SCHEDULE Q

QUALITY REQUIREMENTS

TABLE OF CONTENTS

1. General

2. Quality Management System Requirements

3. Documentation Requirements

4. Management Responsibility

5. Resource Management

6. Project Realization/Execution

7. Measurement, Analysis and Improvement

Attachment I CONTRACTOR and Subcontractor Quality Personnel Qualification Requirements

Attachment II COMPANY Standards and Procedures Containing Quality Requirements

Attachment III Quality Requirements for CONTRACTOR Supplied Materials

Attachment IV Quality Requirements for the Construction Phase

Attachment V Summary of Quality System Deliverables

SCHEDULE Q

QUALITY REQUIREMENTS

1. GENERAL

1.1 This Schedule describes COMPANY’s minimum requirements for CONTRACTOR’s Quality Management System as set forth in Paragraph 2.

1.2 For the purposes of this Schedule “Q”, the term “COMPANY” shall mean either SAUDI ARAMCO, Aramco Services Company, or Aramco Overseas Company as indicated on the signatory sheet of Contract.

1.3 CONTRACTOR shall be totally responsible for the quality of WORK required by this Contract.

1.4 CONTRACTOR shall inspect, test and accept all parts of the WORK as defined in Schedule “B” and individual Release P.O. where applicable, including its subcontractors' work, in conformance with all drawings, specifications and standards applicable to the WORK.

1.5 COMPANY shall be entitled to have the Company Representative or his nominee present at all locations where CONTRACTOR or its subcontractors and suppliers are engaged in the performance of the WORK, at any and all times, to review all aspects of CONTRACTOR's Quality activities and to witness whatever inspection and testing is required by this Contract. COMPANY retains the right to conduct whatever additional tests or inspections it deems necessary to assure that the materials and personnel performing the activities meet the requirements of the Contract. CONTRACTOR shall not refuse access to technical or other data which CONTRACTOR considers proprietary or confidential, and which is reasonably required to inspect CONTRACTOR's performance of the WORK, except where the nominee of COMPANY’s Company Representative is a competitor of CONTRACTOR in the sale, engineering, or installation of systems similar to the FACILITIES or is related to or affiliated with such a firm, in which event the Company Representative may nominate an alternate.

1.6 COMPANY will complete its review of CONTRACTOR’s Quality documents (Quality Plan and Inspection & Test Plans) and personnel qualifications no more than thirty (30) calendar days after submittal of a document or its subsequent modifications. Following its initial review, COMPANY will approve or provisionally approve the submitted document or personnel qualification, or it will reject the document with comments.

1.7 The foregoing or any other provisions elsewhere in this Contract notwithstanding, in no event shall CONTRACTOR commence WORK directly related to the actual physical installation of the FACILITIES prior to obtaining Saudi Aramco's written approval on CONTRACTOR's Quality Plan.

1.8 For any inspection or any test required to be witnessed by COMPANY standards, including any required by applicable laws, rules and regulations of Saudi Arabia, CONTRACTOR shall provide notice of said inspection or test as specified in the approved Inspection and Test Plans (ITP’s) and Vendors’ Inspection and Test Plans to enable the Company Representative to attend. If any part of the WORK or the FACILITIES is closed or covered before the required inspection or witnessing has been performed or without agreement by COMPANY, it must, if required by COMPANY, be opened or uncovered for inspection or witnessing and re-closed or recovered at CONTRACTOR's expense.

1.9 If any inspection or test directed or performed by COMPANY, or by another party at the direction of COMPANY, reveals any defect in CONTRACTOR-supplied materials or in the WORK, CONTRACTOR shall bear the cost of such materials, inspection and testing and shall promptly correct such defect at CONTRACTOR's expense as set forth in Schedule “A” of this Contract.

1.10 If CONTRACTOR does not adhere to the Quality requirements of this schedule, COMPANY may, after two weeks notification to CONTRACTOR, supply sufficient inspection and testing services to assure that the WORK is being done as required by this Contract. CONTRACTOR shall bear the cost of such inspection and testing.

2. QUALITY MANAGEMENT SYSTEM REQUIREMENTS

CONTRACTOR shall implement for this Contract a Quality Management System in accordance with the latest version of ISO 9001 *(Quality Management Systems - Requirements),* which is incorporated herein by reference and this Schedule “Q”. Definitions contained in ISO 9000, (*Quality Management Systems – Fundamentals and Vocabulary*) latest version shall apply. In case of conflict between ISO 9001 and this Schedule, the requirements of this Schedule shall have precedence.

3. DOCUMENTATION REQUIREMENTS

3.1 CONTRACTOR shall plan, organize, control and execute all WORK in accordance with CONTRACTOR’s Quality Plan(s), Inspection and Test Plans (ITPs) and documented procedures. The Quality Plan(s) shall ensure that quality personnel and processes, including those of subcontractors are effective and that the WORK is completed in strict compliance with all provisions of Schedule “B” of this Contract and the Scope of Work in the individual Release P.O. where applicable.

3.2 CONTRACTOR shall prepare a narrative project specific Quality Plan including when applicable, the Construction Inspection & Test Plans (ITPs) and procedures, covering as applicable, design, procurement, construction and pre-commissioning activities in accordance with the latest version of ISO 10005 (Quality Management Systems - Guidelines for Quality Plans) and this Schedule and submit it to the Company Representative for review and approval no later than twenty one (21) calendar days after the effective date of this Contract. The minimum requirements for the content of the Construction Inspection and Test Plans are specified in Attachment IV of this Schedule “Q”. CONTRACTOR may adopt any pre-approved Saudi Aramco Typical Inspection and Test Plan (SATIP) and associated Saudi Aramco Inspection Checklists (SAIC) in lieu of its own Inspection and Test Plans and Procedures. CONTRACTOR may customize the SATIP and SAIC to suit the scope of WORK, with the approval of Company Representative.

3.3 CONTRACTOR shall submit Vendors’ Inspection and Test Plans in accordance with Attachment III to this Schedule “Q”. Pending COMPANY approval of the Inspection and Test Plans, CONTRACTOR shall not permit fabrication to begin on any item required to have ITP’s.

3.4 CONTRACTOR shall not commence WORK prior to COMPANY approval of the applicable ITP.

3.5 If CONTRACTOR adopts the COMPANY Typical Inspection Plans (SATIP) and COMPANY Inspection Checklists (SAIC) in its Quality Plan, it shall include a list of applicable SATIPs for execution of the scope of the WORK in accordance with Schedule “B” of this Contract. When any part of the scope of WORK is not supported by a SATIP(s), CONTRACTOR shall prepare an Inspection and Test Plan(s) and supporting checklists and submit to COMPANY for approval a minimum of 30 days prior to the start the activity.

3.6 CONTRACTOR shall modify its Quality Plan(s) and ITPs or SATIPs, when applicable, to reflect any significant changes identified by CONTRACTOR or COMPANY. CONTRACTOR’s revised Quality Plan(s) or SATIPs shall then be resubmitted for COMPANY’s approval within seven (7) calendar days from date of submittal.

3.7 The latest revision of CONTRACTOR’s Quality Manual and applicable Quality Plans and all referenced documentation shall be available for COMPANY’s use at the CONTRACTOR's design, procurement, fabrication and installation or construction locations. Reference documents include all those contained in drawings, specifications and procedures for the inspection of equipment and materials to be fabricated or constructed at the applicable site.

4. MANAGEMENT RESPONSIBILITY

4.1 In accordance with ISO 9001, CONTRACTOR's Senior Management (where “Senior Management” is defined as at least one person reporting directly to the owner or board of directors of the CONTRACTOR and having the proper authority delegated as an officer of the CONTRACTOR) shall review the project specific Quality System every six months to ensure that the system is suitable, adequate and effective. Senior Management reviews as a minimum, addressing the interactions of the items provided in Paragraph 7.1.1 of this Schedule “Q” shall be scheduled events included in the quality audit schedule approved by the Company Representative as provided in Paragraph 7.3.2 of this Schedule “Q”.

4.2 Within two (2) weeks after the scheduled review date, CONTRACTOR shall advise the Company Representative in writing of the results and recommended actions of such reviews. Changes to the Quality System that result from CONTRACTOR’s Senior Management reviews shall be incorporated in the Project Quality Plans, with the approval of the Company Representative.

5. RESOURCE MANAGEMENT

### 5.1 CONTRACTOR shall provide resources to implement the Quality System as set forth in this Contract. For all procurement, construction, and pre-commissioning activities, sufficient COMPANY approved Quality personnel identified in Attachment VI of this Schedule “Q” shall be on-site prior to the start of the applicable WORK.

5.2 When specified in Attachment VI of this Schedule “Q” CONTRACTOR shall designate the Quality Assurance Manager for this Contract within seven (7) calendar days of the effective date of this Contract. The Quality Assurance Manager shall be assigned to the WORK through Project Completion.

5.3 When a dedicated Construction Quality Control Manager is specified in Attachment VI of this Schedule “Q”, CONTRACTOR shall designate the Quality Control Manager for this Contract one month prior to start of fabrication. The Quality Control Manager shall be assigned to the WORK through Project Completion.

5.4 When required by Attachment VI, the Procurement Quality Control Manager or Supervisor shall be assigned to the WORK within one month of the effective date of the contract and shall be assigned to the WORK through Project Completion.

5.5 CONTRACTOR, subcontractors and third party agency Quality personnel assigned to the WORK shall meet the minimum qualification requirements of Attachment I of this Schedule “Q”, and must be technically competent to perform their duties.

5.6 CONTRACTOR shall verify and provide resumes and all associated certifications in legible format of all CONTRACTOR and subcontractor Quality personnel to COMPANY for review and approval prior to the start of work for each individual. COMPANY shall have the right to interview and/or test assigned inspectors. COMPANY has the right to reject proposed candidates if they do not comply with the requirements in Attachment I or if COMPANY has had prior poor experience with such candidates.

5.7 If WORK includes welding and Nondestructive Testing (“NDT”) and exceeds 500 groove/butt weld joints, CONTRACTOR shall designate a NDT Coordinator a minimum thirty (30) calendar days prior to the start of welding. The NDT Coordinator’s principal duties and responsibilities shall be the administration and coordination of onsite NDT activities. This individual may perform other Quality functions on the project as long as other Quality functions do not interfere with the coordination of NDT activities.

### 5.8 CONTRACTOR may subcontract inspection services, subject to COMPANY’s written review and approval, prior to commencement of any inspection services activity.

### 5.9 CONTRACTOR’s Quality personnel shall be dedicated to perform quality functions as described in this Schedule “Q” and shall perform no other function on this Contract.

### 5.10 CONTRACTOR’s quality personnel shall have sufficient and well defined responsibilities, qualifications, authority, and organizational freedom to identify quality problems and areas of non-conformance and to initiate, recommend and substantiate corrective actions. During all phases of the WORK, CONTRACTOR’s Quality Control Supervisor(s) shall functionally report to the CONTRACTOR Quality Assurance Manager or Quality Control Manager.

5.11 Not later than thirty days following the issuance of Notice to Proceed, CONTRACTOR shall submit to the Company Representative as part of the monthly Quality Management Report, (See Para. 7.7) a listing, sorted by discipline of:

● Quality personnel forecast to be mobilized in the next sixty (60) days

● Quality personnel forecast to be demobilized in the next sixty (60) days

5.12 CONTRACTOR shall include in its Quality Plan(s) or listing of ITPs for individual Release Purchase Orders were applicable, and maintain current as an attachment, its organization chart(s) clearly showing assignments of personnel including:

5.12.1 All planned quality personnel for the project including sub-contractor quality personnel in accordance with Attachment VI of this schedule “Q”.

5.12.2 Reporting relationships from the inspector through to level above the CONTRACTOR’s project manager for this contract.

5.12.3 Internal and external lines of communication.

5.12.4 Interfaces between the CONTRACTOR and its subcontractors and suppliers, and between CONTRACTOR and COMPANY.

5.12.5 Mobilization and de-mobilization dates for all planned quality personnel.

5.13 Planned staffing levels shall comply with Attachment VI of this Schedule “Q”; any reduction from the required levels must be approved in advance in writing by the Company Representative.

5.14 CONTRACTOR shall make quality personnel changes required due to vacations, illness, temporary assignments, emergency leave, resignations or other reasons as necessary to maintain required Quality coverage. CONTRACTOR shall advise the Company Representative of such personnel and quality coverage at least thirty (30) calendar days in advance of scheduled absences or changes. All other changes such as illness and emergency leaves shall be notified within 24 hours.

5.15 CONTRACTOR shall implement an ongoing training program to introduce and familiarize all CONTRACTOR and sub-contractor personnel with the project quality requirements for their area of responsibility.

6. PROJECT REALIZATION/EXECUTION

6.1 Design Phase Quality Activities

6.1.1 CONTRACTOR shall comply with the Design Phase requirements of CONTRACTOR’s approved Quality Plan and this Schedule “Q”.

6.1.2 CONTRACTOR shall perform Design Reviews at appropriate stages during the Design Phase. CONTRACTOR shall notify the Company Representative two weeks prior to the start of any Design Reviews. As a minimum, these reviews shall be completed prior to the COMPANY scheduled Design Reviews stated in schedule “B”. CONTRACTOR shall maintain records of such CONTRACTOR Design Reviews in accordance with the Quality Plan, including solicitation, recording and resolution of all comments.

6.1.3 Where applicable, CONTRACTOR shall perform design and development verifications, validations and control of changes to ensure design output requirements have met the design input requirements, the resulting product is capable of meeting the requirements and changes are identified and records maintained.

6.2 Procurement Phase Quality Control Activities

CONTRACTOR shall comply with the Procurement quality requirements of CONTRACTOR’s approved Quality Plan and Attachment III of this Schedule “Q”.

6.3 NDT Reports

CONTRACTOR shall direct NDT Service Provider (sub-contractor(s)) to prepare all NDT reports with sufficient number of direct duplicate copies (e.g. NCR Paper) to provide for “Control Copies”. Control Copies of all NDT reports issued to the CONTRACTOR must simultaneously be submitted to the COMPANY on-site Inspection Department representative and the NDT Service Provider’s nearest area office.

* + 1. All NDT reports shall clearly indicate by printed name, signature, and where applicable identification reference of personnel conducting the NDT and interpreting results.
    2. Witness, review, and approval by CONTRACTOR shall be indicated by printed name, signature, and applicable identification on the original NDT report. Control Copies held by CONTRACTOR’s NDT Service Provider (sub-contractor) and those issued to COMPANY as noted above shall be retained throughout the duration of the project.
    3. No specific action is required by CONTRACTOR for control copies of NDT reports unless deemed necessary by COMPANY. Control copies of NDT reports are for record purpose and if necessary, investigative review of the CONTRACTOR’s or CONTRACTOR’s sub‑contractor NDT performance.

## 6.4 Construction Phase Quality Control Activities

CONTRACTOR shall comply with the Construction quality requirements of CONTRACTOR’s approved Quality Plan and Attachment IV of this Schedule “Q”.

6.5 Pre-Commissioning Phase Quality Control Activities

6.5.1 CONTRACTOR shall comply with the Pre-commissioning quality requirements of CONTRACTOR’s approved Quality Plan and Schedule “B”.

6.5.2 Prior to completion of the WORK, CONTRACTOR shall perform the inspections required by Schedule “B” to complete pre-commissioning activities and document and correct any non-conformances. A copy of the inspection results and status of the correction of non-conformances shall be submitted to the Company Representative each week until the acceptance of the applicable system.

7. MEASUREMENT, ANALYSIS AND IMPROVEMENT

7.1 General

7.1.1 CONTRACTOR shall include as part of his plan for measuring, monitoring, analysis and improvement of his processes, how the plan-do-check-act cycle is driven without end on this project. As a minimum, the plan shall address the interaction of the following:

▪ Customer satisfaction

▪ Internal and external audits

▪ Internal and external Non-conformities

▪ Repeat violations

▪ Process performance measures

▪ Data analysis

▪ Management reviews

▪ Preventive action

▪ Corrective action

▪ Other improvement activities (Attachment VI, Paragraph 3)

## 7.2 Customer Satisfaction

CONTRACTOR shall determine and evaluate the degree of COMPANY’s satisfaction through quarterly evaluation of COMPANY assessments, Non-conformance Reports (NCR) and Inspection Log entries.

## 7.3 Internal Audits

7.3.1 CONTRACTOR shall conduct internal audits covering WORK Phases or Contracts with duration of six months or longer. This shall include audits of the CONTRACTOR's quality function and obligations as described in the COMPANY approved quality plans, this Contract, and ISO 9001. This program shall also include scheduled Quality System audits for all subcontractors with work scheduled to exceed six months in duration.

7.3.2 CONTRACTOR shall submit a quality audit schedule to the Company Representative for review and approval within twenty one (21) calendar days from the effective date of this Contract. As a minimum, full quality system audits shall be carried out at fifteen percent (15%) and sixty percent (60%) of completion stage for the Design, Procurement, and Construction WORK Phases. CONTRACTOR’s audits may be rescheduled only with the concurrence of the Company Representative.

7.3.3 All audits shall be executed by quality system auditors (qualified in accordance with Attachment I of this Schedule “Q”) not directly responsible for the area being audited, or by a COMPANY approved third party agency.

7.3.4 CONTRACTOR shall investigate root causes and initiate corrective actions for nonconformities identified in each audit. CONTRACTOR shall verify implementation and closeout of corrective actions prior to the next scheduled audit.

7.3.5 CONTRACTOR shall submit to the Company Representative a copy of each audit report within fourteen (14) calendar days of its completion.

7.3.6 The Company Representative or his nominee shall be invited to participate in all audits. Audit notifications and agenda shall be submitted to the Company Representative fourteen (14) calendar days in advance.

7.3.7 COMPANY shall be entitled to have the Company Representative or his nominee(s) to schedule and conduct quality assessment of the CONTRACTOR’s quality functions and obligations as outlined in Schedule Q. The quality assessment schedule will be communicated to the CONTRACTOR at least one month prior to the schedule quality assessment(s).

## 7.4 Monitoring and Measuring of Processes

CONTRACTOR shall continuously monitor and measure CONTRACTOR and subcontractor’s critical processes throughout the WORK. The quality plan shall include suitable measurement methods to evaluate the ability of the process to achieve planned results. As a minimum, CONTRACTOR shall evaluate the following as appropriate per the Scope of Work in Schedule “B”:

* Lessons Learned from previous projects
* Concrete operations
* Welding operations
* Coatings
* Hydrostatic & Gravity Testing operations

7.5 Control of Non-Conformance

7.5.1 CONTRACTOR shall include in the quality Plans procedures to prevent inadvertent use of design documents, materials, parts, components, services or workmanship not conforming to requirements of the Contract. Quality Plan shall require the identification and documentation of all nonconformities and corrective actions.

7.5.2 CONTRACTOR shall ensure control of CONTRACTOR and subcontractor supplied materials and fabricated assemblies that do not conform to requirements as indicated in 7.5.3 through 7.5.7 below. Controls to restrict further processing or installation of nonconforming or defective items, pending decisions on disposition shall be established and maintained. When practical, CONTRACTOR shall segregate all non-conforming materials and assemblies to a clearly designated rejection site.

7.5.3 CONTRACTOR, subcontractors, manufacturers and/or suppliers shall document all non-conformities to Contract requirements, approved CONTRACTOR quality plan(s), inspection & test plans, and procedures. CONTRACTOR shall forward to COMPANY records of all recorded non-conformities within forty eight (48) hours of issue.

7.5.4 CONTRACTOR shall investigate the root cause of non-conformities and initiate Corrective Actions to prevent recurrence of nonconformities maximum seven (7) days of the issue date.

7.5.5 CONTRACTOR shall maintain a summary of the open non-conformities (NCRs, Discrepancy Reports, COMPANY Logbook entries, etc.) and submit it at the regular project progress meetings.

7.5.6 CONTRACTOR shall respond to all non-conformities (NCRs, Discrepancy Reports, COMPANY Logbook entries, etc.) issued by COMPANY in writing within 48 hours of receiving notification of non-conformance, including his proposed corrective actions.

7.5.7 CONTRACTOR shall rework or repair and re-inspect items in accordance with COMPANY approved procedures. CONTRACTOR shall notify the Company Representative prior to final closure of any nonconformity.

7.5.8 Escalation process for unresolved quality issues including delinquent quality concern notifications shall be in accordance with SAEP-381 requirements.

7.6 Waivers

7.6.1 CONTRACTOR shall not waive the requirements of any CONTRACTOR Quality Plan or Inspection and Test Plan previously accepted by the Company Representative without the express written consent of the Company Representative.

7.6.2 The CONTRACTOR shall also maintain a log detailing all waivers to COMPANY standards obtained during all phases, including those initiated by COMPANY (during or prior to the start of WORK) or CONTRACTOR. This log must indicate the status of the waiver, a brief description and details of the applicable purchase order and equipment or construction process.

## 7.7 Analysis of Data

CONTRACTOR shall prepare and submit a monthly Quality Management Report in a format acceptable to COMPANY to demonstrate effective implementation of the CONTRACTOR's Quality System. The report shall include the following items as a minimum:

7.7.1 General Items:

a) Listing of quality audits completed (internal and subcontractor), in progress, and planned for the next month.

b) Status of open corrective actions for non-conformities (NCRs, Discrepancy Reports, COMPANY Logbook entries, etc.), audits and management reviews.

c) Quality Personnel Listing by Discipline as specified in Paragraph 5.11.

d) Listing and status of engineering waivers requested

7.7.2 Design and Procurement Phase Items:

a) Listing of supplier surveys performed and results

b) Planned surveys for the next month

c) Listing of Pre-inspection Meetings conducted and planned for the next month

d) Listing of supplier inspections performed and those planned for the next month

7.7.3 Construction Phase Items:

a) Listing and disposition of all defective or rejected material or equipment received at jobsite by CONTRACTOR and subcontractor(s)

b) Welding rejection rate reported in accordance with SAEP-1160. A chart showing the historical performance during the project shall be included.

7.7.4 Narrative Section for Process Improvement Activities

This section shall describe CONTRACTOR and subcontractor activities during the month to continually improve its processes, correct and eliminate non-conformities, prevent potential problems, and improve schedules, etc. It shall include trend analysis for processes identified in paragraphs 7.1.1 and 7.4 of this contract schedule.

7.8 Improvement

CONTRACTOR’s procedure(s) for Preventive Actions (where “Preventive Action” is defined as an action to eliminate the cause of a potential nonconformity or other undesirable potential situation) shall describe the requirements for evaluating the need for actions to prevent occurrence of non-conformities and the implementation of applicable Lessons Learned (where “Lessons Learned” is defined as knowledge gained from experience successful or otherwise, for the purpose of improving future performance) on previous projects.

END OF SCHEDULE Q

ATTACHMENT I TO SCHEDULE Q

CONTRACTOR AND SUBCONTRACTOR   
QUALITY PERSONNEL QUALIFICATION REQUIREMENTS

Quality personnel employed by CONTRACTOR and its subcontractors to perform the WORK described in this Contract shall meet, as a minimum, the following qualification and experience requirements. An inspector can be assigned to multiple inspection disciplines, provided he meets the minimum requirements specified on this attachment for each discipline. COMPANY shall be the final authority for the determination of equivalency for all qualifications, certifications, or minimum number of years of experience as specified in this Schedule upon successful completion of review or required examinations and/ or interviews.

1. DESIGN, PROCUREMENT & CONSTRUCTION PHASES

1.1 Quality Assurance Manager: Shall have an internationally recognized certification in auditing ISO-9001 or equivalent and shall be able to exercise judgment against the criteria of the standards. He shall have a university degree or equivalent with a minimum of ten (10) years of direct experience in Quality Assurance system activities of which five (5) years must be in managing quality systems relating to the Contract Scope of WORK (e.g.; oil, gas and petrochemical projects, Infrastructure, communication).

1.2 Quality System Auditors: Shall have 5 years Quality System experience in auditing activities in the discipline he is working in. Auditors shall be qualified as stated in ISO-19011 andcompetent in the discipline being audited, familiar with Quality System standards and be able to exercise judgment against the criteria of the standards. Auditors must be able to communicate clearly in writing and orally. Auditors shall have satisfactorily completed a training course and passed the course examination. Auditors shall have participated in a minimum of four audits for a total of at least 20 days including documentation review, actual audit activities and audit reporting during the past three years.

2. DESIGN & PROCUREMENT PHASES

2.1 Procurement Quality Control Supervisor: He shall have a university degree or equivalent and seven (7) years inspection experience or a high school diploma with ten years inspection experience with a minimum of three (3) years directly relating to supervision of vendor inspection activities in the Contract Scope of WORK (e.g.; oil, gas and petrochemical projects, Infrastructure, communication).

2.2 Vendor Inspector: as a minimum, heshall be a High School graduate, or equivalent. He shall be able to read, write and speak the English Language. He shall have 6 years inspection experience in manufacturing plants, including 2 years of this inspection experience in the specific commodity and processes to be inspected. He shall be fully conversant with applicable Industry standards, specifications, and fabrication methods and shall perform a variety of inspection functions with minimal supervision as required to verify supplier compliance with the purchase order requirements. He shall be able to read engineering drawings. He shall have knowledge and understanding of ISO-9001 quality system requirements and implementation. He shall meet all additional minimum requirements for each specific inspection discipline, as follows:

2.2.1 Welding and NDT: Inspector shall be certified as an American Welding Society CWI, CSWIP 3.1 Certified Welding Inspector, or approved equivalent. Inspector shall have a demonstrated background and thorough knowledge of codes such as ANSI B 31.3, 31.4 and 31.8, ASME Section V and IX, API 620 and 650, AWS D1.1, required for the execution of the WORK. Where Nondestructive Testing (NDT) forms part of the WORK, and Inspector is required to review or ensure NDT programs and results, he shall have been previously qualified and certified to a minimum ASNT Level II in the relevant method(s). When performing, reviewing or ensuring Nondestructive Testing in VT, MT, PT, RT or UT, he shall be certified in the specific method(s). When performing, reviewing or ensuring Radiographic Testing Film Interpretation (RTFI), Inspector shall be certified in RTFI.

2.2.2 Heat Treatment: Inspector shall have direct knowledge of all aspects of heat treatment and with the types of equipment to be used for the WORK, such as electrical resistance heating elements, induction coils, or gas fired heaters. He shall be able to verify the heat treatment parameters to approved heat treatment procedures. If applicable, Inspector shall be thoroughly familiar with the heat-treating requirements of ASME B31.3 and ASME Section VIII Division 1.

2.2.3 Mechanical: Inspector shall demonstrate working knowledge of codes as required by the purchase order, such as ASME Sec I, V, VIII and IX, ANSI B31.3/4/8, NACE, and API 620/650 and AWS D1.1, and testing equipment including Positive Material Identification test equipment required for the inspection of mechanical commodities such as pipes, piping, fittings, valves, structural steel, and fasteners, etc.

2.2.4 Positive Materials Identification (PMI): Inspector shall have knowledge about all aspects of PMI test methods and the operation of PMI test equipment used on the job.

2.2.5 Coating: Inspector shall demonstrate a thorough working knowledge and proven ability of all phases and types of coating applications and methods and recognized industry standards. For critical coatings per COMPANY SAES “H” series, Inspector shall be additionally qualified to NACE Level II Critical Coatings Certification, CSWIP Level II, or equivalent.

2.2.6 HVAC System: Inspector shall demonstrate a thorough working knowledge of codes such as the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) codes Uniform Mechanical Code, NFPA 90A, ASHRAE Handbooks and/or equivalent standards.

2.2.7 Lifting Equipment/Crane: Inspector shall demonstrate a thorough working knowledge of codes such as ANSI-A17.1 and 17.2, ANSI-B30.1 through B30.16, or equivalent standards.

2.2.8 Electrical: Inspector shall demonstrate a thorough working knowledge of the National Electric Code/NFPA 70, IEC or equivalent standards. Where, inspection of Cathodic Protection equipment is required, inspector must be able to demonstrate a thorough knowledge of applicable requirements of NACE or equivalent corrosion standards.

2.2.9 Instrumentation: Inspector shall have three (3) years documented experience in the field of instrumentation and control systems. He shall be familiar with the international Industry Codes and Standards related to Intrinsically Safe Systems and Electrical Systems for Instrumentation such as; ISA RP12.6, ISA RP12.2.02, ISA TR12., ANSI MC96.1, IEEE 518,  IEEE 1100, IEC 60529, NEMA ICS 6, NEMA 250, NEMA VE 1, NEMA VE 2, NFPA 70/NEC and UL 94. As a minimum, he shall be able to inspect complete loop checking, wiring continuity, color coding, and start up. When required, he shall be able to evaluate Factory Acceptance Test and demonstrate a thorough working knowledge of international codes and standards related to packaged units instrumentation such as, Distributed Control System (DCS), Supervisory Control and Data Acquisition (SCADA) Systems, Remote Terminal Unit, and Emergency Shutdown (ESD) systems.

2.2.10 Rotating Equipment: He shall have minimum 4 years hands-on inspection experience of rotating machineries such as pumps, compressors, generators, turbines, gears and motors, including attending and assessing Factory Acceptance Test (FAT) and reporting dynamic, vibration and/ or high temperature problems.

3. CONSTRUCTION & PRE COMMISSIONING PHASES

3.1 Quality Control Manager: He shall have a university degree or equivalent and a total of seven years inspection experience or a high school diploma with a total of ten years inspection experience. As minimum, he shall have five (5) years directly relating to supervision of construction activities in the Contract Scope of WORK (e.g.; oil, gas and petrochemical projects, Infrastructure, communication).

3.2 Quality Control Supervisor: He shall have a university degree or equivalent and a total of seven years inspection experience or a high school diploma with a total of ten years inspection experience. As minimum, he shall have three (3) years directly relating to supervision of construction activities in the Contract Scope of WORK (e.g.; oil, gas and petrochemical projects, Infrastructure, communication).

3.3 Quality Control Inspectors: Inspector shall be High School graduate, or equivalent; shall be able to read, write and speak English Language; shall be fully conversant with applicable Industry Standards and Specifications; and shall perform a variety of inspection functions with minimal supervision. Personnel employed by CONTRACTOR or its subcontractors to perform the WORK described in this Contract shall meet, as a minimum, the following years of relevant experience:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Number of years of experience | | |
| Inspector Title | Overall | Inspection Specialty | Contract Scope of Work\* |
| Sr. Inspector | 8 | 5 | 3 |
| Inspector | 5 | 3 | 2 |
| Assistant Inspector  (Saudi Arabs Only) | High School with 3 years working experience  Technical college Diploma with 2 years working experience, or  BS Degree in Engineering (ME, EE, CE, etc.) | | |

\*e.g.; oil, gas and petrochemical projects, Infrastructure, communication, etc.

Note; “An Assistant Inspector may be utilized in place of an Inspector if there is more than one QC Inspector of a particular discipline required under the Contract.”

Additional requirements shall apply for specific disciplines as follows:

3.3.1 Welding: Inspector shall be certified as an American Welding Society CWI, CSWIP 3.1 Certified Welding Inspector, or COMPANY approved equivalent. Inspector shall have a demonstrated background and thorough knowledge of codes such as ANSI B 31.3, 31.4 and 31.8, ASME Section V and IX, API 620 and 650, AWS D1.1, required for the execution of the WORK. Where Nondestructive Testing (NDT) forms part of the WORK, and Inspector is required to review or ensure NDT programs and results, he shall have been previously qualified and certified to a minimum ASNT Level II in the relevant method(s). When performing, reviewing or ensuring Nondestructive Testing in VT, MT, PT, RT or UT, he shall be certified in the specific method(s). When performing, reviewing or ensuring Radiographic Testing Film Interpretation (RTFI), Inspector shall be certified in RTFI.

3.3.2 Plant and Equipment: Inspector shall be certified to API 653 for tank, and API 510 for pressure vessel and demonstrate working knowledge of codes, as required by the scope of the Contract, such as ASME Sec I, V, VIII and IX, ANSI B31.3/4/8 and API 620/650 and AWS D1.1, required for the execution of the inspection work. As a minimum, he shall have experienced with:

a) Installation of equipment such as, Pumps, Motors, Skids, Valves, Vessels, Compressors, Fired Heaters, Auxiliary Equipment, Packaged Equipment in plant construction, etc.

b) Piping systems and pipe line,

c) Hot tap procedure,

d) Vessels, tanks and spheres construction

e) Structural steel erection

f) Hot/Cold Insulation.

3.3.3 Heat Treatment: Inspector shall have direct knowledge of all aspects of heat treatment with the types of equipment such as electrical resistance heating elements, induction coils, or gas fired heaters. He shall be able to verify process parameters to approved heat treatment procedures. Inspector shall also be thoroughly familiar with the heat-treating requirements of ASME B31.3 and ASME Section VIII Division 1.

3.3.4 Positive Materials Identification (PMI): Inspector shall have knowledge about all aspects of PMI test methods and the operation of PMI test equipment used on the job.

3.3.5 Civil: Inspector shall demonstrate a thorough working knowledge of recognized building codes such as the International Building Code (IBC) or equivalent standards. As applicable for the work, he shall demonstrate thorough knowledge and proven ability in construction techniques with emphasis on soil mechanics, foundations, retaining walls, structural steel, masonry, building interiors, building finishes, roof systems, and asphalt.

3.3.6 Batch Plant: Inspector shall have direct experience in inspection of asphalt/concrete mix ingredients in accordance with the applicable ASTM, AASHTO or ACI procedures and guidelines. He shall be able to assess the plant QC laboratory to determine that their equipment, procedures /techniques, sample recording and result reporting compliance with the applicable standards. He shall be able to evaluate batch plants capability and safety that meet company requirements. He shall review and performs full-scale plant trials to determine the required engineering properties.

3.3.7 Coating: Inspector shall demonstrate a thorough working knowledge and proven ability of all phases and types of critical coating applications and methods and recognized industry standards and critical coatings. Inspector shall be certified to NACE Level I and qualified per the requirements of SAEP 316.

3.3.8 Plumbing/Fire Protection: Inspector shall demonstrate a thorough knowledge of codes such as the Uniform Plumbing Code (UPC), IPC, ASME 31.9, NFPA 13, 14, 20, 99, IBC, UFC and/or equivalent standards.

3.3.9 HVAC System: Inspector shall demonstrate a thorough working knowledge of codes such as the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) codes Uniform Mechanical Code, ASME 31.9, NFPA 90A, ASHRAE Handbooks and/or equivalent standards.

3.3.10 Lifting Equipment/Crane (Fixed, Overhead, Elevators): Inspector shall demonstrate a thorough working knowledge of codes such as ANSI-A17.1 and 17.2, ANSI-B30.1 through B30.16, or equivalent standards.

3.3.11 Electrical: Inspector shall demonstrate a thorough working knowledge of the National Electric Code/NFPA 70, IEC or equivalent standards. He shall also have working knowledge of electrical installations including materials, methods, specifications, and hazardous location identification for oil and gas or petrochemical industries.

3.3.12 Communication: Inspector shall demonstrate a thorough working knowledge of telecommunications in the field of OSP (Outside Plant) installation as well as PDS (Premise Distribution System installation, and be familiar with North American or International Telecommunications Standards; Building Industry Consulting Services International - Telecommunications Distribution Methods Manual (BICSI-TDMM); National Electrical Codes; and National Electrical Safety Codes, or their equivalents.

3.3.13 Instrumentation: Inspector shall be familiar with the international Industry Codes and Standards related to Intrinsically Safe Systems and Electrical Systems for Instrumentation such as; ISA RP12.6, ISA RP12.2.02, ISA TR12., ANSI MC96.1, IEEE 518, IEEE 1100, IEC 60529, NEMA ICS 6, NEMA 250, NEMA VE 1, NEMA VE 2, NFPA 70/NEC and UL 94. As a minimum, he shall be able to inspect complete loop checking, wiring continuity and color coding, start up, and troubleshooting. When required, he shall be able to evaluate Factory Acceptance Test and demonstrate a thorough working knowledge of international codes and standards related to packaged units instrumentation such as, Distributed Control System (DCS), Supervisory Control and Data Acquisition (SCADA) Systems, Remote Terminal Unit, and Emergency Shutdown (ESD) systems.

3.3.14 Cathodic Protection: Inspector shall have two (2) years documented experience in the field of cathodic protection for the required specific application. He shall be able to demonstrate a thorough working knowledge of international codes and standards related to inspecting Cathodic Protection System and its components, such as anode installation, cable installation, and positive and negative cable hookups to rectifier. He shall be able to interpret and assess cathodic protection design packages to ensure compliance with the contractual requirements.

3.3.15 Material Receiving Inspectors: Material receiving inspectors shall be assigned from the specific disciplines to perform receiving inspection functions for their disciplines.

3.3.16 Nondestructive Testing (NDT) Personnel: All CONTRACTOR and subcontractor personnel located in Saudi Arabia responsible for performing NDT operations, or interpreting, reviewing, ensuring or auditing NDT operations shall meet COMPANY’s requirement as listed in SAEP-1142. All CONTRACTOR and subcontractor NDT and personnel shall hold current certification where outlined below attesting to their NDT qualifications.

3.3.16.1 Nondestructive Testing (NDT) Level III personnel as defined in SAEP-1142: such personnel shall have been tested and certified by ASNT (or equivalent nationally recognized program as approved by COMPANY) in the required NDT method(s) specified by the Contract and shall be required to fulfill the full scope of a practicing Level III including, but not limited to: method application, interpretation of results, interpretation of codes and standards, preparation of procedures, and training of Level I and Level II personnel. Level III personnel directly performing any NDT method or the interpretation of results, in addition to ASNT Certification, shall be certified by employer in accordance with ANSI/ASNT CP-189 by written and practical examinations.

3.3.16.2 CONTRACTOR’s NDT Level III personnel shall be certified in all NDT methods to be used on the Project including, for example, Visual, Radiography/RTFI, UT (MUT – Manual UT), AUT (Automatic UT e.g. ToFD, Phased Array), Magnetic Particle, and Liquid Penetrant.

3.3.16.3 In the event the CONTACTOR sub-contracts Level III personnel (approved by COMPANY), such personnel shall have no relationship, direct or indirect, with sub‑contracted NDT Service Provider(s) on the Project.

3.3.16.4 Where the CONTRACTOR has more than one NDT Level III to satisfy the full scope of NDT Methods used on the Project, one NDT Level III shall be designated as the Principal NDT Level III and shall be responsible and answerable for the activities of all CONTRACTOR NDT Level III personnel.

3.3.16.5 Nondestructive Test (NDT) Level II technicians shall be certified in the disciplines of assigned NDT methods in accordance with SAEP-1142. In addition, such personnel performing RTFI, MUT (Manual UT), and/or AUT (Automatic UT) shall be tested and approved by COMPANY.

3.3.16.6 Any individual performing, interpreting results of, or influencing the results of interpretation of NDT for RTFI, MUT, and AUT, shall be tested, approved by COMPANY, and have in their immediate position, valid documentation (e.g. COMPANY issued qualification card) for the NDT methods involved.

3.3.16.7 Nondestructive Testing (NDT) Coordinator: Individual having documented prior direct NDT and Welding Inspection experience as well as documented experience in the coordination of NDT works on major construction sites.

3.3.17 Interior Design: Inspector shall be graduate of BS Architecture or Interior Design major in field of Interior Designing and shall have eight (8) years of documented experience in the field of interior design inspection for the required specific application. He shall be able to demonstrate a thorough working knowledge of standards codes, such as IBC, ASTM, ACI, American Architectural Manufacturers Association (AAMA), National Structural Steelwork Specification for Building Construction (NSSSBC), American National Standards Institute (ANSI) as required by the scope of the contract related to inspection of interior design and its components, such as material finishing and installation methods to include marble work, tile work, woodwork, wall coverings, paints and special coatings, fixtures and fittings installation (kitchens and bathrooms), hardware, lighting fixtures, furniture and electrical fittings, curtain and etc. He shall be able to interpret and assess interior design packages to ensure compliance with the contractual requirements.

3.3.18 Landscaping System: Inspector shall be graduate of BS Architecture major in field of Landscaping Systems and shall have eight (8) years of documented experience in the field of Landscaping System inspection for the required specific application. He shall be able to demonstrate a thorough working knowledge of international codes such as Time- Saver Standards for Landscape Architecture, IBC, ASTM, ACI, American Architectural Manufacturers Association (AAMA), National Structural Steelwork Specification for Building Construction (NSSSBC), American National Standards Institute (ANSI), ASTM International Standards on Sustainability in Buildings and standards related to inspecting Landscaping System and its components, involving irrigation systems, planting, and playground equipment, He shall be able to interpret and assess Landscaping System packages to ensure compliance with the contractual requirements.

END OF ATTACHMENT I TO SCHEDULE “Q”

ATTACHMENT II TO SCHEDULE Q

COMPANY STANDARDS AND PROCEDURES   
CONTAINING QUALITY REQUIREMENTS

CONTRACTOR shall comply with all applicable COMPANY Material System Specifications (SAMSS), COMPANY Engineering Standards (SAES), and other COMPANY standards and specifications including, but not limited to the following procedures relating to Quality requirements:

1. SAEP-122 Project Records
2. SAEP-127 Security and Control of COMPANY Engineering Data
3. SAEP-302 Instructions for Obtaining a Waiver of a COMPANY Engineering Requirement
4. SAEP-303 Engineering Reviews of Project Proposal and Detail Design Documentation
5. SAEP-316 Performance Qualification of Coating Personnel
6. SAEP-324 Certification Review and Registration of Project Welders and Brazers
7. SAEP-347 Supplying Material from Stock lists
8. SAEP-352 Welding Procedures and Approval
9. SAEP-379 Quality Issues Notification
10. SAEP-380 Equipment Deficiency Report
11. SAEP-381 Project Quality Issues Escalation Process
12. SAEP-1101 through SAEP-1117: Welding and Brazing Test Supplements for Welder Performance Qualification
13. SAEP-1131 Pressure Relief Valve Program Use of Form 3099A, RV Authorization
14. SAEP-1133 Form 3750, Pressuring Relieving Device Test Report
15. SAEP-1141 Radiation Protection for Industrial Radiography
16. SAEP-1142 Qualification of Non-COMPANY NDT Personnel
17. SAEP-1143 Radiographic Examination
18. SAEP-1144 Magnetic Particle Examination
19. SAEP-1145 Liquid Penetrant Examination
20. SAEP-1152 Approval Procedure for Ready-Mixed Concrete Mix Design
21. SAEP-1160 Tracking and Reporting of Welding, NDT and Pressure Testing for Capital Projects
22. SAEP-1636 Installation and Checkout Plan
23. SAEP-1638 Site Acceptance Test Plan
24. SAEP-1151 COMPANY Inspection Requirements (Form 175)

END OF ATTACHMENT II TO SCHEDULE Q

ATTACHMENT III TO SCHEDULE “Q”

QUALITY REQUIREMENTS FOR CONTRACTOR SUPPLIED MATERIALS

1. PROCUREMENT PROCESS

CONTRACTOR shall provide and document Quality services in the procurement of equipment and material to be used or installed during the construction and installation of the facilities as specified in the requirements of the Contract.

1.1 Requisitions

CONTRACTOR shall not release requisitions for purchase of equipment or material prior to COMPANY’s approval of the Quality Plan unless specifically approved in writing by the Company Representative.

1.2 Supplier and Sub-Supplier Selection

1.2.1 Except as provided in Paragraph 1.2.6 of this Attachment III to Schedule “Q”, for all equipment and materials for which inspection requirements are specified in SAEP-1151 including inspection levels 1 and 0, CONTRACTOR shall prequalify each manufacturer and its specific manufacturing site as described in 1.2.2 through 1.2.5 of this Attachment III. Evidence of the prequalification shall be provided to COMPANY for its review and approval at least two weeks prior to placement of the purchase order.

1.2.2 CONTRACTOR shall evaluate supplier’s capabilities to meet the technical, quality and schedule requirements of the WORK. Such evaluation shall include technical review of products to ensure compliance with applicable COMPANY standards. Results of such supplier evaluations shall be subject to COMPANY approval.

1.2.3 CONTRACTOR shall evaluate suppliers’ Quality System, which shall meet ISO 9001 system requirements. Reliance solely on certification to ISO 9001 is unacceptable. CONTRACTOR's prior audits findings are considered current if completed within 24-months prior to the proposed equipment purchase and do not include any major technical or quality deficiencies.

1.2.4 CONTRACTOR shall complete a physical survey of proposed suppliers for any equipment requiring an inspection level of 2, 3, or 4 as specified in SAEP-1151. CONTRACTOR supplier evaluations shall, at a minimum, be carried out by a certified lead auditor per the requirements of Attachment I to this Schedule “Q” and a technical expert for the equipment under consideration.

1.2.5 CONTRACTOR shall notify COMPANY at least two weeks ahead of all planned supplier surveys.

1.2.6 Quality System evaluations are not required for:

a) Suppliers currently on the Regulated Vendors List referenced by Saudi Aramco Engineering Standards; and

b) Suppliers currently listed on COMPANY’s list of manufactures for Inspectable Items.

The current versions of these lists will be made available to CONTRACTOR by COMPANY upon written request from CONTRACTOR to the Company Representative.

2. PROCUREMENT INFORMATION

2.1 CONTRACTOR shall review and ensure the quality of all requisitions prior to submittal for COMPANY review, including all technical and quality requirements specified in Schedule “G”.

2.2 CONTRACTOR shall review its supplier's sub-orders to ensure that all relevant COMPANY technical and inspection requirements are passed on to sub-suppliers.

2.3 CONTRACTOR shall ensure that all suppliers and manufacturers of inspectable equipment and material have and maintain acceptable Quality programs in accordance with the ISO-9001 quality standard.

2.4 CONTRACTOR shall complete and submit a weekly inspection/fabrication status report to the Company Representative in an electronic format acceptable to COMPANY. The report shall include, as a minimum, the following information for each purchase order:

2.4.1 Purchase Order Number (include COMPANY Dummy PO number) and Date

2.4.2 Material Description

2.4.3 Vendor Name and Location

2.4.4 Major Sub-vendor(s) Name and Location

2.4.5 Inspection Assignment Package submittal date as specified in Paragraph 3.18 of this Attachment III.

2.4.6 Level of Inspection as specified in SAEP-1151, Saudi Aramco Materials Inspection and Testing

2.4.7 Pre-inspection Meeting Date

2.4.8 Fabrication Start Date and progress (percent complete) to date inclusive of major suborders

2.4.9 Scheduled and Forecast Delivery Date

2.4.10 Inspector and Agency (qualified as specified in Attachment I of Schedule “Q”)

2.4.11 Special Process Procedures (approved as specified in Paragraph 3.11 of this Attachment III)

2.4.12 Inspection Notification tracking sheet and updated status

2.4.13 Open and Closed NCR’s

2.4.14 Closeout Date

2.4.15 Disposition Report submittal date

2.5 COMPANY shall have access to all purchase order inspection report files. CONTRACTOR shall include a clause in their Purchase Orders that COMPANY (or COMPANY’s designee) has the right to access manufacturers’ facilities and suborder locations.

2.6 CONTRACTOR shall obtain COMPANY approval for placement of purchase orders as set forth in Schedule G.  A “No Objection Letter” must be obtained from COMPANY prior to placing purchase orders with any supplier or manufacturer whose quality systems are either On HOLD (where “On HOLD” means that SAUDI ARAMCO has found deficiencies in their systems and is suspending approval of them), or are not approved by COMPANY.

### 3. VERIFICATION OF PURCHASED MATERIALS/EQUIPMENT

3.1 CONTRACTOR shall maintain an effective system for continuity of order identification that ensures drawings, specifications, and inspection requirements are properly transmitted to suppliers at all tiers of order placement.

3.2 CONTRACTOR or its COMPANY approved third party inspector shall perform Quality activities at the supplier and sub-supplier locations as required by the applicable Form SA-175 and the inspection level assigned for the materials and equipment identified in SAEP-1151 Inspection Requirements. Subject to COMPANY approval, CONTRACTOR may change the assigned level of inspection during the course of the work as a result of supplier performance.

3.3 CONTRACTOR shall submit each week a two-week look-ahead schedule of all planned vendor inspections and tests as specified in the approved vendor I&TP per the applicable SA-175. The schedule shall be sent electronically in a format acceptable to COMPANY.

3.4 CONTRACTOR shall bring to the attention of COMPANY any equipment items not identified in SAEP-1151 and COMPANY shall assign the appropriate inspection level.

3.5 If CONTRACTOR delegates any purchase of material to its subcontractor(s), Inspection Levels in SAEP-1151 shall apply. CONTRACTOR is responsible that Attachment III of this Schedule Q is implemented and all documents are reviewed by the CONTRACTOR prior to the submittal for COMPANY review.

3.6 When vendor does not meet the specified performance requirements in the purchase order, or COMPANY has placed the vendor On Hold after the COMPANY has issued a “No Objection” letter to CONTRACTOR, CONTRACTOR shall increase the inspection level to the next highest level for the purchase order without additional cost to COMPANY, subject to COMPANY approval.

3.7 CONTRACTOR shall submit detailed vendor(s) Inspection and Test Plans (ITPs) in accordance with paragraph 3.10 of this Attachment for all equipment and materials assigned a level 2, 3, or 4 in SAEP-1151, and for any other equipment deemed necessary by CONTRACTOR.

3.8 CONTRACTOR shall review all applicable COMPANY Quality requirements and include appropriate Quality requirements in the ITPs. Each ITP shall identify, as a minimum the inspection level and detail all witnesses, hold and certification review points as specified in the COMPANY Form175 (Inspection Requirements).

3.9 CONTRACTOR shall prepare a Special SA Form 175 for approval by the Company Representative:

3.9.1 If no existing form 175 is applicable to the equipment

3.9.2 For changes to the existing form 175

3.10 As a minimum, each vendor ITP shall include the following information:

3.10.1 Process description

3.10.2 Quality control requirements

3.10.3 Notification requirements for supplier inspection witness and hold points (minimum 5 working days.)

3.10.4 Minimum Inspection Levels per SAEP-1151 and/or Attachment VI of this Schedule “Q”

3.10.5 Responsibility for inspection/test

3.10.6 Applicable procedures

3.10.7 Acceptance criteria (COMPANY and International Industry Standards)

3.10.8 Verifying documents

3.10.9 Inspection points (Hold, Witness & Review) by CONTRACTOR

3.10.10 COMPANY Dummy PO number

3.10.11 Reference to sub-supplier ITP (as applicable)

3.11 When required by COMPANY’s standards, CONTRACTOR shall submit for COMPANY’s review and approval all supplier and sub-supplier procedures for refractory installation, welding, welding repair, heat treatment, and alloy verification (PMI) as applicable, no later than twenty one (21) calendar days prior to the start of the specific work activity.

3.12 Supplier and sub supplier personnel for Positive Material Identification and welding shall be qualified as specified by COMPANY’s Standards and Attachment I of this Schedule “Q”. CONTRACTOR shall review and approve such qualifications prior to the start of manufacturing.

3.13 The qualification and certification of Nondestructive Testing (NDT) personnel shall be in accordance with SAEP-1142 as stipulated in ATTACHMENT I. All suppliers’ and sub suppliers’ NDT personnel qualification and certification programs as well as all NDT procedures shall be reviewed against the International and Company requirements and approved by the CONTRACTOR’s Level III as defined in ATTACHMENT I prior to submission for approval by the COMPANY. Copies of procedures and personnel qualification records clearly denoting CONTRACTOR approval shall be submitted to COMPANY for the COMPANY’s review and approval. CONTRACTOR approval shall be denoted by the name of the approving CONTRACTOR ASNT Level III, ASNT Certification reference, certified NDT discipline(s), and signature.

3.14 COMPANY’s approval of NDT Personnel by review of qualification records submitted by CONTRACTOR shall be conditional until CONTRACTOR’s on‑site Inspection personnel have completed a performance review. If CONTRACTOR fails to schedule and arrange for performance review by COMPANY within 30 days from commencement of the Work by the NDT individual (e.g. technicians, inspector, etc.) prior conditional approval shall be retracted.

3.15 If determined by the COMPANY at the time of performance evaluation, that the NDT individual (e.g. technicians, inspector, etc.) is/are not adequately qualified, prior conditional approval shall be revoked. The CONTRACTOR may request specific qualification testing of the disqualified NDT individual(s) and at the discretion of the COMPANY such testing shall take place at the COMPANY’s facilities for personnel testing and qualification.

3.16 All work carried out by conditionally approved NDT personnel whether disqualified by COMPANY by not making such personnel available for performance evaluation or whereby disqualified as a result of performance evaluation by COMPANY shall be repeated by CONTRACTOR’s qualified NDT personnel defined herein.

3.17 CONTRACTOR shall make supplier and sub-supplier NDT personnel records and Welder Qualification Records available to the Company Representative on request.

3.18 CONTRACTOR shall compile and forward to the Company Representative no later than twenty-one (21) calendar days prior to the pre-inspection meeting and start of any fabrication, either at the prime supplier or a major sub-supplier, one electronic version on compact disc (CD) of the CONTRACTOR's Inspection Assignment Package, and forward to COMPANY one complete set via e-mail. For Inspection Level 1 as defined in the documents referenced in Paragraph 3.10.4 of this Attachment, CONTRACTOR shall submit the Inspection Assignment Package fourteen (14) days before final inspection.

3.18.1 The Inspection assignment package shall include the following documents as applicable:

#### 3.18.1.1 A complete copy of the CONTRACTOR's purchase order including Change Order(s) or subcontract, material requisition, and attachments

#### 3.18.1.2 Copies of sub-supplier's applicable purchase orders (If these are not available, CONTRACTOR shall provide them to the Company Representative upon placement by the supplier)

#### 3.18.1.3 Applicable COMPANY standards (SAMSS/SAES)

#### 3.18.1.4 Inspection requirements as specified in the applicable COMPANY Form 175

#### 3.18.1.5 Inspection assignment sheet specifying the approved inspector(s) that will perform the inspections

#### 3.18.1.6 Inspection and Test Plans

#### 3.18.1.7 The level of CONTRACTOR inspection (as required by SAEP-1151 or Attachment VI to this Schedule “Q”)

#### 3.18.1.8 Agenda for each pre-inspection meeting where appropriate.

3.18.2 CONTRACTOR shall issue any subsequent Change Orders including accompanying documents to COMPANY within 10 working days of placement.

3.19 CONTRACTOR or its approved third party inspector shall schedule and perform source inspection at supplier and sub-supplier fabrication sites as specified in the approved Inspection and Test Plans.

3.20 For package units that include various disciplines (mechanical, welding, electrical and instrumentations) such as compressors, co-generation, boilers, chemical dosing, anti-foaming, corrosion/scale inhibitors etc., CONTRACTOR shall assign additional discipline Inspectors during applicable work activities for mechanical, welding, electrical, instrumentation and refractory inspections.

3.21 Pre-inspection meetings shall be conducted by the inspector(s) approved for the subject material or equipment being manufactured. Contractor shall ensure inspector continuity through fabrication.

3.22 CONTRACTOR shall officially submit Pre-inspection Meeting Reports and subsequent Vendor Inspection Reports to the Company Representative within ten (10) calendar days of each shop visit. Vendor Inspection Reports for Inspection Level “4” materials shall be submitted weekly after the initial submittal.

3.23 Vendor inspection reports shall include as a minimum the following information:

▪ Narrative details about the inspection performed

▪ The SA-175/ITP inspection points covered during the inspection

▪ Brief material fabrication status

▪ Punchlist/outstanding work list (when applicable)

3.24 If COMPANY waives a plant inspection visit, CONTRACTOR shall obtain from suppliers and sub-suppliers such inspection records as may be required to meet the requirements of the applicable SA-175 form and include the inspection records in the Inspection Disposition Reports (Paragraph 3.24). Such waiver shall not release CONTRACTOR from any other obligations contained in this Schedule “Q”.

3.25 CONTRACTOR shall require its Subcontractors/suppliers to submit manufacturing and test reports as specified on each form SA-175. The CONTRACTOR shall review and indicate its acceptance of these inspection records prior to issuing the inspection (or shipping) release. A copy shall be provided to COMPANY with the Inspection Disposition Report.

3.26 An Inspection/Shipping Release shall be issued for all equipment and materials at time of final inspection. The Inspection/Shipping release shall indicate all outstanding work items. CONTRACTOR shall ensure the Inspection/Shipping release is available with the equipment and materials at time of receipt at job site. Copies of inspection/shipping release shall be submitted to Company within 48 hours of issue.

3.27 Within two weeks of acceptance of material or equipment, CONTRACTOR shall prepare and issue to the Company Representative an Inspection Disposition Report. This report shall be based upon CONTRACTOR's review of the inspection file and include as a minimum:

3.27.1 Narrative details of Quality activities performed during manufacturing and fabrication of the equipment or material.

3.27.2 Copies of COMPANY approved waivers to COMPANY’s requirements.

3.27.3 All CONTRACTOR Inspection Reports.

3.27.4 Copies of supplier quality records as specified in SA-175.

3.27.5 Copies of all NCR's with final dispositions and resolutions.

3.27.6 Outstanding punch list items from pre-shipment inspections.

3.27.7 Inspection/Shipping Release.

3.28 In cases where the supplier is responsible for export packing, the final disposition report shall be prepared after export packing has been inspected and accepted by CONTRACTOR.

END OF ATTACHMENT III TO SCHEDULE Q

ATTACHMENT IV TO SCHEDULE Q

QUALITY REQUIREMENTS FOR THE CONSTRUCTION PHASE

### 1. CONTROL OF CONSTRUCTION ACTIVITIES

1.1 Unless submitted with the Project Quality Plan in accordance with paragraph 3.2 of Schedule Q, one month prior to the start of the applicable WORK, CONTRACTOR shall submit for review and approval a detailed Inspection and Test Plan (ITP) along with related procedures/work instructions for all construction processes to be executed by CONTRACTOR or subcontractors. CONTRACTOR shall review the quality requirements in all applicable COMPANY standards and procedures and include appropriate Quality requirements in each ITP. Each ITP shall detail all review, witness, and hold points for COMPANY, CONTRACTOR and subcontractors as specified in this Contract. It shall also include the methods, extent and timing for examinations, measurements or tests.

1.2 As a minimum, each ITP shall include the following information:

1.2.1 Process description

1.2.2 Quality control requirements

1.2.3 Notification requirements for “Requests For Inspections” (RFI) shall be a minimum 24 hours for site work and 48 hours for weekend inspections and remote area locations.

1.2.4 Responsibilities

1.2.5 Applicable procedures

1.2.6 Acceptance criteria

1.2.7 Percentage of tests to be done (including increased inspection levels when performance requirements are not met.)

1.2.8 Verifying documents

1.2.9 Review, Witness and Hold points

1.3 CONTRACTOR shall not waive the requirements of any CONTRACTOR Quality Plan, ITP or SATIP (when applicable) previously accepted by the Company Representative without the express written consent of the Company Representative.

1.4 CONTRACTOR shall request Company Representative written approval one (1) week in advance concerning required inspection during holidays and Fridays. SAUDI ARAMCO non approval of such requests shall not constitute ground for CONTRACTOR claims.

1.5 Use of SATIPs and SAICs does not relieve the CONTRACTOR from his obligation to meet all COMPANY Engineering Standards and other requirements.

1.6 CONTRACTOR shall submit each week a two-week look-ahead schedule of all planned quality activities to the Company Representative during construction and pre-commissioning. The schedule shall be sent electronically in a format acceptable to COMPANY.

2. VALIDATION OF CONSTRUCTION PROCESSES

2.1 The following special processes require COMPANY’s review and/or approval of work procedures, personnel qualifications, or personnel qualification procedures. CONTRACTOR shall ensure that these special processes are accomplished under controlled conditions as specified in all applicable standards and specifications. All process parameters shall be identified with acceptance criteria specified and monitored. All Procedures and Personnel Qualification shall be submitted for review and/or approval at least twenty one (21) calendar days prior to the start of WORK.

| Special Process  (Note1) | Work Procedure Approval (A) or Review (R) Required | Personnel Qualification Procedure  Approval Required  (Yes/No) | Personnel Qualification Approval Required (Yes/No) |
| --- | --- | --- | --- |
| Field Engineering Change Control | A | No | No |
| Civil Processes | | | |
| Concrete Finishing | A | Yes | Yes |
| Concrete and Asphalt Mix | A | No | No |
| Mechanical Processes | | | |
| Welding/Brazing | A | Yes | Yes |
| Nondestructive Testing (NDT) | A | Yes (Note 1) | Yes |
| Positive Material Identification (PMI) & Color-Code Verification | A | No | Yes |
| Heat Treatment & associated Hardness Testing | A | No | No |
| Hydrostatic Pressure Testing | A | No | No |
| Valve Testing and Installation | A | No | No |
| Coatings & Lining | A | No | Yes |
| Gasket Installation & Bolt Tightening | A | No | No |
| Gap Control (Socket welds, thread engagement, back welding of threaded joints) | A | No | No |
| Hot Taps (Calcs) & Tie-ins | A | No | No |
| Refractory Installation | R | No | No |
| HVAC Testing & Balancing | A | No | No |
| RTR Pipe work | A | No | Yes |
| Electrical, Instrumentation & Communication Processes | | | |
| High/Medium Voltage (HV/MV) Cable Splicing/Termination | R | No | Yes |
| Electric Power Systems Energization | R | No | No |
| Fiber Optic Cable Installation/Termination | R | No | No |
| Cable Gland/Seal & Conduit Seal Installation | R | No | Yes |

Notes: (1) Not required when NDT work is subcontracted to an approved In-Kingdom NDT subcontractor. NDT technician performance shall be monitored by CONTRACTOR on all projects.

3. MONITORING OF CONSTRUCTION PROCESSES

3.1 Prior to the start of any construction activity, CONTRACTOR shall initiate a kick-off meeting with all concerned parties to ensure full understanding on the execution, requirements and control of the activity.

3.2 CONTRACTOR shall be fully responsible for the performance of its sub-contractors and their sub-suppliers. CONTRACTOR shall control its construction processes and ensure its subcontractor(s) construction processes including welding and NDT activities are controlled in accordance with SAEP-1160. Selection of sampling of the welded joints for RT shall be performed by COMPANY inspectors.

3.3 CONTRACTOR shall visually inspect all incoming equipment for damage and for conformance to all applicable requirements, including the CONTRACTOR’s inspection release, when applicable, with verified Material Test Reports (MTR). If the equipment does not have the required inspection release and MTR, CONTRACTOR shall verify and document the compliance of the equipment with applicable standards and specifications prior to release to be used as part of the WORK. Status of receiving inspections shall be included on the Monthly Materials Procurement Status Report as specified in Schedule “G”.

3.4 CONTRACTOR shall submit its test reports and its subcontractors test reports to the Company Representative as specified by the applicable COMPANY standards. The CONTRACTOR shall review its subcontractor’s test reports prior to submittal.

3.5 For all other test reports/validation records whether performed by CONTRACTOR or subcontractor. Test reports/validation records shall be maintained current and available at CONTRACTOR site office for COMPANY review.

3.6 CONTRACTOR shall perform inspections and tests in accordance with the approved ITP and additional inspections and tests as required by COMPANY standards referenced herein not covered by ITP. CONTRACTOR shall witness, review and approve all inspections and tests performed by subcontractors/Third Party including NDT activities.

3.7 CONTRACTOR’s witness of NDT shall be by approved welding inspectors and/or the CONTRACTOR’s approved NDT Level III quality personnel. CONTRACTOR’s Level III quality personnel shall review and approve NDT results. The NDT Level III quality personnel must be certified in the NDT discipline of NDT works reviewed and/or approved (refer to ATTACHMENT I for the ASNT certification of NDT Level III).

3.8 CONTRACTOR shall maintain all necessary resources (e.g. computer, software, etc.) for NDT review analysis of NDT Service Provider’s NDT Report data for AUT application such as ToFD (Time of Flight Diffraction) and PAUT (Phased Array UT) and to assure that CONTRACTOR’s Level II Inspectors/Technicians and/or NDT Level III have been trained by the Manufacturer or authorized Manufacturer representative.

3.9 CONTRACTOR shall assure that NDT performed subsequent to repairs of rejected welding is conducted by the same NDT Service Provider who initially identified the rejection unless such NDT Service Provider is no longer associated with the Project.

3.10 Reports of Manual UT (MUT), Magnetic Particle Testing (MT) and Liquid Penetrant Testing (PT) shall be prepared on-site at the time tests are conducted and prior to any repairs, if required. If repairs deemed necessary are completed concurrent with ongoing MUT, MT, and PT, reports will accurately reflect the initial rejection, and results of subsequent NDT following repairs.

3.11 COMPANY reserves the right at any time to assess the results of NDT. NDT Assessment by COMPANY does not absolve CONTRACTOR of responsibility for the compliant application of NDT and interpretation of accuracy of results.

3.11.1 NDT Assessment by COMPANY shall not preclude or otherwise impair CONTRACTOR’s WORK processes for review, approval, and subsequent fabrication and/or construction activity of any NDT Works unless the COMPANY otherwise specifically requires a Hold Point (where “Hold Point” is defined as an inspection point beyond which an activity must not proceed without the approval of a designated organization or authority). CONTRACTOR shall not hold subsequent fabrication and/or construction pending NDT Assessment by COMPANY unless otherwise directed by the COMPANY.

3.11.2 COMPANY’s NDT Assessment is an evaluation by random sample of the CONTRACTOR’s NDT interpretation and determination of acceptance/rejection of NDT Results prepared either by CONTRACTOR or CONTRACTOR’s sub‑contractor(s). CONTRACTOR’s approved NDT Level III or NDT Level II Inspector/Technician shall have reviewed and approved all NDT Results prior to COMPANY’s NDT Assessment. COMPANY’s Inspection representative directly responsible for supervision of NDT Assessment shall determine the appropriate time and date of assessment.

3.11.3 COMPANY’s NDT Assessment results shall be considered final. Disagreement in the applied quality of NDT or interpretation of results between COMPANY’s NDT Assessment and CONTRACTOR’s results of NDT are expressed in terms of percentage. Given the nature of NDT, reasonable disagreement rates up to 6% is deemed reasonable. Rates greater than 6% are an indication of necessary corrective action by the CONTRACTOR. CONTRACTOR shall evaluate performance of NDT personnel and application of NDT to resolve and minimize disagreement rate. COMPANY reserves the right to disqualify previously approved CONTRACTOR NDT personnel based on adverse NDT Assessment results. Repeat of prior work by disqualified NDT personnel by CONTRACTOR (or sub-contractor) shall be determined by the COMPANY, and performed at the CONTRACTOR’s expense. COMPANY’s decision in this regard is final.

3.12 COMPANY reserves the right to conduct NDT Cross-Check (where “Cross-Check” shall mean an additional NDT test) at COMPANY’s expense of any weld subjected to NDT by CONTRACTOR (or CONTRACTOR’s sub-contractor(s)). NDT Cross-Check shall be initiated based on the results of the NDT Assessment at a sample rate deemed applicable. Method of NDT Cross-Check shall be by the same NDT method applied by CONTRACTOR. The COMPANY’s Inspection Department representative responsible for direct supervision of COMPANY’s NDT Assessment and NDT Cross-Check personnel shall have the sole authority/responsibility to determine if and when NDT Cross‑Check is required and the sample rate at which NDT Cross-Check is performed.

3.12.1 If the results of NDT Cross-Check determine that CONTRACTOR’s NDT is either ineffectively applied, or acceptance/rejection inaccurately determined, in accordance with the governing codes or standards, CONTRACTOR may be required, at the discretion of the COMPANY, to perform further NDT Cross-Check at CONTRACTOR’s cost at a sample rate determined by the COMPANY utilizing an independent approved NDT Service Provider.

3.13 Welds found rejectable by either NDT Assessment or NDT Cross-Check in accordance with the acceptance criteria of the governing codes and standards for affected welding shall be repaired as directed by the governing codes and standards, reexamined following repair by the same NDT methods. Additional NDT for “penalty/tracer” NDT may be required as directed by the governing codes and standards.

3.14 CONTRACTOR shall submit Hydrostatic Test Packages prior to conducting hydrostatic tests of piping, pipeline, and equipment for COMPANY review and approval in accordance with SAEP-1160, Section 8. The hydrostatic test shall comply with SAES-A-004, SAES-L-150, and GI 0002.102.

3.15 RTR Piping installers shall be trained and qualified in accordance with RTR manufacturer’s requirements.

3.16 Submittal of Third Party Inspection and Testing Reports

3.16.1 CONTRACTORs shall direct require their Subcontractors to direct their approved third party Inspection and Testing Subcontractors to include COMPANY Inspection Department (ID) as the prime recipient of all required inspection and testing reports as stipulated in this Contract and any applicable SAUDI ARAMCO requirements referenced by this Contract. The third party Inspection Subcontractor shall issue original reports simultaneously to both the CONTRACTOR and COMPANY Inspection Department (ID) project representative of the applicable COMPANY geographical or operating area, for review.

3.16.2 Inspection and testing reports shall be legibly signed or stamped and shall be easily traceable to the originating qualified and approved personnel.

3.16.3 CONTRACTOR shall maintain a record of all COMPANY Inspection Department reviews, correspondences, and non-objection records evidencing compliance with the requirements established in 3.16.1 and 3.16.2 above.

3.16.4 Inspection required to achieve Mechanical Completion shall not be considered achieved until all items referenced in 3.16.1 and 3.16.2 above have been completed by CONTRACTOR and its SUBCONTRACTORs and accepted as completed, in writing, by COMPANY.

3.16.5 Submittal of any Inspection and Testing reports directly to COMPANY shall not relieve CONTRACTOR from its responsibilities under this Schedule Q.

### 4. IDENTIFICATION AND TRACEABILITY

4.1 CONTRACTOR shall include in the Construction Phase Quality Plan procedures to identify inspection and test status. The status report shall identify all CONTRACTOR and subcontractor required inspection and tests for each system, when it is scheduled, when it was completed, and any non-conformances discovered during the test or inspection. Inspection status reports shall be kept current and shall be available for COMPANY’s review at all times. Identification of inspection and test status of welded joints shall be in accordance with SAEP 1160.

4.2 CONTRACTOR shall implement an identification procedure for all materials, parts and components, including partially fabricated assemblies. Identification of an item shall be addressed either by using tags, stamps, color coding, stencils or labels. The location and the method of identification shall not affect the function or quality of the item being identified. The procedure shall require that verification of correct identification of material, parts and components be made and documented prior to installation.

4.3 Traceability shall be maintained on equipment, materials, parts and components, as specified in COMPANY standards and manufacturer’s specifications. Unless otherwise specified in SAEP-1160, CONTRACTOR shall include a documented system for tracking pipe welding rejection including that of sub-contractors, detailing reporting of repair rates, and accounting for required tracer (penalty) radiography. Documents and records shall enable an item to be traced throughout fabrication, erection, installation, repair, modification and use of the item.

5. CUSTOMER PROPERTY

CONTRACTOR shall implement a documented control system for all COMPANY’s supplied material or equipment. The written procedure shall provide for receiving inspection, proper storage, and maintenance of such material and equipment. This procedure shall have provisions for dealing with losses, damage or other problems discovered with such material and equipment.

6. PRESERVATION

CONTRACTOR shall include procedures for handling, storage, and preservation of material as specified in all applicable specifications, manufacturer recommendations and COMPANY’s standards. The procedure shall list all inspection schedules for maintaining the quality of the material or equipment as well as provide for documentation that the required activities have been performed. Individuals responsible for special handling, storage and preservation shall be fully qualified to do so, and supplied with predetermined WORK and inspection instructions. Data concerning handling, storage and preservation shall be included on the Monthly Materials Procurement Status Report as specified in Schedule “G” and shall be available at site at time of material/equipment receiving.

7. CONTROL OF MONITORING AND MEASURING DEVICES

7.1 CONTRACTOR shall include procedures for the control of inspection, measuring and testing equipment. Specific tools and equipment shall be identified to make and perform tests in the field with instructions for their use, calibration, and storage. The CONTRACTOR shall identify, maintain, control, adjust, and calibrate all tools, gauges, instruments and other measuring and testing devices used for controlling quality. Calibration shall be performed at established periods as specified in the most stringent of COMPANY standards, other applicable standards, or manufacturer recommendations; if no standards apply, the calibration cycle shall not exceed six months. CONTRACTOR shall provide backup equipment when the primary equipment is being calibrated or tested.

7.2 CONTRACTOR shall maintain a log of all testing, measuring and inspection equipment calibration status and expiry date.

7.3 CONTRACTOR personnel performing tests and calibrations shall be trained per applicable international or manufacturer requirements. CONTRACTOR testing and calibration personnel as well as testing facilities shall be subject to COMPANY approval. If CONTRACTOR personnel do not perform tests and calibrations, CONTRACTOR shall request COMPANY approval for the agencies or the manufacturers selected to perform tests and calibrations

7.4 CONTRACTOR shall review and document the validity of previous inspection and test results when inspection, measuring and test equipment is found to be out of calibration. A copy of the report shall be submitted to COMPANY.

8. RADIATION SAFETY

8.1 CONTRACTOR is the principal party responsible to assure that sub-contracted NDT Service Provider(s) involved with Industrial Radiography on the project comply with COMPANY’s safety requirements defined in SAEP-1141 and GI 150.003. Responsibilities of the CONTRACTOR may be carried out by the NDT Service Provider’s Radiation Safety Office. However, CONTRACTOR remains the principal responsible party.

8.2 CONTRACTOR shall assure that CONTRACTOR staff includes at least one individual having documented experience related to radiation safety and the safe application of Industrial Radiography in order to maintain a program of Radiation Safety review of onsite radiographic technicians. Such individual may be the CONTRACTOR’s NDT Coordinator, Safety Personnel, or other individual(s) having direct field responsibilities for the project.

8.3 When the CONTRACTOR’s (including sub-contractors) NDT activities involve six (6) or more NDT Radiography (RT) crews on the same Project site, CONTRACTOR shall provide a “Site-in-Charge” technician to assure the safe utilization of radiation sources used for radiography. The “Site-in-Charge” may be from the CONTRACTOR’s direct hire personnel or provided through the subcontracted NDT Service Provider. A Site-in-Charge technician shall be a Sr. Industrial Radiographer meeting the qualification requirements of SAEP-1142 and having a minimum experience of 5 or more years as NDT Level II technician. COMPANY may require CONTRACTOR to maintain an onsite Radiation Safety Officer depending on the volume of radiography conducted simultaneously on the project or in response to concerns for safety based on adverse Radiation Safety Assessment findings.

8.4 CONTRACTOR and its Subcontractors shall establish a work permit system or incorporate into an existing work permit system, a method of notification of where and when radiography will be conducted on the project. Notification will be posted at sufficient locations necessary that CONTRACTOR’s on-site supervisors and group leaders and COMPANY’s personnel are made aware of ongoing Radiography.

8.5 CONTRACTOR shall direct NDT Service Providers to maintain regular onsite safety audits of their NDT technicians utilizing radiography. NDT Service Provider personnel conducting safety audits shall be licensed Radiation Safety Officers with valid license issued by King Abdulaziz City for Science & Technology (KACST). Frequency of safety audits shall be sufficient to assure that the performance of every NDT technician involved in radiography on the site is evaluated at least once per month for the duration of the Project. All safety audits will be documented, results maintained by CONTRACTOR and made available upon demand by the COMPANY.

8.6 COMPANY reserves to right to conduct Radiation Safety reviews and assessments at any time radiography is used or thought to be used on the Project. Radiation Safety reviews may be conducted by any of the COMPANY’s Inspection Department personnel whereby such reviews are conducted without involvement of the radiographer’s “Controlled Area” (see SAEP-1141). Radiation Safety Assessment by the COMPANY shall be by the COMPANY’s Inspection Department Radiation Safety personnel.

8.7 Immediate notification shall be sent to the COMPANY’s Inspection Department Radiation Safety personnel in the event results of Radiation Safety reviews by either CONTRACTOR or COMPANY’s onsite personnel indicate potential unsafe practices by radiographic technicians. COMPANY will follow-up with Radiation Safety Assessment(s) as deemed necessary by COMPANY.

8.8 COMPANY’s Inspection Department Radiation Safety personnel may, at any time and frequency deemed necessary, conduct Radiation Safety Assessments by the COMPANY’s Inspection Department Radiation Safety personnel. Actions resulting from adverse findings of the Radiation Safety Assessment are clearly defined in SAEP-1141 that includes up to suspension of works involving the use of ionizing radiation of industrial radiography and such suspension remaining in effect until corrective action reviewed and approved by the COMPANYs Radiation Safety personnel.

END OF ATTACHMENT IV TO SCHEDULE Q

ATTACHMENT V TO SCHEDULE “Q”

SUMMARY OF QUALITY SYSTEM DELIVERABLES

| No. | Title | First Submittal to COMPANY | Subsequent submittals to COMPANY |
| --- | --- | --- | --- |
|  | Quality Plan:  Paragraph 3.2 of Schedule “Q” | Twenty one (21) calendar days after the effective date of Contract and for any significant changes | Within 7 calendar days of each revision requirement |
|  | Organization Chart(s)  Paragraph 5.12 of Schedule “Q” | With Quality Plan submittal | When changes occur |
|  | Personnel Qualifications:  Paragraph 5.6 of Schedule “Q” | Prior to assignment of personnel on the project | Prior to bringing new Quality personnel on the project. |
|  | Quality Audit Schedule:  Paragraph 7.3.2 of Schedule “Q” | Within twenty one (21) calendar days of the effective date of the Contract | Within 7 calendar days of revisions |
|  | Audit Report: Paragraph 7.3.5 of Schedule “Q” | Within fourteen (14) calendar days of completion of the audit and re-audit. |  |
|  | CONTRACTOR, Vendor and Subcontractor non-conformities: Paragraph 7.5.3 of Schedule “Q” | Within forty eight (48) hours of reporting each non-conformance | Notification of clearance required |
|  | Non-conformance Summary: Paragraph 7.5.5 of Schedule “Q” | After the first non-conformance is issued | Weekly for the Project Progress Meeting |
|  | Management Review results, Paragraph 4 of Schedule Q | Within two (2) weeks after scheduled review |  |
|  | Quality Management Report Paragraph 7.7 of Schedule “Q” | Sixty (60) calendar days after the effective date of the Contract | Monthly |
|  | Evidence of manufacturer prequalification  Paragraph 1.2.1 of Attachment III | Two (2) weeks prior to placement of purchase order. |  |
|  | Inspection/Fabrication Status Report: Paragraph 2.4 of Attachment III | One week after the first purchase order is awarded for the Contract | Weekly |
|  | Inspection Assignment Package; Paragraph 3.18 of Attachment III (including Procurement ITP’s) | Twenty one (21) calendar days prior to pre-inspection meeting or fourteen days prior to final inspection for Level I inspection. |  |
|  | Pre-inspection Meeting and Vendor Inspection Reports Paragraph 3.22 of Attachment III | Ten (10) calendar days after the pre-inspection meeting or first inspection visit for each supplier | Ten (10) calendar days after each inspection visit and weekly for Level 4 |
|  | Two-week look-ahead schedule;  Paragraph 3.3 of Attachment III Paragraph 1.6 of Attachment IV | Fourteen (14) calendar days before the start of any inspection activity of first purchase order or start of construction activities | Weekly |
|  | Inspection/Shipping Release;  Paragraph 3.26 of Attachment III | Within forty eight (48) hours of issue |  |
|  | Inspection Disposition Report; Paragraph 3.27 of Attachment III | Two (2) weeks after equipment and materials are released for shipment |  |
|  | Special Process Procedures and Personnel Qualification Procedures:  Paragraph 3.11 and 3.13 of Attachment III; Paragraph 2.1 of Attachment IV | Twenty one (21) calendar days prior to operation or test | Prior to execution |
|  | Construction Inspection and Test Plans: Paragraph 1.1 of Attachment IV | One month prior to start of construction WORK | Revision Approval prior to execution |
|  | Hydrostatic Test Package: Paragraph 2.1, Attachment IV. | Prior to each hydrostatic test. | Prior to each hydrostatic test. |

END OF ATTACHMENT V TO SCHEDULE Q