>Wording modification to ensure consistency with the previous sentence (see comment 12)</i>	X			
UK85	5.42 Line 7	...should include...	Neater wording	X			
France 82	5.44	In utilizing resources of existing nuclear installations such as water, electric power, fire protection, emergency medical services and security, clear interfaces should defined and understood by the construction organization <u>so as not to jeopardize operating installations</u> .	Clarification	X			
Canada 75	5.44 Last line	Correct "In utilizing...emergency medical services and security, clear interfaces should <u>be</u> defined and understood..."	Typo	X			

Comments category: Editorial/Clarity Draft 1.1

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
Canada 76	5.45/Line 2	Correct."...on-site manufacturing and assembling of items important to safety <u>are</u> capable of producing an acceptable product..."	Typo	X			
UK87	5.44 End	Add at end: Emergency plans should take full account of the presence of other parties in the area.	Clarification	X			
UK88	5.45 Line 1	...manufacture and assembly...	Neater wording	X			
France 83	5.45	The construction organization should ensure that on-site manufacturing and assembling of items important to safety is capable of producing an acceptable product which meets applicable codes and standard and design <u>(including safety) requirements</u> .			Modified to: "The construction organization should ensure that on-site manufacture and assembly of items important to safety are capable of producing an acceptable product which meets <u>safety and design requirements and also applicable codes and standards.</u> "		Editorial change for easier reading.