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CORRESPONDENCE MATRIX

NQSA NSQ-100 version 0

NUCLEAR SAFETY AND QUALITY MANAGEMENT SYSTEM – REQUIREMENTS

Model for quality management in design & development,
 manufacturing, erection, commissioning and related services

VERSUS

KTA 1401 (2013-11)

SAFETY STANDARDS of the Nuclear Safety Standards Commission (KTA) – Germany


General Requirements for the Quality Assurance

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FOREWORD

The objective of this document is to examine each requirement of the safety standard of the Nuclear Safety Standards Commission (KTA) – Germany, document: KTA 1401:2013-11 (General Requirements for the Quality Assurance), and identify the associated paragraph(s) of the Nuclear Quality Standard Association (NQSA) document: NSQ-100 (Nuclear Safety and Quality Management System – Requirements).

0. INTRODUCTION

0.1. General – Application of NSQ-100 in a KTA 1401 licensing environment

The purpose of NSQ-100 is to address quality management for nuclear industry, in design & development, manufacturing, erection, commissioning and related services, in line with international requirements (in particular IAEA GS-R-3), and its frame is based on ISO 9001:2008.

The KTA 1401 specifically aimed at the Licensee, and has a scope a little bit wider as it includes the operating of the power plant. It applies to the quality assurance during:

- safety-related conceptual design,
 - planning and design,
 - procurement,
 - fabrication and assembly of product forms, parts, components and systems,
 - manufacture or the providing of products,
 - erection and subsequent work on building structures,
- as well as:
- commissioning,

including the tests and inspections performed with special regard to those quality characteristics important to the precautionary measures against damage of the safety-related parts and services for stationary power plants during construction, operation and until decommissioning.

However, in spite of this slight difference of purpose, the Licensee and/or the other Organizations may partially or fully satisfy these KTA 1401 requirements by referring to and applying NSQ-100 requirements. Comments, when relevant, are identified in the last column of the matrix in *blue coloured characters*.

It can be seen however:

- from the matrix, that Organizations, as qualified to NSQ-100, have the essential ingredients of a management system able to satisfy a customer (Licensee) working in a KTA 1401 licensing environment.
- that the management system of Organizations, as qualified to NSQ-100, addresses additional, or more detailed international standard criteria, in particular requirements related to:
 - o safety culture,
 - o graded approach and classification of items and activities,
 - o management responsibility (commitment, policies) and management review,
 - o process approach, project management, risk management,
 - o continual improvement.

Note:

Some wording may have slightly different senses or definitions, when used in the two different documents. Therefore, coverage of corresponding requirements may be slightly different too.

0.2. Correspondence Matrix contents

When a NSQ-100 chapter is referred to, it has to be understood as “NSQ-100 requirements for considered chapter” **and** “ISO 9001:2008 requirements for the same chapter” **and** “suggested good practices given in NSQ-100 Guidelines”.

The strict requirements of KTA 1401 are those referenced in the document as bracketed numbers (x).

1. CORRESPONDENCE MATRIX

KTA 1401			NSQ-100 CHAPTER(S)	Comments
§	Title	Pt		
Basic Principles				
	Basic Principles	(1)	Foreword 1, 4.1, 6.4, 7.1.1	Satisfactorily addressed, taking into account that: - NSQ-100 is not explicitly containing requirements for an integrated system (it's reminded that NSQ-100 is not intended to be directly applicable to Licensee as its scope is limited to organizations which supplies products within nuclear industry) - However, in NSQ-100, safety management aspects are treated in an integrated manner together with quality aspects. Therefore, it's considered that NSQ-100 complies with KTA 1401
		(2)		
		(3)		
		(4)	4.1, 4.1.1, 5.1	Satisfactorily addressed
		(5)	5.2, 5.3, 5.4	
		(6)	0.1, 1.2, 4.2.2, 5.2, 7.2	
		(7)	7.3.6, 7.4.1, 7.5.1	
		(8)	0.1, 1.1, 4.1, 7.2.1	Scope of application of NSQ-100 does not formally include operation of the nuclear power plant (which aims at the Licensee) Satisfactorily addressed, taking into account that instead of KTA safety standards, NSQ-100 refers to legal and customer requirements
1. Scope				
	Scope	(1)	1	Scope of application of NSQ-100 does not formally include operation of the nuclear power plant (which aims at the Licensee)
		(2)	-	Not relevant: Scope of application of NSQ-100 does not formally include operation of the nuclear power plant, for which KTA 1402 integrated management system requirements applies (which aims at the Licensee)
		(3)	1.2	Satisfactorily addressed, by cascading NSQ-100
2. Definitions				
	Definitions	(1)		There are some terms in both NSQ-100 and KTA 1401 that are not specifically described in the other standard. Some definitions can be found in the ISO 9004
		(2)		
		(3)		
		(4)		
		(5)		
		(6)		
		(7)		
		(8)		
		(9)	3.4	
		(10)		
		(11)	3.11 (wider)	
		(12)		
		(13)		
		(14)	3.5 (partial)	
		(15)		
		(16)		
		(17)		
		(18)		
		(19)		
		(20)	3.3 (wider)	
		(21)		
		(22)		
		(23)		
		(24)		
		(25)		

KTA 1401			NSQ-100 CHAPTER(S)	Comments
§	Title	Pt		
3. General Requirements				
	General Requirements	(1)	4.1, 5.5.1, 7.4	Scope of application of NSQ-100 does not formally include operation of the nuclear power plant (which aims at the Licensee)
		(2)	4.1, 5.1, 5.5, 7.4	Satisfactorily addressed
		(3)	-	Scope of application of NSQ-100 does not formally include operation of the nuclear power plant, for which KTA 1402 integrated management system requirements applies (which aims at the Licensee)
		(4)	1.2, 7.4.1	Satisfactorily addressed, by cascading NSQ-100
		(5)	7.4.2	Satisfactorily addressed
		(6)	7.4.1	Satisfactorily addressed
		(7)	4.1.2, 4.1.3, 7.2, 7.3.1	Satisfactorily addressed
		(8)	8.3, 8.5	Satisfactorily addressed
		(9)	3.3, 7.4.1	Satisfactorily addressed
		(10)	7.2.2, 7.4.1, 7.4.2	Satisfactorily addressed
		(11)	7.3.1, 7.3.8	Satisfactorily addressed
4. Organization				
4.1	General Requirements	(1) (2)	5.5, 5.6 7.4.1	Satisfactorily addressed
4.2	Structural and Procedural Organization	(a) (b) (c) (d)	6.2, 4.2.3, 7.5.1.3, 5.5.2, 8.2.2, 8.2.4	Satisfactorily addressed
4.3	Cooperation Between the Involved Companies and their Departmental Units	(1) (2) (3) (4)	5.5.1, 7.1, 7.2, 7.3.1, 7.3.4, 7.4, 7.2.3	Satisfactorily addressed, in spite of the quite detailed description in the KTA 1401 about the obligations in case of cooperation with other companies/partners
4.4	Personnel Qualification	(1) (2)	6.1, 6.2 4.2.4	Satisfactorily addressed
5. Planning and Design				
5.1	General Principles	(1) (2) (3) (4) (5) (6)	7.1, 7.1.1, 7.2.1, 7.2.2, 7.3.2, 4.2.3 4.1.2, 4.1.3, 7.2.1, 7.2.2 7.2.1, 7.2.2, 7.3.2, 7.3.4 7.3.1, 7.3.4 7.2.1, 7.2.2, 7.4.2 3.3, 7.4.1	Satisfactorily addressed Note : KTA 1401 identifies sufficient evidences to assure quality of series-produced items
5.2	Test and Inspection Documents	(1) (2)	7.5.1, 4.2.3, 4.2.4	Satisfactorily addressed Note: KTA 1401 is detailing more - the expected subjects of the inspection documents - in what consist of the certificates
5.3	Document Review		4.2.3, 4.2.4, 7.3.4	Satisfactorily addressed
5.4	Document Revision	(1) (2) (3)	4.2.3, 7.3.7 4.2.3, 4.2.4, 7.3.7 4.2.3, 7.3.7	Satisfactorily addressed Satisfactorily addressed Note: KTA 1401 is detailing more the expected provisions for identification of changes in the documents
5.5	Filing System and Identification Code	(1) (2) (3)	4.2.3 7.5.3	Satisfactorily addressed

KTA 1401			NSQ-100 CHAPTER(S)	Comments
§	Title	Pt		
6. Procurement				
6.1	Assessment of the Contractor by the Client	(1)	7.4.1	Satisfactorily addressed
		(2)	7.4.1, 7.4.2.1	
		(3)	7.4.1, 7.4.2.1	
		(4)	7.4.1, 7.4.2.1	
		(5)	7.4.1, 7.4.2.1	
		(6)	7.4.1	
		(7)	7.4.1	
6.2	Procurement Documents	(1)	7.4.2.1	Satisfactorily addressed
		(2)	3.3, 7.4.1, 7.4.2.1	
		(3)	7.4.2.2, 7.4.2.3	
6.3	Receiving Tests and Inspections	(1)	7.4.3	Satisfactorily addressed
		(2)		
		(3)	7.4.2.1	
7. Fabrication, Assembly and Erection Including Quality Tests and Inspections				
7.1	Assessment of the Manufacturer by the Proper Authority or their Authorized Expert	(1)	7.4.2.1	Satisfactorily addressed, taking into account that, if so required, KTA 1401 asks for a satisfactory evaluation of the manufacturing plant, and confirmed by written certificate from the proper authority or authorized expert. The NSQ-100 is more general, as the regulatory bodies, and third parties have the right to audit or inspect the manufacture
		(2)	7.4.2.1	
		(3)	7.4.1	
7.2	Execution and Surveillance of Fabrication, Assembly, Erection, Tests and Inspections	(1)	7.5.1	Satisfactorily addressed
		(2)	7.5.1, 7.5.1.3, 7.5.3	
		(3)	7.5.1.3	
		(4)	7.5.2	
		(5)		
		(6)	7.5.1.3, 7.5.3, 4.2.4	
		(7)	3.3, 7.4.1, 7.4.2	
7.3	Marking, Handling, Storage, Transportation and Packaging	(1)	7.5.3	Satisfactorily addressed
		(2)	7.5.5	
		(3)	7.5.1.3, 7.5.3	
8. Commissioning				
	Commissioning	(1)		Satisfactorily addressed, taking into account that: - Commissioning of the plant is not considered as within the core scope of NSQ-100. § 7.1 for planning, introduces a commissioning program, if applicable - NSQ-100 does not define limits to the scope of surveillance activities
		(2)	4.2.3, 7.1,	
		(3)	7.5.6, 7.3.8	
		(4)		
		(5)	8.3, 8.5	
9. Measuring and Testing Equipment				
	Inspection, Measuring and Testing Equipment	(1)		Satisfactorily addressed
		(2)		
		(3)	7.6	
		(4)		

KTA 1401			NSQ-100 CHAPTER(S))	Comments
§	Title	Pt		
10. Dealing with Nonconforming Products				
	Dealing with Nonconforming Products	(1)		Satisfactorily addressed
		(2)	8.3,	
		(3)	8.5.2, 8.5.3	
		(4)	4.2.3, 4.2.4	
		(5)		
11. Documentation and Document Storage				
	Documentation and Document Storage	(1)	4.2.1, 4.2.2	Satisfactorily addressed, <i>taking into account that for record retention requirements, KTA 1401 refers to the KTA 1404 (applicable to the licensee or its delegate), and more specifically to KTA 3201 series (component-related detailed standard), while NSQ-100 refers to legal and customer requirements</i>
		(2)	4.2.1, 4.2.2	
		(3)	4.2.2, 4.2.3	
		(4)	4.2.3, 4.2.4	
		(5)	4.2.4	
12. Auditing of the Quality Assurance Systems				
	Auditing of the Quality Assurance Systems	(1)	8.2	Satisfactorily addressed
		(2)	8.2.2	
		(3)	7.4.1, 7.5.1.3	
		(4)	4.2.3, 8.2.2, 7.4.1, 7.5.1.3	
		(5)	7.4.1, 8.2.2,, 8.5	