ABSTRACT

This document is the Section F to NSQ-100 Guidelines.

Its objective is to help to the understanding of NSQ-100 requirements through some examples or recommendations and descriptions of industrial good practices.

The Guidelines Section F is related to the Purchasing requirements of NSQ100 (Chapter 7.4).

Summary

- Chapter 1: Purpose of this section
- Chapter 2 : Guidelines

  The following questions are addressed :

  - *How to understand: "having a direct impact"?*
  - *What if the source is defined by the customer?*
  - *How to understand: "required measures"?*
  - *How to understand: "verify"?*
  - *How to understand "substitution"*
  - *How to understand: "b) define the necessary actions…"?*
  - *How to evaluate a supplier?*
  - *Documents / information to be submitted by a supplier before an audit?*
  - *How to understand: "register"?*
  - *Example of "scope of work"*
  - *How to understand: "c), g), h) and i)"*
  - *How to understand "competent personnel"?*
  - *How to understand "verification activities*

- Chapter 3: Description (example) of procurement activities within an organization

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CHAPTER 1: PURPOSE OF THIS SECTION

The present section refers to NSQ100 following chapters:

7.4 Purchasing

CHAPTER 2: GUIDELINES

7. PRODUCT REALIZATION

7.4. Purchasing

Note: Refer also to Guidelines Section C [Classification and Grading].

➲ How to understand: "having a direct impact"?

The wording "**having a impact on final product quality or safety**" means:

⇒ **Quality:** any supplier which supplies items, products or services whose characteristics have to comply with a specific technical requirement raised by the customer or the organization - refer also to Guidelines Section C [Classification and Grading].

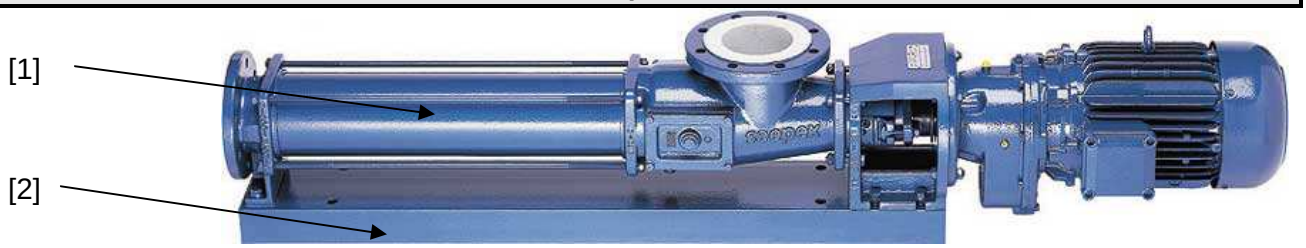
Note : a special process in the sense of chapter 7.5.2 of NSQ-100 are often classified as having an impact of final product quality.

⇒ **Safety:** any supplier which supplies items, products or services classified as important for safety according chapter 4.1.2 of NSQ100 (refer also to Guidelines Section C [Classification and Grading].)

Example n°1

A supplier which delivers a product manufactured according a nuclear design code (e.g. RCC, ASME …) must be considered as having an impact on final quality or safety.

Example n°2



Assumptions:

- Product supplied = pump [1] + support [2],
- Global Classification of product supplied: IFS classified by the customer

This following table is explaining application of chapter 7.4 requirements to each specific case which would be possible for the support (as an item part of the product supplied) after functional analysis (refer also to Guidelines section C for methods of analysis):

Case	#1	#2	#3	#4
Direct impact on quality	NO	YES	NO	YES
Direct impact on safety	NO	NO	YES	YES
Applicable QMS requirement	ISO 9001	ISO 9001 + NSQ100	ISO 9001 + NSQ100	ISO 9001 + NSQ100

7.4.1 Purchasing process

➲ What if the source is defined by the customer?

If any sources (i.e. suppliers) are defined by the customer, they should be specified in the technical specification or in the contract.

When the supplier is defined by the customer, the organization shall consider this supplier as a part of its own supply chain (with initial technical and quality evaluation, follow up, and so on…). Therefore, the organization keeps the complete responsibility of the supplier defined by the customer.
However, in case of technical or quality deviation during the purchasing process against NSQ100 or other applicable requirements, the organization shall inform timely the customer of the deviation.

The organization shall implement process in order to comply with this requirement. See as an example the flow chart in Chapter 3.

➲ How to understand: “required measures”?

Anyone involved in the supply chain shall take the **required measures** in the purchasing data to ensure that the customer’s requirements are transmitted to the suppliers.

Required measures shall include, having regard to safety classification and graded approach, identification of NSQ100 or other applicable requirements to be cascaded to the supplier.

➲ How to understand: “verify”?

Furthermore, the supplier at every level of the supply chain has to **verify** that requirements have been taken into account and implemented in order to ensure the product acceptance.

Verification may include:

- Performance of suppliers audits (quality, technical, process,… aspects adapted to the subject to be verified),
- Follow-up of the realization of the subcontracted product by performance of surveillance actions.

➲ How to understand: "b) define the necessary actions…"?

For commercial grade item, which case is mentioned in Guidelines Section n° 3, the organization has to prove that the product bought from the supplier complies with safety requirements (in other words, the organization substitutes to its supplier for concerned activities).

➲ How to understand "substitution"

When use of suppliers:

- which are not complying with all the applicable requirements of NSQ100 (*),
- or which are not complying with all the applicable requirements of ISO9001:2008 (*),

information shall be made available up to the Contractor (first rank supplier of the owner – Refer to the Guidelines Preamble).

It is well recommended to document such disposition in the Project Quality Plan, or in another approved quality document.

Example of applicable dispositions when implemented quality system is not compliant

When the supplier has not a quality system which complies or can comply with the above requirements, the organization will:

- identify, **during the purchasing process**, the deviations, and
- set up for each deviation adequate provisions to compensate the gap, e.g.:
  - ⇨ Request of application of supplier's procedures,
  - ⇨ Partial or total review of the supplier design or manufacturing documents,
  - ⇨ Evaluation of competence of supplier personnel,
  - ⇨ Request for additional inspection to be performed on the product
  - ⇨ Reinforced follow-up of realization of the product by surveillance actions e.g. witness of manufacturing operations, inspections or testing of the product

➲ How to evaluate a supplier?

The suppliers can provide material and equipment as well as design, software, NDT (non destructive tests)…

The suppliers have to be approved per scope of supply, per product type and per premises (no approval of all the affiliates of a group for example).

The type and extent of control (initial and periodic) applied to the supplier and the purchased product shall be dependent upon:

- classification of the product : IFS or not (refer to chapter 4.1.2 of NSQ100),
- its direct impact on final quality of the product, item or activity supplied,
- lessons learned further to previous orders placed to this supplier,
- its performance in similar technical fabrication or activity,
- …

Example of methodology when evaluating a supplier

A possible methodology could be the **"TQRDC" approach**:

- **T**echnical: ability to provide a product compliant with the requirements at the first time including qualification requirements (e.g. compliance with codes and standards as RCCM, RCCE, ASME), if any,
- **Q**uality: safety culture, conformance of Quality Management System with the applicable specified requirements, number of complaints raised by the organization, completeness of quality documentation provided for previous deliveries, surveillance results…
- **R**esponsiveness: ability to answer rapidly to organization (needs, Complaint Resolution Time...),
- **D**elivery: respect of schedule, on time in full,
- **C**ost: best quality at the best cost, cost decrease in the past year...

For each above field of competence ('TQRDC'), criteria and goals for the supplier evaluation have to be defined.
Some criteria defined by the organization should be considered as disqualifying if under a specific threshold specified by the organization.

The reassessment periodicity should not exceed 3 years. However, it is recommended to follow on a yearly basis the technical and quality results of the supplier.

➲ Documents / information to be submitted by a supplier before an audit?

The organization to be audited / evaluated should submit the following documents:

- QMS manual or QAP,
- List of main specifications, procedures, and status reports of the introduced and applied QMS system,
- QMS certifications, customers approvals, assessments results…

This documentation should provide, at least, the following information:

- Structure of the organisation including internal and external interfaces,
- Definition of business processes,
- Philosophy and status reports of the safety culture introduction and enhancement process,
- Management review process,
- Specifications for QM and Safety Culture introduction at suppliers.

➲ How to understand: "register"?

The word "**register**" must be understood as a listing established on one of the following media: paper, electronic file, database … The approved suppliers list should identify those safety classified suppliers from non safety classified ones.

The register shall contain at least the following information:

- Name of approved supplier,
- Approved premises,
- Scope of approval :
    - Type of activities supplied (e.g. design, manufacture, inspection, services, …)
    - Type of equipment or services supplied (e.g. pumps, valves, pipes, calculations, drawings, instrumentation, software, …)
    - Capacity to supply products or services according to specific requirements e.g. technical standards or codes,

The approved supplier list may also:

- indicate the necessity of particular or reinforced monitoring (Refer to chapter n°7.5.1.3. of NSQ100) due to technical, financial, quality [...] considerations,
- be completed in order to answer to particular national regulations (eg. Safety and quality classification of the SCC…),
- be made available for the Owner.

7.4.2. Purchasing information and procurement document control

7.4.2.1. Content of the procurement documents

➲ Example of "scope of work"

The supplier may be responsible for, all or part of, the following services:

- Detailed design and construction studies,
- Equipment qualification,
- Description of welding procedure qualification and welder qualification certificates,
- Supply and acceptance of materials,
- Manufacturing of equipment in compliance with equipment specification and acceptance criteria,
- Calibration,
- Factory tests and inspections,
- Surveillance,
- Documentation required,
- Packaging,
- Packing and transport,
- Site assembly,
- Site tests…

➲ How to understand: "c), g), h) and i)"

c) The organization has to:

- transmit to all IFS or having a direct impact on final quality suppliers the applicable NSQ100 requirements. The organization may only transmit part of the NSQ100 requirements but shall justify its choices and, if needed, takes provisions as per chapter 7.4.1.1 b) of NSQ100,
- verify that its suppliers are in compliance with these requirements.

These above requirements must be cascaded all along the supply chain.

g) Spare parts could be for:

- erection and commissioning, and/or
- a specified number of years operation.

Related data required for ordering spare parts could include requirements for:

- quality management,
- surveillance,
- documentation,
- associated tests, and
- technical data…

h) Any noticeable change (social, technical, financial, legal, organizational…) impacting quality management system has to be notified to the organization.

i) If not specified in other documents, the organization has to define requirements regarding records retention, at least retention time.

Refer to Guidelines Section A, chapter "Conditions for records storage".

7.4.2.2. Procurement document review

➲ How to understand "competent personnel"?

"**Competent personnel**" means individual who is aware of customer requirements in consistency with applicable quality management system of the organization. The organization shall define those individuals or functions, e.g. Project Quality Manager, Project Engineer, Purchase Director, Organization Director…

7.4.2.3. Procurement document changes

No Guidelines for this Chapter.

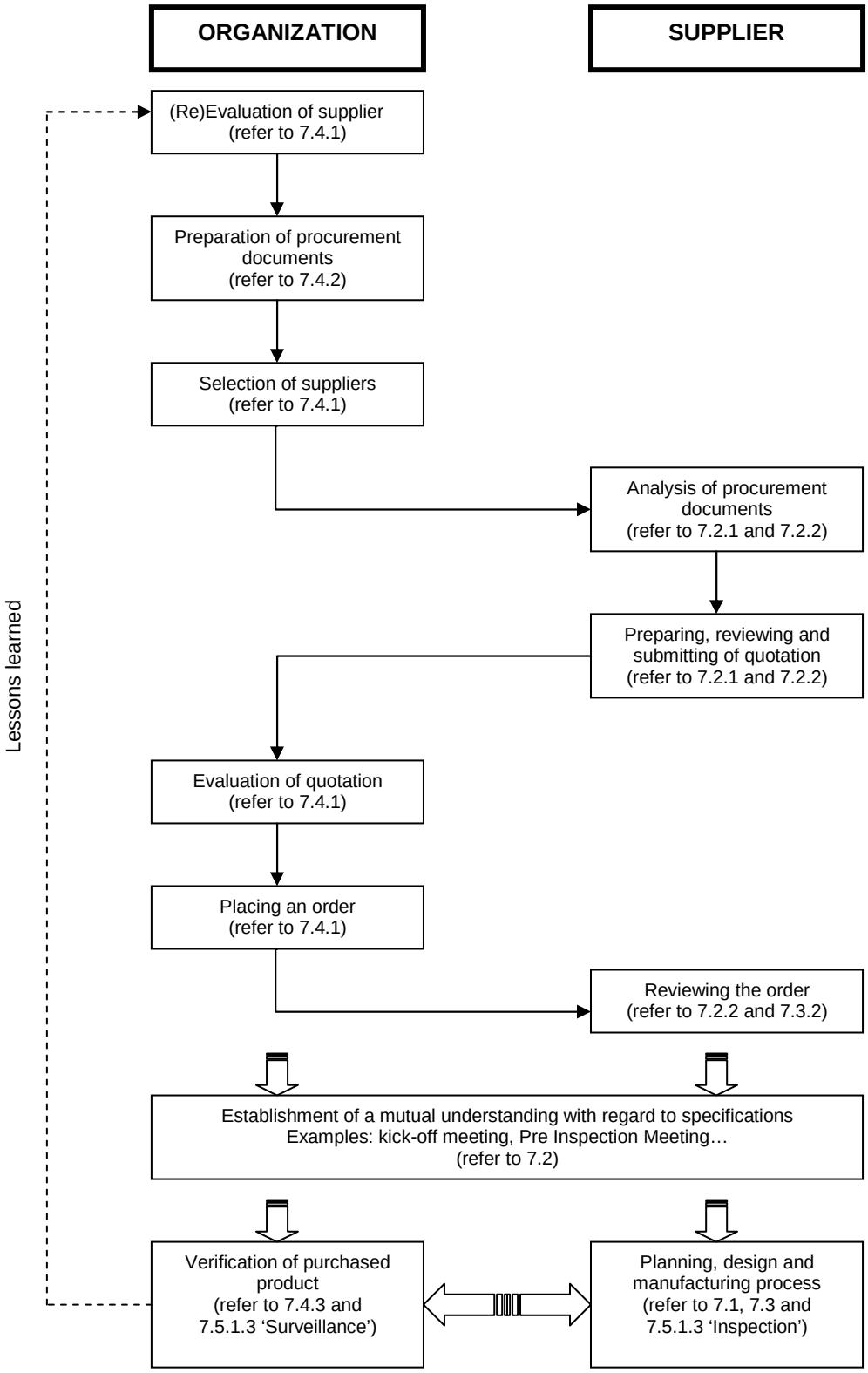
7.4.3. Verification of purchased product

➲ How to understand "verification activities"?

Methods of verification include as appropriate:

- Audit at the supplier's premises,
- Surveillance at the supplier's premises,
- Attendance to reviews with the supplier,
- Inspection at reception or/and at the supplier's premises,
- Periodic progress meeting,
- Objective evidence of the conformity of the product from the supplier (e.g., accompanying documentation, certificate of conformity, test records, statistical records, process control records).

CHAPTER 3: DESCRIPTION (EXAMPLE) OF PROCUREMENT ACTIVITIES WITHIN AN ORGANIZATION



This description is also valid for relations between the supplier and its sub-suppliers.