E2-4(D): Materials Quality Assurance Plan

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Abbreviation	Definition
API	American Petroleum Institute
Genesis	Genesis Pipeline Canada Ltd.
GRR	Goods Received Report
IRC	Inspection Release Certificate
ISO	International Organization for Standardization
ITP	Inspection and Test Plan
MDR	Manufacturer Data Report
MIV	Materials Issue Voucher
NEB	National Energy Board
NOVA Chemicals	NOVA Chemicals Corporation
NCR	Non-Conformance Report
NIR	No Inspection Required
PMT	Project Management Team
Project	On-Site Brine Relocation Project
QA	Quality Assurance
QC	Quality Control
RDR	Receipt Discrepancy Report
ROS	Require on site

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1.0 QUALITY ASSURANCE FOR PROCUREMENT OF MATERIALS

1.1 Quality Management

Procurement for the On-Site Brine Line Relocation Project (Project) will use existing NOVA Chemicals[1] Quality Management Procedures as the basis for materials purchase and management for the Project. The fundamental principle is to procure materials that meet the applicable codes and standards specified in the Project Application to the National Energy Board (NEB).

1.2 Quality System Standards

Quality System requirements for suppliers of critical equipment will follow the intent of the appropriate ISO 9000 series standard. Only suppliers with current ISO 9000 series standard (or API Specification Q1 for pipe suppliers) will be engaged. Suppliers and manufacturers shall have a current, third-party audited QA/QC (Quality Assurance/Quality Control) program.

1.3 Scope of Document

This Materials Plan applies to all bulk and tagged materials purchased directly by Project Procurement. Materials purchased by the Contractor shall follow the Contractor's QA/QC Manual, which will be subject to audit and approval.

2.0 EXPEDITING FUNCTION

2.1 Coordination of Inspection Activities

Expediting, as required, shall coordinate all inspection activities relating to equipment/ material inspection and tests with the Project QA/QC Coordinator.

These activities may include:

- develop an Inspection and Test Plan (ITP) for the Supplier to outline required visits by the Project Management Team (PMT), Inspection and Expediting. This plan is subject to change, depending on Project circumstances;
- receive inspection reports, releases, etc. from the Project QA/QC Coordinator;
- monitor suppliers to ensure compliance with all inspection requirements and providing timely notifications for inspection activities or tests; and
- ensure timely updates to the relevant material tracking system.

2.2 Goods Received Report

Notwithstanding the final documentation requirements, expediting responsibilities are not complete until the materials are delivered to the jobsite (or designated warehouse) and a

[1] As noted in the application, Genesis Pipeline Canada Ltd. (Genesis) is a wholly-owned subsidiary of NOVA Chemicals (Canada) Ltd., which is in turn wholly, owned by NOVA Chemicals Corporation (NOVA Chemicals).

final GRR has been issued by the receiving personnel at the jobsite once Inspection has released the materials. The GRR shall be created complete with the receiving information of goods physically received against the purchase order, and attachments relating to each particular shipment. An electronic version of the GRR is acceptable in lieu of a hard copy.

2.3 Non-Conformance Report

The Project QA/QC Coordinator will report all deficiencies which could affect the acceptability of the completed work to specification or drawing or cause a delay in completion due to rework. The Construction Contractor shall issue all Non-Conformance Reports (NCR) to the Project QA/QC Coordinator for information and approval of rework/rectification method. The Construction Quality Inspectors or the Project QA/QC Coordinator will also issue NCRs to the Construction Contractor where deficiencies are observed.

2.4 Shop (Field) Expediting Assignment

Shop expediting activity commences upon issuance of purchase orders. As relevant, the following documents shall be reviewed by the assigned Field Expediter:

- purchase orders and/or interim notice of awards;
- supplier document requirements;
- in-house reports;
- minutes of meeting; and
- production programs/supplier schedules.

2.5 Shop (Field) Expediting Process

With each visit to the Supplier’s facility, the Field Expediter’s activities shall include, as a minimum, the following:

- confirm shop order entry (initial visit);
- review and documenting the progress of deliverables against manufacturing schedule/ strategy;
- undertake corrective action with supplier management, if required; and
- submit Field Expediting Report, highlighting any activities that might negatively impact the Supplier’s progress (e.g. labour strike, financial status, etc.).

Significant delivery issues must be reported IMMEDIATELY by phone or e-mail to the Project Expediter and Project Procurement.

2.5.1 Material Receipts

The Field Expediter shall confirm material receipts by checking that the material is clearly marked with the appropriate purchase order number and/or assigned shop order number, and segregated, if required.

2.5.2 Physical Progress and Corrective Action

The Field Expediter shall confirm progress by comparing physical progress against the original (or latest approved) manufacturing schedule. Discrepancies should be addressed with the Supplier's representative(s) and management and reported to Project Procurement. If there is any indication that slippage is possible, the Project Expediter will work with the Supplier's representative and management to develop a mitigation plan.

2.5.3 Field Expediting Reporting

The Field Expediter shall complete the appropriate expediting report and forward to Project Expediter and Project Procurement. Any back-up documents referred to in the report, such as production schedules and photographs, may be forwarded separately. The expediting report shall be detailed and must avoid referencing previous reports in order to establish complete information for a particular visit.

2.5.4 Final Documentation and Close-Out

Expediting Group shall assist in the final close-out of the purchase order, including, as a minimum, confirming the following activities:

- all supplier documents have been received and accepted;
- all equipment/material has been received;
- all NCRs have been resolved;
- all GRRs have been received and recorded; and
- a Supplier Performance Evaluation has been initiated, if required.

2.6 Expediting Levels

Expediting Levels are assigned by the Expediting Group with input from the PPM/Procurement Representative and Engineering. This is to ensure effective expediting and to add maximum value to the overall Project.

Expediting Levels are decided based on the following criteria:

- history of the Supplier (past performance);
- no history (new Supplier);
- promised delivery in relation to require on site dates (ROS);
- inspection level;
- complexity of the equipment;

- construction schedule requirements;
- location of manufacturing for the equipment;
- number of manufacturing locations; and
- cost of purchase order.

The criteria detail is not exclusive and the Level of Expediting will be reviewed on a regular basis for each purchase order and can be assigned a different level. This will be at the discretion of the PPM/Procurement Representative, Engineering and Expediting Group.

Expediting Level	Equipment	Definition
Expediting Level 0 - Not required	Non equipment	No expediting required by Expediting Group. Buyer will be the owner of this package
	Non tag equipment, no part no., not long lead	1. No documents
Expediting Level 1 - Low Maintenance	Bulk Material, Instrumentation and Valves	1. Low maintenance follow up on small material or bulk material - Expediting Group via phone or email
		2. No shop expediting required
		3. Low complexity of material and documentation
		4. Inspection level 0 - 1 required
		5. Shipping on schedule prior to ROS date and not on critical path
Expediting Level 2 - Medium	UPS, Line Pipe, small vessels, electrical, control valves and structural steel	1. Medium maintenance follow up on small to medium size mechanical, electrical and long lead piping.
		2. Monthly Shop expediting required (NOVA Chemicals does reserve the right to change this)
		3. Medium complexity of material/equipment and documentation

Expediting Level	Equipment	Definition
		4. Material/Equipment is important to the overall schedule and can have an impact on construction 5. Inspection required 6. Shipping on schedule prior to ROS date or not on critical path
Expediting Level 3 - Moderate	Switchgear, MCC, buildings, Large Vessels, blowers, pumps and motors	1. Large equipment with more than one major components with multiple sub-suppliers. 2. Bi-weekly Shop Expediting required 3. Moderate complexity of material/equipment and documentation 4. Equipment is critical to the overall schedule and could lead to impacts on construction 4. Inspection required 5. Shipping is on critical path
Expediting Level 4 - High	Any material that has been identified on critical path	1. Any material /equipment that has slipped and is a delay to the project or affects the critical path 2. Resident Expeditor to be located at Supplier's facility

Levels of criticality are subject to change (to a higher or lower level) based on the revised Project schedule requirements or if a significant delivery delay is anticipated.

The PMT may utilize approved third-party agencies, project management, inspectors, and engineering personnel, when necessary, to perform the field expediting function.

3.0 INSPECTION FUNCTION

The purpose of this section is to define the inspection activities for various equipment and material purchases and then identify the party responsible for performing such inspection activities, in accordance with the ITP. It does not supersede mandatory inspections required by the various codes and standards, but supplements such

mandatory inspections in order to ensure compliance with purchase order requirements. Each Supplier/Construction Contractor shall provide a Manufacturer's Data Report (MDR), which contains documentary evidence of all inspection and test activities during the execution of the Supply/Construction. In addition to showing the as-built status of the Supply/Construction, the MDR shall evidence compliance status with the relevant Codes, Standards and Specifications.

3.1 Standard Inspection Activities

Standard inspection shall be conducted in accordance with purchase order requirements, Project ITPs and Supplier QC/Inspection Plans. Inspection shall include, as a minimum, the following activities:

- conduct a pre-inspection meeting with the suppliers of major equipment and material orders to review and clarify the purchase order requirements and all applicable requirements;
- verify the use of qualified welders and qualified welding procedures;
- verify correct materials, dimensions, workmanship and finishes;
- review/audit non-destructive examinations, including alloy verification if required;
- witness/review mechanical tests and/or performance tests of equipment as required;
- witness/review pressure testing as required;
- verify painting/coating and shipping preparation;
- verify compliance with purchase order requirements;
- documentation requirements;
- non-conformance reports; and
- final inspection and release.

3.2 Inspection Services

The Project Inspector(s) will work closely with engineering disciplines to ensure requisitions include appropriate quality requirements and that equipment and materials are manufactured, tested, inspected and released for shipment, complete with appropriate documentation, to meet the requirements of the specifications.

3.3 QA/QC Inspection Coordination Responsibilities

3.3.1 Inspection Assignments

Following the supplier selection decision, the Project Discipline Engineer and the Project QA/QC Coordinator will decide if the designated level of inspection (refer to Inspection Levels section for definition) should be revised. This assessment may be based on a number of factors, such as specific history of

the Supplier or a specific concern relating to the technical complexity of the equipment or material.

3.3.2 Correspondence

All correspondence between Suppliers and Project personnel shall be in writing via email and shall reference the applicable purchase order number and item number.

3.3.3 Technical Questions

Technical questions and/or fabrication problems arising after placement of the purchase order shall be submitted in writing by the Supplier to Project Procurement and Project Expediter, with a copy to the Project QA/QC Coordinator. The Project Expediter will coordinate with the Project QA/QC Coordinator for resolution. The Project QA/QC Coordinator shall be responsible for coordinating the resolution of the question and/or problems with Project Engineering personnel, and will respond to the Project Expediter, who in turn will respond to the Supplier.

Technical or fabrication questions from Project Engineering during fabrication will be handled with the Supplier through the Project Expediter. The Project QA/QC Coordinator shall be copied on all such items.

3.4 Inspection Purchase Order Requirements

3.4.1 Inspection Notification

The PMT requires that adequate notification be given so that inspection activities may be properly scheduled. All purchase orders subject to inspection shall contain a paragraph addressing this topic. The Supplier shall notify the Project QA/QC Coordinator five (5) days prior to all designated witness and hold points.

3.5 Inspection Levels

The following Inspection Levels reflect the minimum surveillance activities but in no way limits the activities that may be attended by Buyer's Inspection Representative. The final witness and hold points will be established during the initial inspection.

To assist Supplier in understanding Buyer's inspection level system, the following brief definitions are offered. Buyer retains the right to change the level during the duration of the fabrication cycle.

a) Inspection Level 0

No Buyer's surveillance or inspection will be performed. Buyer visual inspection at receiving only.

b) Inspection Level 1

Buyer will perform final inspection only. Final inspections are performed prior to shipment from Supplier's facility or at the installation site, as specified in the requisition/purchase order documents or as otherwise agreed during the course of Supplier's performance. This may also include witnessing of the product functionality and final testing by specialist engineers and/or the inspector. Final inspection at Supplier's facility will require issuance of an Inspection Release Certificate (IRC) prior to product shipment.

c) Inspection Level 2

Limited to in-process surveillance or inspection by Buyer, that may include a Pre-Inspection Meeting. At a minimum, telephone contact shall be maintained with Supplier until surveillance or inspection points detailed in the Assignment Instructions are required. Final inspection at Supplier's facility will require the issuance of an IRC prior to product shipment.

d) Inspection Level 3

Full in-process surveillance or inspection by Buyer and shall include a Pre-Inspection meeting. At a minimum, telephone contact will be maintained with Supplier until surveillance or inspection points as detailed in the Assignment Instructions are required. Final inspection at Supplier's facility will require the issuance of an IRC prior to product shipment.

e) Inspection Level 4

Full time resident surveillance or inspection by Buyer as detailed in the Assignment Instructions. Final inspection at Supplier's facility will require the issuance of an IRC prior to product shipment.

3.6 Inspection & Test Plans

Requirements for inspection are based on engineering requirements in technical requisition as well as additional inspection requirements as added by Project Engineering and the Project QA/QC Coordinator. Construction Contractors shall submit ITPs for approval prior to award of contract.

The awarded Supplier is to incorporate inspection points into its ITP and submit to Project Procurement. This will become the controlling ITP document for the order. The ITP will be reviewed and approved by PMT.

ITPs will designate the proposed inspection activities and the extent of inspection to be conducted for the applicable level of inspection. These plans will be as item specific in nature as possible. However, requirements of the purchase order will govern if there is a discrepancy between inspection activities listed on the ITP and the applicable purchase order requirements.

3.7 Supplier QC Plans/Inspection Test Plans

All Construction Contractors shall submit QC Plans and ITPs for approval prior to work commencing. The plan shall comply with all requirements of the Project and be subject to the approval of the Project QA/QC Coordinator. When specified by the purchase order, the Supplier may use its ITP for the manufacture/execution of the product of supply. Such plans shall be issued to Project QA/QC Coordinator for acceptance in the form of Supplier QC Plan/ITP in the time stipulated by the purchase order and/or Supplier Data Requirements. Supplier QC Plans/ITPs shall chronologically detail all manufacturing operations and the corresponding inspection/test activities as required by the code(s) of construction, the purchase order and the Supplier's own quality procedures. The Supplier shall also incorporate the project inspection activities into the QC Plan.

The Supplier QC Plan/ITP shall be submitted to Project QA/QC Coordinator for review prior to scheduling the pre-inspection meeting. A pre-inspection meeting shall not be held until the Supplier QC Plan/ITP has been reviewed by Project QA/QC Coordinator.

The Supplier QC Plan will be discussed in detail at the pre-inspection meeting. Project team comments and modifications to the quality plan shall be finalized at the pre-inspection meeting.

The Supplier QC Plan shall be revised in accordance with agreements set forth in the pre-inspection meeting and resubmitted to Project QA/QC Coordinator for final acceptance.

3.8 Inspection Reporting

Inspection activities conducted by the Project QA/QC Coordinator or nominated third-party shall be documented as outlined below. All reports shall be submitted to the Project QA/QC Coordinator via email.

3.8.1 Notes for Pre-Inspection Meeting

A report that contains the minutes of a pre-inspection meeting held with a Supplier to discuss purchase order requirements.

3.8.2 Interim Inspection Report

A report detailing the inspection activities performed during an inspection visit to a Supplier's facility.

3.8.3 Non-Conformance Report

Written notification for identification of major discrepancies detected during manufacture and supply of equipment and materials.

3.8.4 Inspection Release Certificate

A written release issued by the Inspector stating that the materials/equipment has been inspected and is released for shipment.

4.0 LOGISTICS FUNCTION

4.1 Shipping Preparation of Equipment and Materials

All shipments will be packed and labelled in accordance with Project specifications and the subsequent purchase order, unless otherwise agreed.

5.0 SITE MATERIAL MANAGEMENT

The purpose of Site Material Control is to facilitate the overall construction effort by ensuring that all equipment and materials have been identified, purchased, delivered, and subsequently issued in accordance with the construction schedule.

This process includes warehousing, material control, site purchasing, and expediting. These functions have the responsibility for ensuring that materials are available, when needed, to meet the construction schedule. This requires close communication with the associated Engineers, Scheduling, Construction and others so that corrective action can be taken in a timely manner to avoid a schedule delay. Other inherent responsibilities include receiving, warehousing, inventory control issues, identification and disposition of surplus materials, preventative maintenance, positive material identification and procurement and expediting for materials not previously furnished.

All material released for construction will follow the Material Receiving and Issue process.

6.0 MATERIAL RECEIVING AND ISSUE

Materials will be received at a warehouse or designated lay down area. Upon the arrival of the materials, the Materials Coordinator visually inspects the materials on the transport for any visible damage prior to unloading. Where the materials are damaged or non-conforming, the Materials Coordinator can reject the materials and return the transport with the materials to the Supplier.

Once the materials are unloaded, and before signing the carrier bill of lading and/or packing list, the Materials Coordinator:

- checks the materials against the purchase order;
- indicates all quantity discrepancies and damage on the carrier bill of lading and/or packing list prior to final signature and release of the driver;
- notes the details of the delivery on a GRR; and
- signs the GRR as "Received By".

If there is damage or the materials are not conforming to the purchase order, the Materials Coordinator:

- raises a Receipt Discrepancy Report (RDR);
- expedites corrective action via the Procurement Department; and
- relocates damaged materials to a quarantine area if applicable and tags them with yellow "Hold" stickers or tags, pending a decision on their disposition.

Materials are issued using the Materials Issue Voucher (MIV) where applicable. Upon the receipt of the MIV, the Materials Coordinator:

- checks to ensure all necessary information is included and that the required approvals have been obtained;
- issues the quantities requested, if available;
- records the quantities issued on the MIV;
- signs the MIV as "Issued By";
- obtains the Receiver's signature on the MIV as "Materials Received By"; and
- for each item, updates the Stock Record.