Santos

Onshore Development Contracts Quality Requirements

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Table of Contents:

1 PURPOSE

This document provides details on the minimum Santos Quality Management expectations for contractors to comply with and shall form part of the contract documents issued to the Suppliers/Contractors.

2 SCOPE

The requirements contained within this document shall be applied to the Upstream Development Contracts and the necessary purchase order and/or contract requirements. It may be included either directly (e.g. by inclusion 'as is' within the applicable document as a purchase order attachment or contract schedule) or indirectly by incorporation of all applicable requirements within the purchase order and/or contract terms and conditions.

3 DOCUMENT OWNER

This document is issued and maintained by the Upstream Development Assurance Manager.

4 DEFINITIONS AND ABBREVIATIONS

4.1 Definitions

Definitions of terms used in this document

Term	Definition
Authorised Inspector	Technical expert engaged directly or indirectly by Santos to perform inspection on behalf of the Principal.
Company	Santos Ltd
Contractor	The contracting entity set out in the Contract Details. The Contractor is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor
Design Life	The duration of life the pipework is designed to last based on estimated corrosion and erosion rates for the designed operating conditions.
Free Issue Materials	The materials, equipment and machinery supplied by Santos to the Contractor for the purpose of performing the Works, as set out in Scope of Works.
Manufacturer/Supplier/Vendor	The party that manufactures or supplies product,

	equipment and / or services to perform the duties specified by the Contractor.
myPlant OP	myPlant OP is the Santos designated document control system.
Pipeline	The generic term used to describe linepipe, fittings, valves and associated components that make up a pipeline as defined in AS 2885.
Piping	The generic term used to describe pipe, fittings, valves and associated components which together compromise the piping system within a plant or pipeline station.
Project Documents	The drawings, specifications and other documents that describe the Works and the Project and are listed in the Scope of Works (and, where the context requires, the Approved for Construction Project Documents).
Quality Policy	The overall mission and direction of an organisation with regards to quality as formally expressed by senior management.
Representative	Person or entity employed/contracted by the Principal to carry out specific task(s) on behalf of the Principal.
Santos	Santos Ltd (or other Santos contracting entity as specified in the Contract Details).
Shall	Indicates a mandatory requirement.
Should	Indicates a recommendation.
Subcontractor	Includes any subcontractor, consultant or supplier engaged by the Contractor in connection with this Contract.

4.2 Abbreviations

Abbreviations used in this document

Term	**Definition**
AS	Australian Standard
BoD	Basis of Design
CE	Carbon Equivalent
CPAR	Corrective/Preventive Action Request
DDR	Drawing and Data Requirements

FAT	Factory Acceptance Test
FIC	Field Installation Checklist
GLNG	Gladstone Liquified Natural Gas
HSSE	Health, Safety, Security and Environmental
ID	Identification
IIW	International Institute of Welding
IOM	Installation & Operation Manual
ISO	International Standard organisation
ITP	Inspection & Test Plan
KPI	Key Performance Indicator
MDR	Manufacturing Data Records
MOC	Management of Change
NATA	National Association of Testing Authorities
NCR	Non-Conformance Report
NDE	Non-Destructive Examination
NDT	Non-Destructive Testing
NOI	Notice of Inspection
P&IDs	Piping and Instrumentation Diagrams
PDF	Portable Document Format
PE	Polyethylene
PMI	Positive Material Identification
PSSR	Pre-Start up Safety Review
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
QMS	Quality Management System
RPEQ	Registered Professional Engineer of Queensland

SCN	Shipment Control Notice
SDI	Supplier Document Index
SES	Santos Engineering Standard
SQS	Supplier Quality Surveillance
WPS	Welding Procedure Specification

5 Contractor Quality Management Systems

The Contractor QMS shall outline how the Contractor's Quality Assurance and Quality Control system will be configured, implemented, resourced and verified in order to realise the specified Quality objectives. Contractor shall ensure that as a minimum its QMS addresses the following requirements:

- Implement a Quality Management System (QMS) that meets the requirements of ISO 9001:2015 Quality Management Systems – Requirements.
- Ensure that quality objectives for the work are adequately defined and communicated throughout the organisation.
- Ensure through proper implementation of the QMS that only qualified resources including personnel, tools, equipment and materials, and qualified work processes are used to deliver products and services in conformance with the contract requirements.
- Provides the organisation chart articulating the inter-relationship between personnel and organisations including key Personnel and key Subcontractor participants (with key positions identified and key individuals named).
- Ensure that current revisions (approved as appropriate) of all relevant approved specifications, standards, procedures, and drawings pertinent to the work are available at each work site as pertinent to work being undertaken thereon.
- Ensure that all sub-Contractors engaged in execution of the work are in receipt of current revisions (approved as appropriate) of all relevant approved specifications, standards, procedures, and drawings pertinent to their scope of work.
- Where drawings, documents or specifications are issued in connection with the work, contractor shall ensure that they have been subject to review and approval prior to commencement of these activities.
- Verify and control the quality of the work including sub-contracted items and services by conducting any necessary reviews and verification activities.
- Establish Key Performance Indicators to measure/report the effectiveness of the Quality Management System in achieving the quality objectives.

Moreover, the Contractor shall ensure that all personnel performing quality functions have an acceptable level of competence. They shall also have sufficient and well-defined responsibility, authority and organisational freedom to identify quality problems,

issues or areas of non-conformity and to initiate, recommend and substantiate corrective and preventive action.

Exceptions may be taken by the supplier or contractor of the quality requirements imposed herein by submitting a brief statement of justification for each requirement considered not applicable at bidding stage. Company has the sole right to accept or reject any exception recommended by the Bidder.

5.1 Contractor Quality Plan

The Contractor shall prepare specific Quality Plan and submit to Company for approval where required by the order and detailing the application of the Contractor's Quality Management System to the Scope. The Quality Plan must specifically detail how each element of the quality standard and the contract requirements is applied to the scope and as a minimum must contain but not limited to the following:

- The list of procedures for the scope applicable to each activity including Incoming materials Inspection, welding, NDT, coating, pressure testing, equipment performance tests, and instrument calibration testing.
- Describe how quality records will be reviewed internally, submitted officially to the client where required, and maintained for a defined period.
- The list of Inspection and Test Plans for the Scope including sample Inspection and Test Plans.
- Where applicable, detail how construction work is inspected throughout the construction phases to ensure that all construction work is in accordance with the Contract and that all systems are properly checked and prepared for start-up and commissioning prior to acceptance
- Where applicable, detail how materials and equipment are inspected throughout manufacture, fabrication, and installation to ensure all specifications are complied with.
- Elaborate on how Non-conformances are captured and how affected goods are segregated until the non-conformance/s is/are corrected or until other disposition/s is/are arranged.
- Explain the proper preservation process and maintenance of equipment and material until formal acceptance by Company.
- Details of the organization and personnel involved in the Quality Assurance and Control team. Describe the roles and responsibilities of these personnel.
- Details of major sub-contractors and supply chain management.
- A proposed internal and external audits schedule.
- Described how the goods are inspected and authorised for shipment prior to despatch from the factory.

The Quality Plan must incorporate the requirements of the Purchase Contract and must be available to Contractor's management personnel engaged on the specified Scope, including any agreed Quality objectives and Key Performance Indicators (KPIs).

6 ENGINEERING & DESIGN QUALITY MANAGEMENT

Where design is part of the Contractors Scope of Work, the Contractor shall follow company design standard(s) as specified in any Scope or technical specification(s). Deviations from standard shall follow the Contractor's management of change process including Company approval and sign off.

Where the words SHALL are noted in the applicable company standard(s), this indicates a mandatory requirement. Under no circumstances shall this requirement be circumvented without formal approval and/or approved deviation by Company.

Where there is ambiguity in the technical specification defining the scope of work, the following hierarchy shall apply:

I. Statutory Regulations of Australia and any State as applicable

II. Company Specifications and associated agreed Company amendments

III. International Codes and Standards

Further to the above, where design is required by the Work Under the Contract, Contractor shall elaborate in Quality Management Plan on the process used to develop, validate and manage change to the design input data (i.e. BoD; design philosophies; functional and design specifications; codes of practice and Standards; carried over design documentation etc.), ensuring full integration with Company's change management procedure.

Where applicable, the Contractor shall ensure work is performed by or under direct supervision of a person holding current Registered Professional Engineer of Queensland (RPEQ) status (registered in the appropriate area of engineering) and is otherwise undertaken in compliance with the Queensland 'Professional Engineers Act 2002'.

7 SUPPLY CHAIN/SUB-CONTRACTOR QUALITY MANAGMENT

7.1 Consistent Application of Requirements

Where Contractor procures equipment, materials, goods or services in furtherance of the execution of the work, Contractor shall ensure that any contract or purchasing requirements issued fully incorporate all requirements necessary to ensure that equipment, materials, goods or services supplied have been (as applicable) designed, manufactured and/or fabricated, inspected, certified and documented (including provision of required records to Company) in accordance with the relevant requirements.

In order to allow Company verification that applicable requirements are being communicated through the supply chain, Contractor shall provide Company upon request unpriced copies of any contracts or purchase orders pertaining to the provision of equipment, materials, goods or services in execution of the work.

7.2 Selection and Monitoring of Supply Chain

Contractor shall implement procedures for the selection (where contracts/purchase orders are issued by the Contractor for any goods or services necessary for performance and delivery of the work) and monitoring the quality performance and compliance with applicable requirements of suppliers or sub-Contractors engaged in provision of materials, goods or services as part of the execution of the work. Monitoring shall include surveillance; inspection activities and quality audits of supply chain activities appropriate to the results of the relevant Criticality Assessment.

Contractor shall verify that any materials or goods procured in this way which are intended for inclusion in the finished works fully comply with all applicable requirements prior to their incorporation in the work.

7.3 Supplier/Sub-Contractor Quality Management Systems

Suppliers/Sub-Contractors engaged by Contractor for supply of goods or services in connection with performance and delivery of the Work shall operate to a documented Quality Management System meeting the requirements of ISO 9001:2015.

7.4 Supplier/Sub-Contractor Documentation

Any deliverable documents or data (including testing and other quality records) originating with suppliers/sub-contractors are to be reviewed for suitability and formally approved by Contractor prior to submission to Company.

Contractor shall track all Supplier/Sub-contractor document submittals and maintain a register of distribution and of approval status to ensure that documents are provided and approved in a timely manner and forwarded to Company for review where required by the Contract.

8 Material Certificates and Traceability Requirements

In all cases, the material traceability requirements stipulated in the relevant National, International or Santos standards applicable to the scope of work are to be applied. The following sections contain additional minimum requirements for scopes of work subject to the requirements of this document.

Marked up drawings (e.g. marked up isometric, fabrication or general arrangement drawings) accompanied by a table identifying all components requiring material traceability and providing a method of cross-referencing these items to the applicable material certificates.

The preferred Format for the Electronic Copy: Searchable table in native format (e.g. xlsx, docx) and PDF, and marked up drawings in PDF format.

All supplied material certificates shall be clearly legible in a scanned copy of certificate in PDF format, aligned top to bottom for readability. Where multiple material certificates are combined into a single pdf documents, it shall be bookmarked with a Table of Contents at the beginning of the document. In all cases, a material traceability register with details of the material heat number traceable to each individual component shall be prepared and included in the MDR.

8.1 Material Certificates (Metallic Products)

Material certificates supplied by the manufacturer of the raw material shall be in compliance with EN 10204:2004 unless noted otherwise in the purchase order or contract documentation. These shall include, as a minimum, reference to the applicable material specification, chemical analysis, specification range analysis, mechanical test results and heat-treated condition for the product supplied. Refer to Appendix A for further details on individual equipment or components.

Material certification for pressure containing/controlling items and structural steel must be traceable to each component where specified by means of a unique numbering system.

Material certification shall be provided allowing verification of the chemical composition by heat number etc. (for metallic components) and specific mechanical properties including impact test results where required.

It shall be possible to determine from material traceability records the location of the material/component within the overall assembly.

Where pressure containing/controlling items are welded, material certification for weld consumables shall be traceable to the welded joint and retained by the manufacturer/fabricator for review and included in the Manufacturer Data Records (MDR).

Material certification for line pipe shall demonstrate conformity with restricted CE value of ≤0.39% (following IIW formula) unless specified otherwise in the purchase order or other contract documents.

8.2 Material Certificates (PE Pipe & Fittings)

Pipe and Fitting Manufacturer's Material Certificate shall include as a minimum reference to compound used in manufacture, reference to applicable Process Verification and Type Test certificates and reference to the standard applicable to the product supplied.

PE Pipes and Fittings (including fabricated fittings and electrofusion weld fittings) shall be traceable to applicable Batch Test Result, Type Tests and Process Verification Tests as required by the applicable Standard. Type Test certificates are to be provided on request.

Applicable batch release test results shall be included in material certificate where applicable and Type Test certificates are to be provided on request.

8.3 Note on Free Issue Materials

Material or equipment that has been free issued by Santos directly (or has been procured and supplied on Santos' behalf by a Santos Contractor or Supplier organisation) to a supplier/contractor for inclusion in the final deliverable documents must be accompanied by sufficient documentation to allow complete supply of all required documents for the scope of contract.

The recipient organisation should incorporate this documentation into the final records as required.

If documentation is not provided or is deficient, this should be brought to the attention of Santos Procurement/Contract Representative and Santos Upstream Development Quality Team as soon as possible (this may be done via e-mail to GLNG.Upstream.NCRs@santos.com).

9 Inspection & Test Plans

For each individual work location and scope, the Contractor shall submit for Company's review and approval an Inspection & Test Plan (ITP) detailing inspections and tests to be undertaken and the Inspection and Test certification to be produced. It shall list the sequential activities performed in the execution of the work and include descriptions of sample locations. The ITP shall identify all relevant control documents, testing standards, acceptance criteria, check points (hold/witness/surveillance etc.) and associated records.

Company shall advise Contractor (by mark up of submitted ITPs or through other formal correspondence) of the activities, tests, and inspections that Company's representatives shall be given the opportunity to attend. These shall be defined as Hold (H), Witness (W), Surveillance (S) or Review points as follows:

- A "Hold" point is defined as a point in the work execution or testing cycle beyond which it is not permitted to proceed without the presence of a nominated witness, unless written confirmation from Company's representative of non-attendance has been received.

- "Witness" point is defined as a point in the work execution or testing cycle where the Company's nominated witness representative must be given the option to attend. For repetitive activities witnessing of a percentage of the total may be specified.

- "Surveillance" point is defined as a spot check activity for which the Company will identify stage inspections to take place within the ITP on a monitoring basis. No formal notification to Company is required.

- "Review" point is defined as a point in the work execution or testing cycle at which a record of the activity is required to be reviewed by the Company's nominated representative. The nominated representative is required to review/endorse these records, which shall be presented to him by the Contractor at the earliest opportunity.

The Contractor shall provide Company with seven days advance notice of Hold and Witness Points, or fourteen days advance notice if activities are being performed outside Australia. Contractor formal notice shall provide details on the location of the works, the address and the person(s) representing the Contractor.

The Contractor shall also identify within Inspection and Test Plans (submitted to Company) the extent of Contractor's own Inspection review, Surveillance, Witness and Hold Points to be implemented.

Until the Inspection & Test Plan has been reviewed and approved by Company, Contractor and Contractor's Suppliers/Sub-Contractors shall not commence execution of the work and activities described therein. ITPs shall be resubmitted for re-approval by both Contractor and by Company if revisions to previously approved versions are made.

Once work has commenced, Contractor must immediately notify Company should any situation arise whereby execution of planned Inspection & Test activities may be delayed or hampered (e.g. non-approval of test procedure, equipment failure, deterioration of site conditions, inclement weather etc.).

ITP activities shall be signed progressively, and fully signed version of all ITPs shall be included in the MDR.

10 Quality Records

Contractor/Fabricator shall maintain all relevant fabrication records including Quality Management reports i.e. NCR, Inspection Reports, Management Review, Variations, etc. in line with their internal quality management system and ISO 9001:2015 requirements. This information shall be archived at manufacturers facility to a minimum timeframe that is in excess of the manufactured product liability period. Vendor shall always make available any information relating to material purchase or delivery for Buyer review and comment.

All quality records supplied by the vendor/contractor to the company shall be in the English language, with high quality scanning, particularly in the case of pdf files. These documents should be text searchable format.

All manufacturing records captured in the MDR or site construction dossier shall be paginated with book marks in a combined pdf file with consistent page orientation (readability) in the MDRs, IOMs (Installation and Operation Manuals etc.).

Upon receipt of Purchase Order, the successful bidder will be required to provide a Supplier Document Index (SDI) in line with contract Drawing and Data Requirements (DDR), indicating every planned document and accompanying submission timeframe.

The information shall be furnished in a similar form from all sources to improve clarity and foster efficient utilisation of the complete documentation.

Additional data as required for specific purpose shall be made available, if requested.

11 Weld Mapping and Weld Traceability Requirements

11.1 Welding

The contractor shall formally submit an approved Welding Procedure Specification (WPS) to Santos for each type of welding within the limit of essential variable prior to commence of welding activity.

The Contractor shall document and maintain a record of all welding activities on a daily basis in accordance with the scope of work, specifications and construction drawings.

Each welder shall be qualified and identified with an individual unique number. All welders qualified to weld shall be listed on a Welder/Operator Register. A copy of this register shall be available for review throughout the works. The latest revision copy shall be placed in the MDR. Contractor shall monitor the currency of welders' qualification and the welders' qualification continuity sheet shall be updated progressively and available for company review.

The welding details shall be documented on an approved as built weld spreadsheet. Any additional welding details should be included on this sheet.

Where sampling of welded joints is required for non-destructive testing, such sampling shall be consistent over the duration of shop fabrication and representative of all types of welded joints.

In carrying out field welding the following information shall be as a minimum displayed adjacent to the welded joint.

- Weld number
- Welder ID number
- Date & time welded
- Welding Machine number (PE Welding)
- Line identification number (where multiple lines are laid in the one trench excavation)

11.2 Weld Mapping

A detailed map shall be used to indicate all welded connections. The following methods can be used: Isometric drawing, construction drawing, P&ID, alignment sheets, approved hand drawn sketches. This record shall be updated on a daily basis and be fully auditable by the Company.

Welded and fabricated connection spooling e.g. Manifolds, Risers, High Point Vents, Low Point Drains, Crossovers, Branch Connections etc. shall be fully traceable and detailed; weld number, welding operator, date & time welded, welding machine used, status of NDT, weld repairs, weld location by northing/Easting coordinates or KP point as per drawing number and designated connection number; e.g.

Manifold M23, KP 1500, Drawing D3E-V-PA-30101-13

11.3 Weld Traceability

A weld traceability register shall be provided for both piping and structural components where supplied items or construction activity involve welding. The requirements for weld traceability apply to all metallic and non-metallic material fabrication.

The register shall provide details of joint number, welder ID, WPS number, welding consumable batch number and all test records including repair weld carried out on the joint, penalty shots (where applicable) etc.

Throughout the entire project, the field construction contractor shall be able to identify every PE fusion weld by weld number, welding operator, date & time welded, welding machine used, status of NDT, weld repairs and weld location by northing/Easting coordinates. This record shall be updated on a daily basis and be fully auditable by the Company.

12 Flange Management Traceability & Mapping Requirements

12.1 Traceability

The Contractor/Fabricator shall document and maintain on a daily basis a record of all flange management activities in accordance with the scope of work, specifications and manufacturing/construction drawings.

Throughout the entire project the Contractor shall be able to identify every flange or bolted connection.

Each flange connection shall be identified and numbered as per its structure type e.g. Manifold Number #8, Low Point Drain #4, High Point Vent #7 etc.

All flange connections shall be listed on a Master Register.

FICs shall be placed behind the register in the MDR. A copy of this register and FICs shall be available for review throughout the works. The latest revision copy shall be placed in the MDR and be fully auditable by the Company.

* Note: all Registers and FICs shall be submitted to the Company for review and acceptance prior to commencement of the works.

12.2 Flange Connection Mapping

All flanged and bolted connection as part of manufactured equipment, packages or site installation work included but not limited to FICs i.e. Manifolds, Risers, High Point Vents, Low Point Drains, Crossovers, Branch Connections etc shall be fully traceable and detail of following information as a minimum recorded;

- Location
- Drawing Number. *Refer standard structure drawing i.e. Manifold, LPD, HPV etc
- Structure Identification Number
- Flange Class #
- Flange Size
- Gasket Type
- Bolt/Stud Size, Length & Grade
- Number of Bolts/Studs
- Final Torque Value * Torque values should be recorded on FIC at 25%, 50%, 75% & 100%
- Lubrication Used
- Torque Device Used. * Calibration certificates shall be documented in MDR

- Signed off FIC by Operator/ Installer and Supervisor.

13 Pressure Testing Requirements

13.1 General Requirements

The Contractor shall regularly document and maintain a record of all pressure testing activities in accordance with the scope of work, relevant standards, Santos technical specifications and construction drawings.

Each pressure test shall be identified with an individual test number. All pressure tests shall be recorded on a master register, updated on completion of each individual test. A copy of this register shall be available for review throughout the works by the Company. The latest revision copy shall be placed in the MDR.

All pumps and ancillary equipment, including gauges, recorders and temporary safety valves required to safeguard the piping and vessels, and any other necessary items required to complete the pressure tests.

All pressure recorders and pressure gauges shall be calibrated, certified and traceable to a National Association of Testing Authorities (NATA) standard, and performed at no longer than yearly intervals. Every instrument and gauge shall display an identification label stating the date when last tested and the order of accuracy over the range of the instrument. All calibration work shall be performed and certified by a NATA laboratory or a company approved as competent to carry out the work.

Field testing of hydrostatic test gauges shall be by Instrumentation Qualified Companies with a dead weight tester, NATA Calibrated Test Gauges and Qualified Instrument Technician. Calibration Certification shall cover at least the requirements of Santos FIC for Pressure Gauges.

Two hydrostatic test gauges shall be used. If there is a variance, both gauges shall be re-calibrated immediately. In order to closely monitor changes in the pressure and increase the accuracy of reading, it is recommended that dial pressure gauges have a pressure range not greater than twice the test pressure applied.

“Test Gauges” shall be stored and transported correctly in protective cases at all times. Pressure test instruments shall be check calibrated if dropped, knocked or otherwise damaged or if the deviation between the instruments exceeds the accuracy limits placed on each instrument.

All instrumentations used during pressure testing shall be calibrated as described earlier and the current certificate shall be attached to the test report and included in the MDR.

The Hydro test details for each system shall be documented on a hydro test report template approved by Santos.

* Note: A developed field testing system shall be marked on P&ID and submitted to the Company for review and acceptance prior to commencement of the works.

13.2 Pressure Test Mapping

A detailed map shall be used to indicate all hydro tested sections, limits of tests i.e. end point to end point (Battery Limits).

Where tie-in's or flanged/bolted connections have not been hydro tested, these shall be fully documented. This record shall be available to the Company throughout pressure testing and prior to commissioning.

The following methods can be used: Isometric drawing, construction drawing, P&ID, alignment sheets, approved hand drawn sketches. This record shall be updated regularly and be fully auditable by the Company.

14 Quality Audits

Contractor shall carry out Quality systems compliance, HSSE and technical audits to verify that the requirements of the contract and its related plans and processes are being correctly executed.

Contractor's Quality Audit shall be sufficiently comprehensive to confirm adequacy, implementation and effectiveness of Contractor's and Subcontractors' Quality Management Systems to meet the Quality objectives and to assure the Quality of the Work Under the Contract.

Contractor shall submit a Quality Assurance audit schedule within 30 calendar days of Contract effective date for Company information. This should include Quality audits to be performed by Contractor on its own activities ("First Party Audits") and those audits to be performed by Contractor on its Subcontractors' activities ("Second Party Audits").

The purpose of these audits shall be to provide verification of compliance with requirements, procedures, quality plans, inspection and test plans and associated control procedures including those applicable to sub-Contractors/Suppliers.

In implementation of this plan, Contractor shall provide Company with advance notification of scheduled and unscheduled audits and shall provide Company with access to attend, observe, and participate at Company discretion, all Contractors' audits related to the work. Contractor shall provide Company with copies of audit reports concerning activities pertinent to the execution of the Work upon request.

15 MANAGEMENT OF NON-CONFORMITY

Contractor QMS and QMP shall include formal Non-Conformity and Corrective Action processes consistent with Company's requirements for identifying, documenting, appraising and managing Non-Conformities or circumstances which are likely to lead to Non-Conformities.

15.1 Contractor Non-Conformance Reporting

Contractor shall implement a Non-Conformance Reporting procedure, applicable to its own activities, and its suppliers/sub-Contractors, for recording and tracking non-compliance with applicable requirements.

Contractor shall maintain a register of Non-Conformance Reports (NCRs) which shall be submitted to Company Quality Representative on a monthly basis as a minimum and, where required, upon request. Contractor shall provide to Company copies of all Contractor and Supplier/Sub-Contractor Non-Conformance Reports raised pertaining to the work upon request.

15.2 Company Issued Corrective/Preventive Action Requests

Where non-conformity is detected as part of Company Quality Assurance activities, for example during audit of Contractor's or Supplier's/Sub-Contractor's activities, or where a situation has the potential to result in non-conformity, Company may issue a Corrective/Preventive Action Request (CPAR).

Contractor shall provide initial response to any issued CPAR within fourteen days. An examination of root cause of the non-conformity, and a proposal for immediate and long-term action required to correct or prevent the non-conformity (as applicable) shall be provided by Contractor.

15.3 Continuous Improvement

Contractor shall develop and maintain a suitable quality management improvement process. Contractor shall monitor and measure the suitability and effectiveness of its QMS and QMP, to provide feedback on the findings and make improvements as necessary to eliminate the causes of Non-Conformities in order to prevent recurrence.

Lessons learnt from work tasks and activities are to be captured to ensure continual improvement is applied to repetitive activities to eliminate recurrence of Non-Conformity.

16 QUALITY REPORTING

Contractor shall report its Quality performance to Company on a monthly basis as follows:

- a narrative summary of performance against the agreed KPIs;
- a narrative summary of internal and external Audits performed against the Quality Audit and Review Schedule;
- a status summary of non-conformity and corrective action requests including a statistical trending analysis capable of driving improvement; and
- a summary of MDR status against manufactured and released goods.

17 PRE-SHIPMENT RELEASE ACTIVITIES

Contractor shall prepare and submit for approval an agreed pre-shipment document. This shall detail Contractor's review of quality documentation and final inspection activities associated with material and equipment being provided for inclusion in the work.

Contractor is required to submit the notification of inspection (NOI), 7 days prior to domestic material availability and 14 days prior to international material availability. The NOI should be submitted with the following documentation;

- Material packing list (Santos acceptable template) including collection address and contact person information.
- Any documentation and/or instructions specific to packaging, handling, lifting, shipping or transport requirements.

- Confirmation of all manufacturing record documentation submission as required by the contract DDR prior to shipment. This also includes but not limited to manufacturer's statement of compliance and Inspection release certificate signed by contractor Authorised person and endorsed by the Company representative. Photographic evidence of completion and/or other documentation may require for complex or packaged equipment.

Release of material is authorised when Santos issue the SQS inspection waiver or SQS release report in conjunction with the Shipment Authorisation (SCN).

It shall be noted that any activities relating to material packaging and preservation are the responsibility of the contractor and need to consider the local environment (exposure to heat, humidity, sunlight, rain and dust) for a period of 6 months.

The pre-shipment release document shall include provision for Company review of quality documentation, opportunity for Company physical inspection of material or equipment, and Company issue or endorsement of a Shipment Authorisation prior to shipment of material or equipment from point of manufacture/fabrication or original supply.

Note that Company issue or endorsement of Shipment Authorisation shall not release Contractor in any way from any of his obligations and liabilities under the Contract (including any warranty obligations) or at law, nor imply acceptance of defective work.

18 COMPANY ACCESS AND INVOLVEMENT

During the life of the Contract, Contractor shall afford Company or its nominated representative access to any part of its works engaged in activities relevant to the scope of work for the purpose of ensuring compliance with Contract requirements.

The Contractor shall ensure that for any purchase order or sub-contract issued in furtherance of execution of the work (for example, supply of equipment or material for inclusion in the work, etc.) that the same level of Company access is afforded to any supplier's/sub-Contractor's premises/worksite for the purpose of execution of activities listed below.

Company's involvement with the Contract may include (but is not limited to) any or all of the following activities, all of which shall be considered equally applicable to suppliers/sub-Contractors (Company shall in each case give reasonable notice of seven days as a minimum):

- Attendance at pre-production meetings and site pre-execution meetings where applicable;
- Assessment/audit of the whole or any part of the Contractor's and supplier's/sub-Contractor's Quality Management System that may affect the work;
- Ongoing verification audits;
- Attendance, in an observing capacity, during Contractor's internal auditing of elements of his Quality Management System or aspects of the work performed by suppliers/sub-Contractors;

- Inspection visits in accordance with agreed Inspection & Test Plans;
- Surveillance visits with short notice and document reviews as deemed necessary by Company;
- Final Inspection;
- Attendance at release for shipment; and
- Final documentation review.

19 MATERIAL & EQUIPMENT PRESERVATION

Material & Equipment can suffer rapid deterioration unless correctly preserved. Therefore, the preservation of equipment shall be treated as a significant event with extensive planning and budgeting.

At all stages prior to handover during production, transportation, storage, construction and installation, Contractor shall ensure that material and equipment is kept in such a fashion that their conformity is preserved, and that applied preservation is maintained as required.

Stored material shall carry identification which is maintained. Equipment shall be covered to prevent deterioration through build-up of dust or dirt and moisture. Equipment should be stored a minimum of 100mm off the ground to avoid water contamination. It should be ensured that open fittings face downwards to prevent them filling with water. All flange faces should be coated with preservatives and covered with plastic cap or plywood or similar covers. Flanges on stainless steels should be securely covered to prevent moisture ingress.

Inert atmospheres may be used to preclude the presence of moisture and/or oxygen. The inert atmosphere must be dry and free of harmful contaminants. Nitrogen is the most commonly used inert atmosphere. Lubricating oil may be used to protect equipment, provided it is free of contaminants that promote corrosion. An alternative may be to use oil-based products, such as water repellent or emulsifying oils.

Vapour phase corrosion inhibitors (VCIs or VPIs) can be used for the protection of turbines, compressors, bearings, heat exchangers, vessels, pipes, etc. VCIs are crystalline powders which slowly vaporise into the enclosed space inside a package. Vapour loss of VCI from non-air-tight enclosures may be unacceptable and thermal decomposition could occur.

As a minimum this shall include adherence to manufacturer’s recommendations for preservation and storage, or in absence of any special requirements, any actions required to monitor and maintain product conformity. Minimum activities shall include inspections during storage and maintenance of preservative measures. Records of such inspections and activities and their results shall be kept and made available to Company upon request.

Appendix A MINIMUM MATERIAL CERTIFICATION REQUIREMENTS

Group	Item	Type	Comments
Combustion gas turbines	High stress, high temperature components.	3.1	
	All other parts	Nil	Note 1
Reciprocating compressors	Pressure containing parts	3.1	Note 9
	All non-pressure containing parts	Nil	Note 1
Centrifugal compressors	Pressure containing parts.	3.1	
	Parts not in contact with compressed gas	Nil	Note 1, Note 2
	Parts in contact with compressed gas and rotating components.	3.1	Note 3
	Impact tested parts.	3.1	Note 4
	Main nuts and bolts.	3.1	
Reciprocating pumps	Pressure containing and impact tested parts	3.1	Note 5
	All other components	Nil	Note 1
Centrifugal pumps	Pressure containing and impact tested parts.	3.1	Note 5
	Non-ferrous materials in non-hazardous and non-hydrocarbon SERVICES	Nil	Note 1
	Shafts and impellers	3.1	
	Wear rings and shaft sleeves	3.1	
Process instrumentation	Electronic or electrical instruments for use in hazardous areas.	3.2	Hazardous area certification.
	Pressure retaining components (including bolting)	3.1	
	Other equipment	Nil	Note 6
Switch/control gear and electrical instruments	Certified electrical equipment for hazardous areas	3.2	Hazardous area certification
	Electrical switchboards, electronic control panels, controllers, PLCs	3.2	Note 7
	All other equipment	Nil	
Wires, cables and accessories			
	Cable (high voltage)	2.1	>1000 volts
	Cable (low-medium voltage)	Nil	< 1000 volts
Vessels	Shell plates, heads and other pressure retaining components	3.1	
	Internals not welded to pressure parts	2.2	
	Internal filters/pads etc. (non metallic)	2.2	
	Lifting lugs, tubes, internals, skirts and any non-pressure parts welded to pressure containing parts	3.1	
Flanges	Carbon steel	3.1	
	Stainless steel (304, 316L etc)	3.1	
	High alloy (Inconel etc)	3.2	
Carbon steel line pipe	API X60 and over	3.2	
	All other grades	3.1	
High alloy or CRA line pipe	All grades and sizes	3.2	
Pipe and fittings	Steam service	3.1	
	Process (including hydrocarbon service)	3.1	

	Instrumentation tubing	2.2	
	Ancillary SERVICES (e.g. firewater, lube oil)	3.1	
	Malleable iron (ASTM A197, BS 1740)	2.2	
	Tube adaptors	2.2	
	Compression fittings	2.2	
	UPVC	2.2	
Valves	Pressure retaining components	3.1	Body, bonnet, cover
	Moving components	3.1	
	Seals - metallic	3.1	
	Seals - soft/non-metallic	2.1	
Structural steel	Primary and secondary.	3.1	Includes tubular and sections
	Tertiary and miscellaneous	2.2	
Bolting	High tensile.	3.1	Type 2.1 certificate needed for coatings
	Pressure retaining duty	3.1	
	General structural applications	2.1	
Gaskets	CNAF	2.1	
	Neoprene	2.1	
	Ring joints, soft iron	2.1	
	Ring joints, stainless steel, Inconel etc	3.1	
	Spiral wound	2.1	
Hoses	Hose material	3.1	
	Hose with fittings	3.1	Note 8
Welding consumables	All types and grades.	3.1	

Applying and EN 10204

During the execution of the SCOPE, the CONTRACTOR shall use the latest published edition of EN 10204. Where reference is made by the CONTRACTOR to EN 10204, the CONTRACTOR shall disclose what edition had been utilised as reference.

Notes to Appendix A:

1. Certification type NIL unless specified otherwise in technical specification or data sheets
2. Diaphragms or bearing housing
3. Shafts, impellors balance pistons, shaft sleeves, internal bolting
4. Rotor shafts, impellors, shaft sleeves
5. Where pumps are to be used in critical SERVICES, or if additional impact testing is specified for any pump materials then the Purchaser may require 3.2 certification
6. Unless defined in the equipment data sheet
7. Certification type 3.2 required for selected and critical items as deemed necessary by the Requisitioning Engineer
8. Including bursting test certificate
9. Crankshaft and cylinder bodies

Appendix B NOTICE OF INSPECTION (NOI)

TO:		EMAIL:		
PO No:		Rev.		
SUPPLIER	COMPANY:			
	CONTACT PERSON		TEL:	
			E-MAIL:	
SUB-SUPPLIER *(If applicable)*	COMPANY:			
	CONTACT PERSON:		TEL:	
			E-MAIL:	
LOCATION OF INSPECTION	☐ SUPPLER		☐ SUB- SUPPLER	
	ADDRESS:			
SUBJECT	ITEM DESCRIPTION:			
	JOB/SHOP ORDER No:			
	INSPECTION DESCRIPTION:	SQS Inspection or Waiver determination to be issued on receipt of; • Certificate of Conformance/Compliance • Material Test Reports • Photographic Evidence of Completion • Packing List • FAT/iFAT Predetermined contractual agreements to apply where inspection release requirements differ from above.		
	ITP/ACTIVITY No:			
	INSPECTION TYPE:	☐ FAT ☐ HOLD ☐WITNESS		
	DATE & TIME*:	➢		

***NOTE: THE NOTICE OF INSPECTION (NOI) IS TO BE E-MAILED TO THE SANTOS RESPONSIBLE ENGINEER IN ACCORDANCE WITH NOTIFCATION PERIOD REQUIREMENTS NOTED BELOW:**

1 WEEKS' NOTICE FOR DOMESTIC AND 2 WEEKS' NOTICE FOR OVERSEAS PACKAGES TO BE RECEIVED BY SANTOS. FAILURE TO COMPLY MAY RESULT IN REJECTION OF NOI.

Santos

Appendix C SQS RELEASE REPORT

TO/LOCATION:	P.O. NO:
FROM:	ISSUED TO:
DATE:	SUPPLIER:
cc:	LOCATION:
	CLIENT:

PO BOM Item #	Qty.	Description	PO BOM Item Code	Supplier S/O No.

This release indicates that the equipment has been surveyed to the degree outlined in the surveillance plan/assignment instructions and its issuance does not imply that 100% surveillance was performed or that the equipment/material was accepted on that assumption.

List primary documents used for release (drawing or document, revision, and Santos review code):

DEVIATIONS TO THE ABOVE PURCHASE ORDER REQUIREMENTS: (NOTE WHO AUTHORIZED THE DEVIATION)

ORDER STATUS AND FINAL CONDITION

	NO NCR's OUTSTANDING ON ITEM(S)
	ORDER PARTIALLY COMPLETE. OTHER REPORTS TO FOLLOW.
	CONDITIONAL RELEASE, INCOMPLETE DELIVERABLES, DESCRIBE BELOW.
	ORDER COMPLETE. FILE CLOSED.
	FLANGE FINISH Ra.

NOTE: RECORD THE NAME, TITLE AND COMPANY OF THE PERSON RESPONSIBLE FOR RECTIFICATION OF OPEN ITEMS ON THE CONDITIONAL REALEASE COMMENTS BELOW.

CONDITIONAL RELEASE COMMENTS. Attach email accepting conditions as required.

Released By	Company	Signature	Date

Appendix D LETTER OF COMPLIANCE

<Insert Company Logo>

<Insert Date>

Mr. Robert Douglas
Assurance Manager
Santos Ltd.
Level 22/32 Turbot St.
Brisbane QLD 4000

Subject: Letter of Compliance – Purchase Order or Contract Number <Insert Number>

Dear Robert,

The purpose of this letter is to certify that the equipment supplied in the above order for Santos Ltd. has been inspected and approved to meet the specifications and requirements.

Best Regards,

<Insert Company Representative Name>
<Insert Title>
<Insert Company Name>