



ROSATOM

STATE ATOMIC ENERGY CORPORATION "ROSATOM"

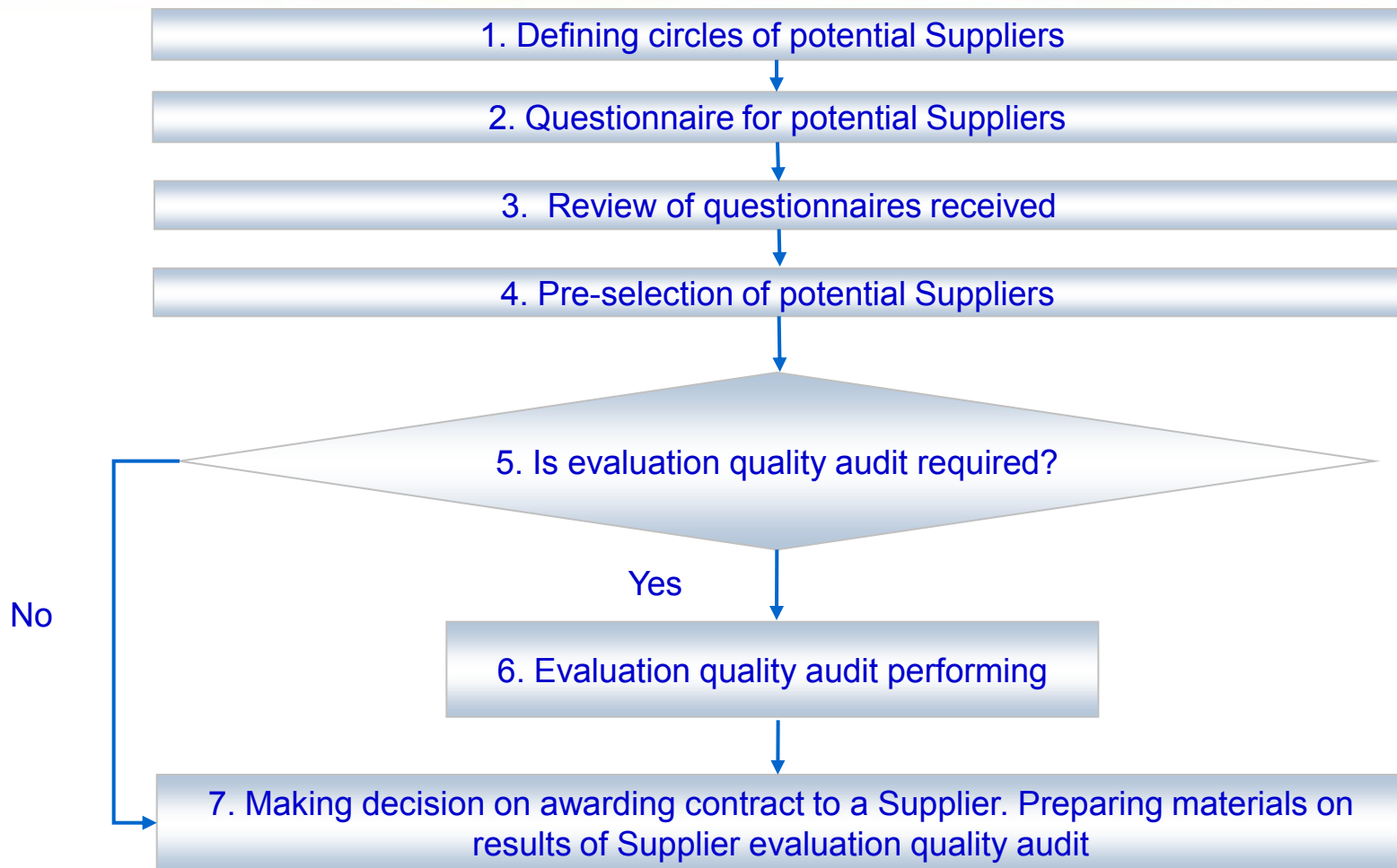
# **Specific Requirements Imposed on Suppliers**

*Rosatom Seminar on Russian Nuclear Technologies and Solutions*

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**April 2-3, 2012**  
**Johannesburg, Sandton Convention Center**

# Algorithm for Suppliers Selection



# Main Documented Requirements to Suppliers

**Legislative requirements**



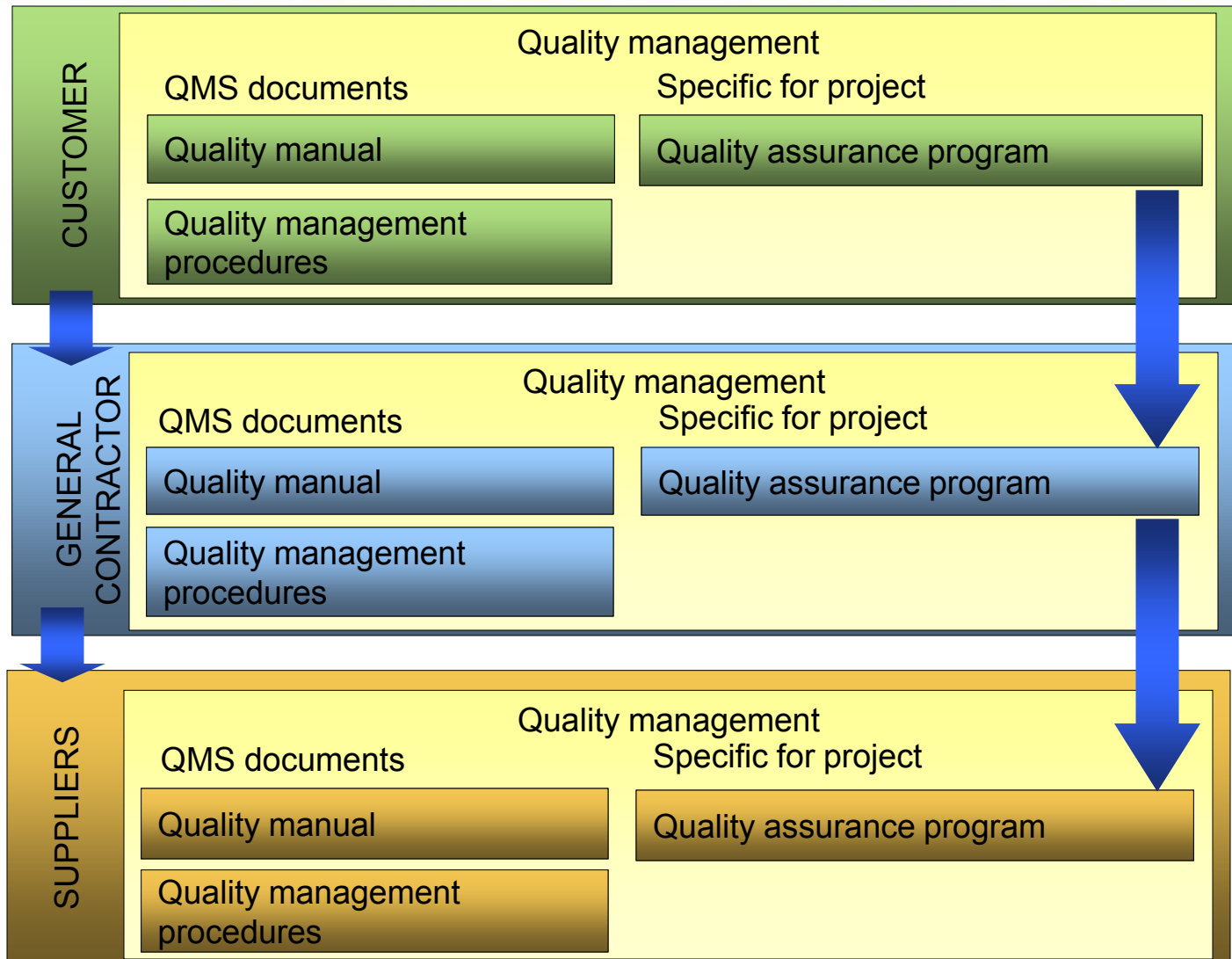
**Contractual requirements**



**Requirements to Suppliers**

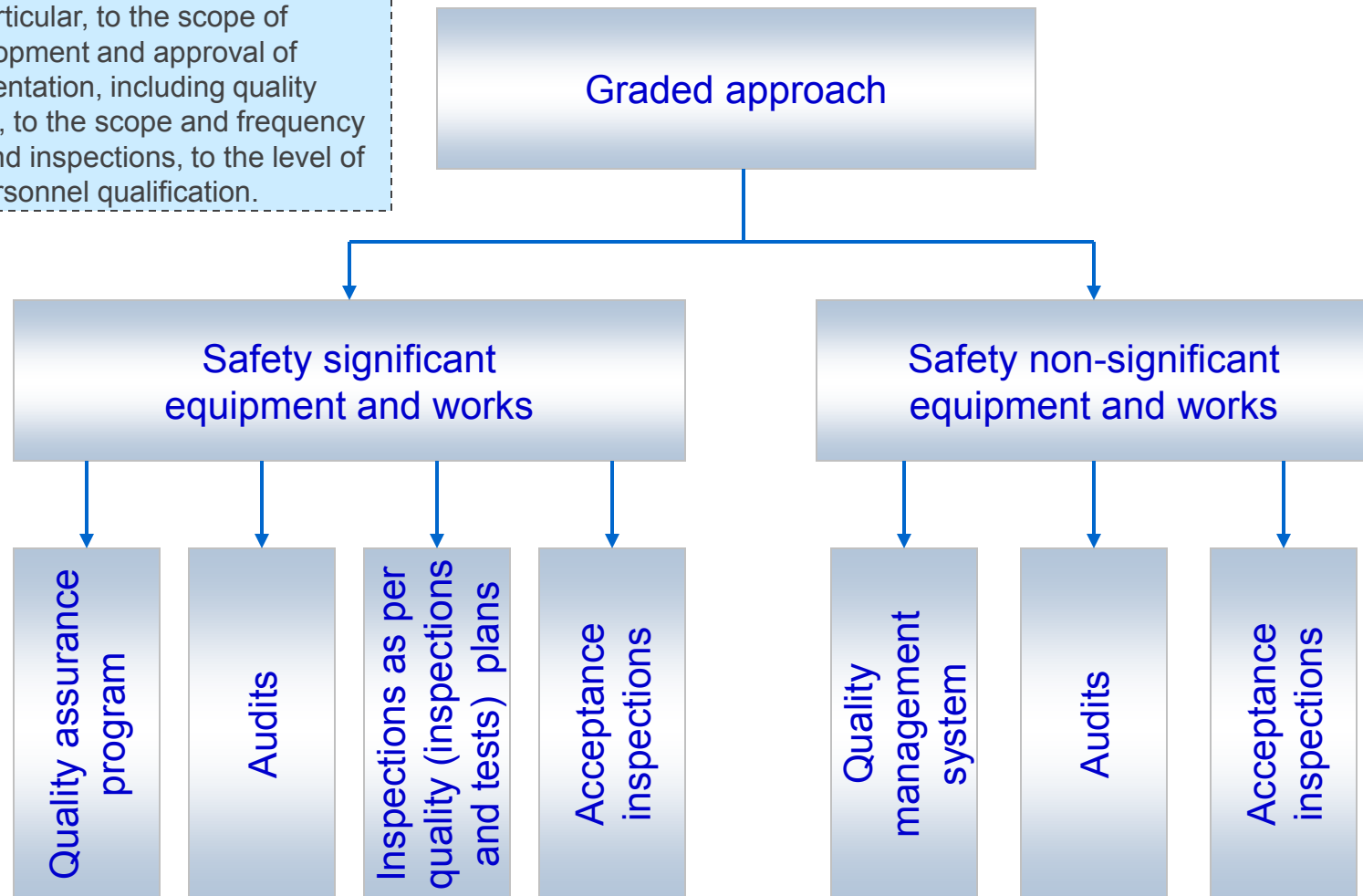
- **Technical requirements**
- **Project management (works implementation schedules and milestones)**
- **Scope of developed technical accompanying documentation**
- **Packing, marking, transportation**
- **Quality requirements**
- **Reports**

# Hierarchy of Quality Management Requirements

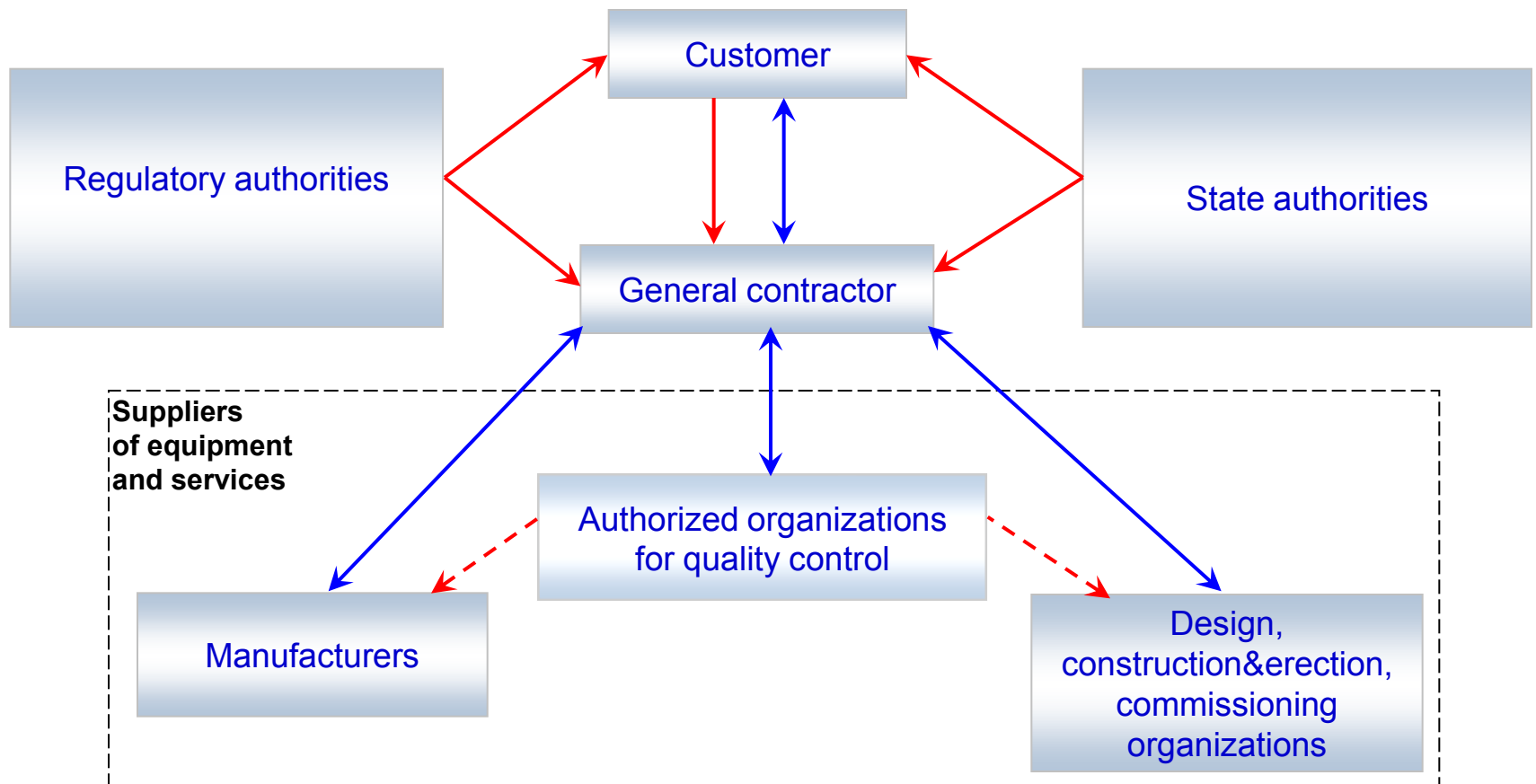





# Graded Approach

Graded approach defines requirements, in particular, to the scope of development and approval of documentation, including quality documents, to the scope and frequency of audits and inspections, to the level of personnel qualification.

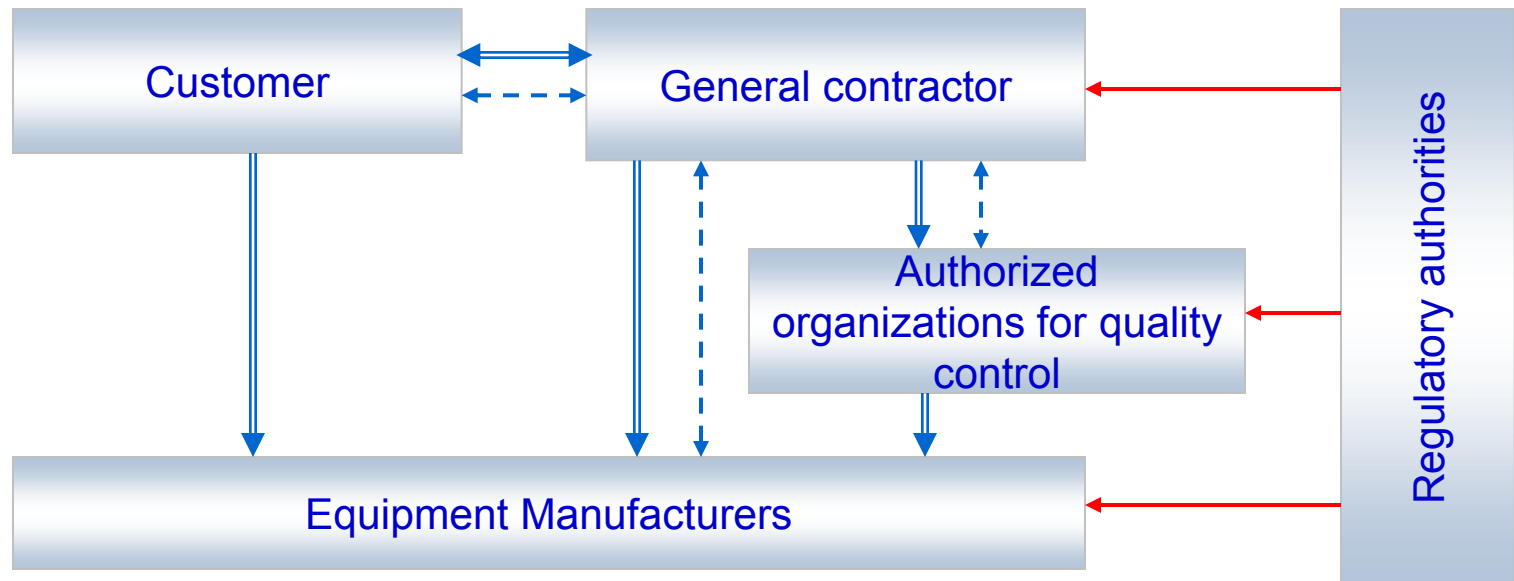





# Major Interfaces During Implementation of Contractual Obligations



-  Regulation
-  Quality control
-  Agreements/contracts

# Interfaces at Quality Control and Acceptance Inspections During Equipment Manufacturing



-  Organization and control of quality, quantity and completeness of equipment and documentation
-  Informational interface
-  Regulation

# Technical Requirements

Technical requirements as minimum describe the following:

- Classification on safety and seismicity, on the base of graded approach;
- Normative documents, defining qualitative and quantitative characteristics of equipment and works;
- Main parameters and characteristics:
  - Technical data,
  - Conditions of operation,
  - Requirements to construction or assembling,
  - Requirements to reliability,
  - Requirements to technological processes, including special processes (welding, etc.),
- Requirements to materials and elements procured (including methods and scope of controls),
- Requirements to marking and packing (preservation), transportation,
- Quality requirements, methods of controls and rules of acceptance,
- Requirements to serviceability,
- Requirements to safety and environmental protection,
- Requirements to technical documentation elaborated.



Requirements as minimum describe the following:

- Necessity of elaboration of a schedule with account of its level and scope of Supplier's involvement;
- Milestones, which enable to control progress of works;
- Requirements to information management system;
- Requirements to elaborated documentation on project management with regard to optimization on general scope of management documentation developed.

# Scope of Developed Technical Documentation Submitted to the Customer

As minimum, this scope includes:

- Technical conditions (specifications) developed on the basis of design requirements with account of regulatory documents of the Customer's country;
- Passport (including results of equipment manufacturing, assembling, tests and inspections);
- Set of drawings (general assembly and per components);
- Elements strength calculations;
- Programs and methods of tests;
- Quality documents, with account of graded approach;
- Instruction on preservation, storage, transportation and depreservation;
- List of spare parts and consumables for assembly (erection) and commissioning, as well as list of spares for guarantee period of operation;
- List of handling equipment for assembly (erection);
- Operation manual, including technical description, guidelines for assembly, operation and technical maintenance.

# Packing, marking, transportation

Requirements as minimum describe the following:

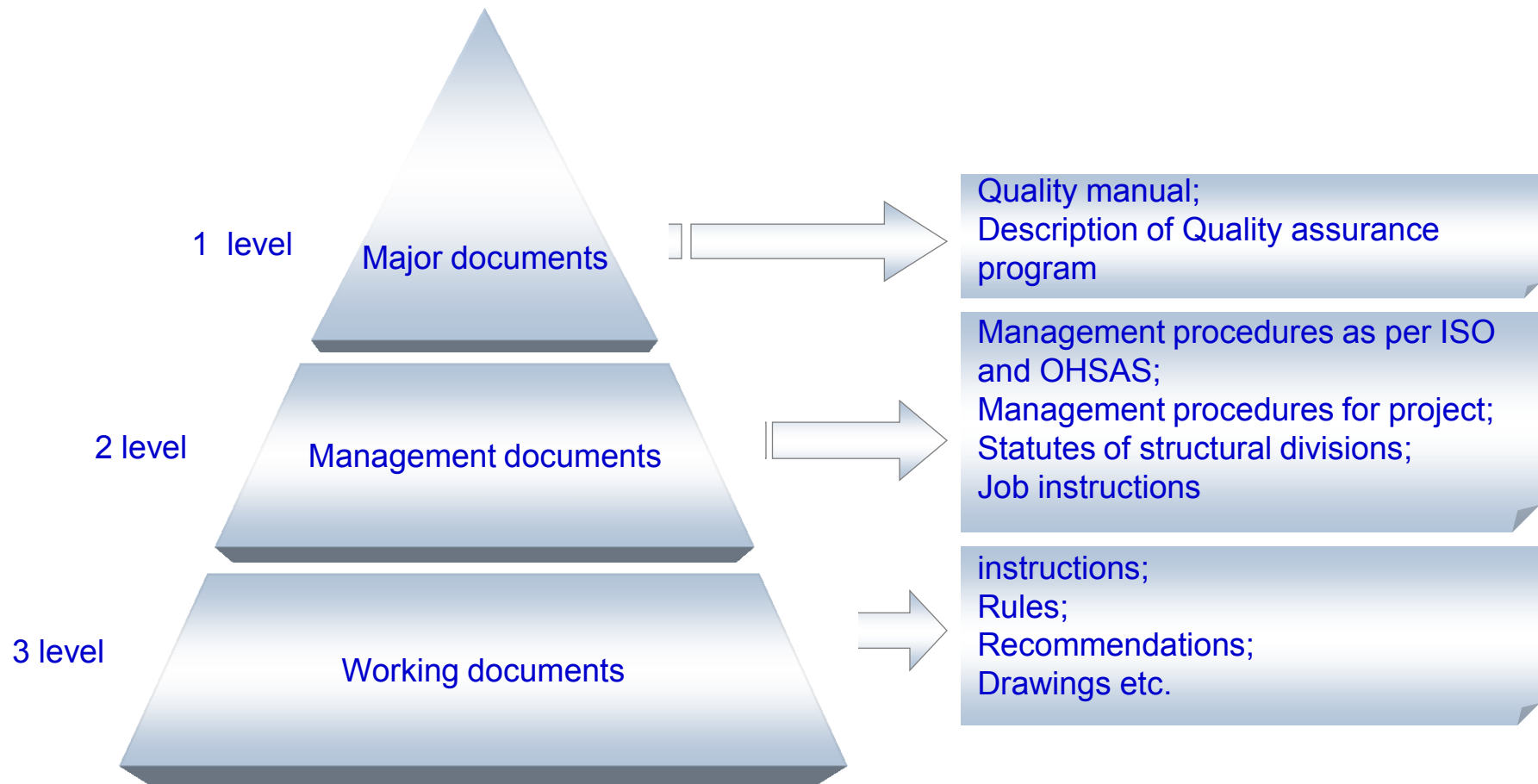
- Means and methods of marking;
- Main parameters of packing depending upon transportation mode;
- Transportation modes depending upon requirements of a contract with the Customer.

Requirements for packing and transportation are defined with account of requirements to safety and environmental protection.

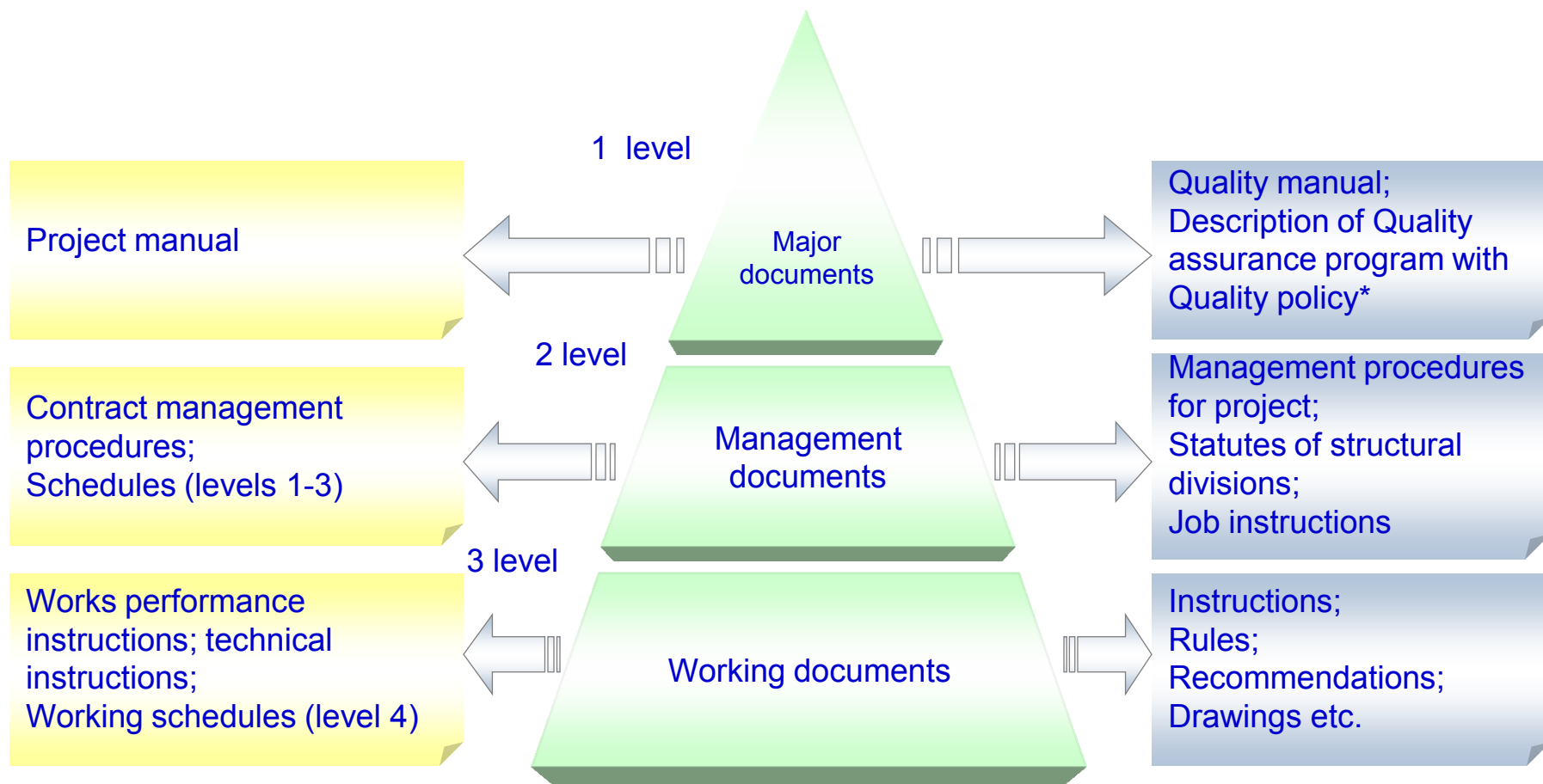
Requirements as minimum describe the following:

- Periodicity and dates of preparation of works implementation reports;
- Formats of reports (including electronic reports);
- Methods and procedures of reports review and approval.

# Hierarchy of Quality Management System Documentation



# Interface Between Project Management and Quality Management System Documentation



\* Quality policy can comprise on policies in quality management, environmental management, occupational health&safety

# Quality Control for Safety Significant Equipment and Works

Quality control during safety significant equipment manufacturing and works implementation is carried out by means of inspections in accordance with procedure, which is developed after the Contract signing, per Quality (inspections and tests) plan.

Quality plan is developed and approved by all the interested sides before commencement of the relevant manufacturing activity.

Quality plan is developed on the basis of Supplier's technological documentation and contains, as minimum, description of main technological and control operations, which have to be controlled during manufacturing by the Customer and General contractor.

# Quality Control for Safety Non-Significant Equipment and Works

For safety non-significant equipment and works only acceptance inspection is carried out upon their completion.

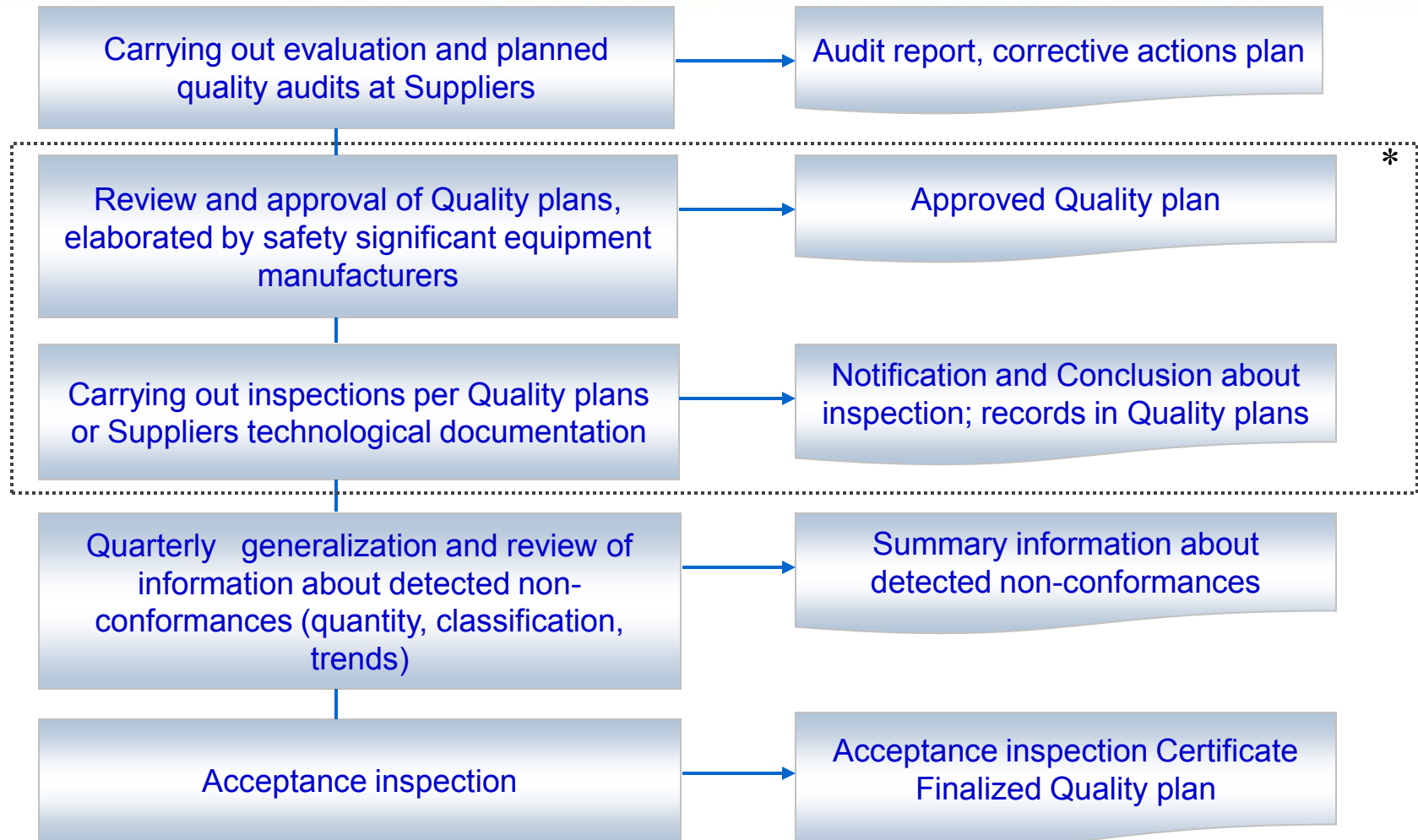
However, at availability, in particular, of:

- complicated technological cycle and/or
- long manufacturing period,

Quality control could be carried out per a Supplier technological documentation (without Quality plan development), which facilitates to control quality of main technological operations.



# Major Control Measures of General Contractor on its Suppliers



\* Only for safety significant equipment or safety non-significant equipment with complicated and/or long manufacturing cycle

# Acceptance Inspection

Acceptance inspection covers (as a minimum) the following stages:

- Check of technological control reporting documentation;
- Visual and (if necessary) measurement control of products;
- Check of product completeness for compliance with the requirements to completeness under the purchase contract;
- Check of painting, preservation, marking of products (for equipment - also packing) for compliance with the requirements of the purchase contract;
- Check of completeness and execution of accompanying and technical documentation for compliance with the requirements of the purchase contract;
- Issuing of Acceptance inspection Certificate.

# Acceptance Inspection Results

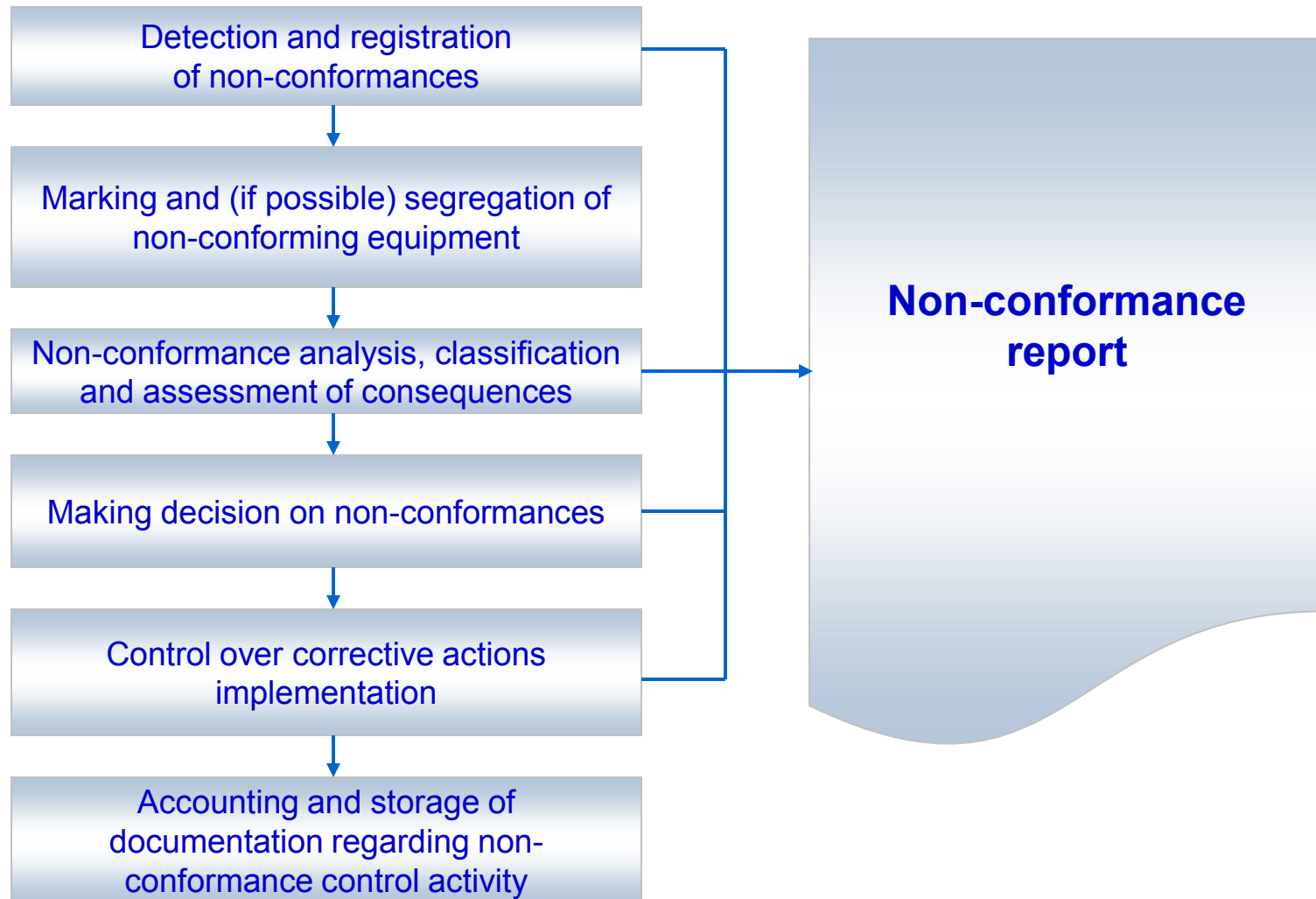
If acceptance inspection **result is positive** – Quality plan is signed (for safety significant equipment) and Acceptance inspection Certificate is issued.

If acceptance inspection **result is negative** – Supplier has to eliminate comments, stated in Acceptance inspection Conclusion) and repeated inspection has to be carried out.

After acceptance inspection for equipment is completed, if necessary inspection of compliance between equipment fastening on a vehicle and contractual requirements is carried out.

# Non-Conformance Control

Activity on non-conformance control includes the following stages:



# Non-Conformance Control

Activity on non-conformance control is aligned with graded approach, which is based on relative significance of non-conformance influence onto NPP safety and reliability.

Non-conformances classification is defined on the basis of requirements set in contracts and standards of the Customer.

As a result of information about non-conformance of equipment or process with the requirements imposed the following decision can be taken:

- **Reject.**
- **Accept with comments or Rework (repair).**
- **Accept as is.**

**Thank You for Attention!**

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