Union Pacific Railroad
Supplier Excellence Manual

Contents

1.0 Doing Business with Union Pacific

1.1 About Union Pacific

Union Pacific Railroad Company (UPRR) is the principal operating company of Union Pacific Corporation (NYSE: UNP). One of America's most recognized companies, UPRR connects 23 states in the western two-thirds of the country by rail, providing a critical link in the global supply chain. The railroad's diversified business mix includes Agricultural Products, Automotive, Chemicals, Coal, Industrial Products and Intermodal. UPRR serves many of the fastest-growing U.S. population centers, operates from all major West Coast and Gulf Coast ports to eastern gateways, connects with Canada's rail systems and is the only railroad serving all six major Mexico gateways. UPRR provides value to its roughly 10,000 customers by delivering products in a safe, reliable, fuel-efficient and environmentally responsible manner.

1.2 Purpose of Supplier Excellence Manual

The purpose of this manual is to communicate expectations to our suppliers and the core set of tools, processes and systems that are to be used in the development, design, and manufacture of parts, products and services supplied to UPRR.

In this manual, the terms ‘shall’ and ‘must’ mean that the described requirement is mandatory, while the term ‘should’ means that the described requirement is needed and expected, however, there is some flexibility in how it can be completed.

1.3 Supplier Responsibilities

It is the responsibility of the supplier to understand and ensure compliance with this manual and the policies, procedures and work instructions of UPRR.

1.4 Supplier Code of Conduct

UPRR is committed to high standards of ethical business conduct. As a condition of doing business with UPRR, all Suppliers (suppliers, vendors, contractors, subcontractors, consultants, agents and other providers of materials and/or services) must fully comply with all federal, state, and local laws, rules, regulations, orders, codes and ordinances as outlined in the contract as well as UPRR's Supplier Code of Conduct.

2.0 MATERIAL SUPPLIER-GENERAL QUALITY REQUIREMENTS

2.1 Quality System Requirements.

All material suppliers must be compliant to an international quality management system, such as M-1003, unless granted a waiver by an authorized Supply Representative. In some cases, ISO 9001 may be allowed as a substitute.

2.2 Sub-Tier Supplier Control

The supplier must maintain quality and technical qualifications for sub-tier suppliers/contractors and the products purchased through these sub-tier suppliers. UPRR reserves the right to specify or approve sub-tier suppliers contracted by its suppliers for work performed on UPRR material. This includes, but is not limited to, special process, materials testing services, distributors, and other subcontractors. Special processes include, but are not limited to, Non-Destructive Testing, Heat Treating, Welding, Chemical Processing, Plating & Coatings.

- Suppliers shall flow down to its sub-tier contractors, all relevant requirements imposed by this manual, other contractual documents, and government regulations.
- Suppliers shall conduct regular audits of their sub-tier contractors See section 5.0 of this Manual for more detailed information.
- Audit schedules shall be based on risk based criteria.
- The use of customer designated sources, including tools and gauges, does not relieve the organization of the responsibility of ensuring quality of purchased product.

2.3 Lot Traceability and Material Identification

Suppliers shall establish, document and communicate to UPPR a lot traceability system that tracks components from raw material through inspection and test operations, including rework and sub-supplier procedures and finally through shipment to Union Pacific. As part of sample submission, suppliers must certify compliance with current constraints on restricted substances as specified by PO or contract, especially toxic and hazardous substances.

2.4 Problem Solving

All suppliers for UPRR must establish and maintain documented procedures for implementing a system of closed loop corrective and preventive action with disciplined problem solving methods. UPRR may deploy Supplier Quality Engineers to suppliers to assist in corrective action activities.

2.5 Internal Audits

A supplier must conduct regular internal audits to ensure continued compliance with internal procedures and customer requirements.

2.6 Operator and Inspection Instructions

The supplier will prepare written operation and inspection instructions. In addition, suppliers will train its employees and subcontractors on the operation and inspection instructions and regularly update the operation and inspection instructions.

The supplier may use reduced-frequency (sampling) inspection plans only when historical records indicate that a reduction in inspection can be achieved without jeopardizing the level of quality. The supplier may employ sampling inspection in accordance with nationally accepted standards, as specified by the UPRR.

- If sampling reveals a defect or discrepancy, then 100% inspection of the lot is required until approved by UPRR.
- The supplier shall maintain quality records in sufficient detail to establish evidence that any sampling was representative, the required tests and verifications were properly performed, and that only material meeting specified requirements have been accepted for production and delivery to UPRR. These records shall be available for review by UPRR or an UPRR authorized representative. Copies of individual records shall be furnished to UPRR upon request.

2.7 Packaging Plan

The supplier must comply with specific packaging instructions defined by the UPRR. Suppliers are responsible for verifying with UPRR whether there are any additional packaging requirements or clarifying any unclear requirements.

2.8 Business Changes

Any significant changes in business climate such as acquisitions, divestitures, pending litigation, or any activity that may change the financial viability of the supplier's organization must be communicated to UPRR as soon as reasonably possible.

2.9 Communications

All documentation must be communicated to UPRR in English unless otherwise specified. Suppliers must maintain and have access to an electronic form of communication (i.e., the internet/web).

2.10 UPRR Website

Suppliers must register for and utilize UPRR' systems for maintaining supplier profiles and other requirements, including compliance with this Manual, as directed by UPRR. Suppliers must maintain accurate information within the "Supplier Profile" module of this system. Information and training is available at www.up.com/suppliers.

3.0 SUPPLIER ASSESSMENTS AND QUALIFICATION

UPRR suppliers must be capable of meeting the applicable UPRR business group's quality, delivery, cost, environmental and health, and continuous improvement requirements. UPRR will validate these requirements as a part of its supplier selection process through supplier assessment and qualification activities.

3.1 Supplier Screening/Data Analysis Process

The Strategic Sourcing Group's screening process is based on several factors including the examples below:

- Supplier's current delivery performance based on 100% on-time expectation
- Supplier's quality performance
- Supplier's registration to an industry sector quality system.
- Cost competitiveness
- Supplier's financial strength for future growth

The team responsible for approval will meet and review the outcome of the initial screening process to determine whether the supplier qualification process will continue. Follow-up and/or corrective actions may be requested of the supplier to

continue further in the selection process. If the results are considered acceptable the process will continue.

3.2 Supplier Assessment

Suppliers identified as a potential supplier to UPRR shall be required to complete a Quality System Assessment (QSA)at UPRR's discretion. Suppliers are encouraged to conduct self-assessments to become familiar with UPRR's Quality System expectations. The assessment results will be reported and maintained in the UPRR systems. UPRR may conduct financial assessments/reviews on a periodic basis. UPRR may require annual on-site supplier quality assessments. UPRR reserves the right to schedule additional assessments on an ad hoc basis if there are concerns about risk or performance and/or compliance with the quality system requirements. The costs associated with ad hoc audits for serious or chronic quality issues may be charged to the supplier as determined by UPRR as a condition of continuing business with UPRR.. Third party quality system registration such as ISO-9000 or M1003 may be recognized by UPRR in lieu of a periodic on-site assessment. Any third party providing certification to these standards must be accredited by a country authorized entity such as ANAB (USA).

3.3 Assessment Results

Potential suppliers will receive a formal report following an assessment. If system deficiencies are identified, UPRR may require the supplier to outline corresponding corrective actions within a specified response time period. Failure to provide a suitable response within the specified time period is cause for removal for further consideration. UPRR personnel may discontinue the qualification process at any time at its sole discretion. A successful assessment does not guarantee award or contract for business with UPRR. Additional reviews, including field testing, may be required prior to awarding any business to Supplier.

3.4 Approvals

Types of approvals may be granted:

- **Full approval** – enables UPRR to award business with a supplier at any time within the capabilities or categories listed on the UPRR's Approved Supplier List.

 Conditional approval – enables UPRR to award business to a supplier that is pending a corrective action completion/verification from the Quality System Assessment (QSA). A corrective action plan must be submitted and approved by UPRR within 30 days of request.

 Not approved – suppliers who fail to meet UPRR quality and product requirements. UPRR shall not issue contracts/purchase orders to suppliers who are not approved.

4.0 QUALITY PLANNING AND PRODUCT APPROVAL

4.1 General Requirements

Advanced Product Quality Planning (APQP) is a structured method of defining and establishing the steps necessary to assure a product meets customer expectations. The supplier's manufacturing processes must have the capability to consistently meet these requirements.

The Automotive Industry Action Group (AIAG) (http://www.aiag.org/scriptcontent/index.cfm) defines the general requirements for production part qualification and approval. Additional requirements may apply. Prior to first production shipment, the part or component being sourced must be approved for production by UPRR via one of the following:

- Production Part Approval Process (PPAP)
- Part Identicality
- First Article Inspection (FAI)

4.2 Record Retention

The supplier must retain adequate quality system records including, but not limited to, all advanced quality planning documents, process guidelines, laboratory test instructions, product and process validation test results and gauge/test equipment verification, calibration and performance test methods.

4.3 Change Management

Once the part, component, or service is approved, the supplier shall notify UPRR of any planned changes to the design, process, or site. Conditions requiring notification and/or PPAP resubmission are listed in the latest edition of the AIAG PPAP manual. Note:

Whenever UPRR notification is required, the supplier shall complete the Product / Process Change Notification form located in the appendix section of the latest version of the AIAG PPAP manual unless a different form/procedure is specified by UPRR.

Conditions requiring UPRR notification include, but are not limited to the following:

- Change of material
- New or modified production tooling
- Production parts produced at a new facility
- Product or process changes (internal or externally by sub-suppliers)
- Change of raw material suppliers or sub-supplier for outside services (heat treat, plating, etc.)
- Change in test/inspection methods (techniques)
- Change in engineering drawings or specifications

Failure to contact UPRR and obtain formal approval prior to implementation of changes may result in a New Business Hold. The supplier shall be responsible for compensating UPRR for all associated costs as a result of the unapproved change.

4.4 Drawing and Change Control

The supplier's quality system must ensure the appropriate engineering drawings and specifications are available at the manufacturing, test, or inspection location. The drawings and specifications on hand may include applicable previous revisions if the previous revision level(s) are required by UPRR contract/PO language.

The written procedure(s) should indicate the method utilized for receipt, review, and distribution of all changes and the method of recalling and disposing of an obsolete item. A review process must be established in the supplier's quality system to confirm applicable drawings and specifications are at the latest revision level with the issuing source.

4.5 Advanced Product Quality Planning (APQP)

The latest version of the AIAG (Automotive Industry Action Group) APQP and Control Plan manual describes the work practices, tools, and analytical techniques required for Advanced Product Quality Planning (APQP).

Some of the most important items are listed below:

- Technical and Specification Review

- Design Failure Mode and Effects Analysis (DFMEA)
- Process Flow Diagram
- Process Failure Mode and Effects Analysis (PFMEA)
- Control Plan
- MSA Studies
- Process Capability
- Full Dimensional Layout
- Pass Through Characteristics

4.6 Performance Test Requirements

Suppliers shall conduct performance testing to confirm current production meets design and specification requirements. Testing is to be conducted in accordance with the established control plan. If there are performance test failures, supplier shall stop production immediately, pending analysis of processes and corresponding corrective actions. Suppliers are required to immediately notify the UPRR of any performance test failures, identify the manufacturing location that produced the defective materials, suspend shipments, and identify any shipped products that may be suspect.

4.7 Measurement System Analysis (MSA) Requirements

The Supplier shall perform Measurement Systems Analysis (MSA) studies for all gauges used to measure special characteristics (see Definitions) as defined by the design record (i.e., drawings and specifications).

Acceptance criteria for gauge repeatability and reproducibility (R&R):

- R&R < 10% acceptable and preferred by UPRR
- 10% < R&R < 30% may be accepted by UPRR upon further review
- R&R > 30% not acceptable

Suppliers should reference the latest version of the AIAG Measurement Systems Analysis manual for further details.

4.8 Process Capability Requirements for Characteristics Process Capability Study

Special characteristics require process capability analyses at new product launch and when product or process changes affect these characteristics. Additional periodic

capability analyses may be required by UPRR. If no special characteristics are identified, the Supplier should evaluate and identify product and/or process characteristics that can be used to ensure process capability. This should be reviewed and agreed to by UPRR representatives to ensure alignment and process quality. Initial process studies shall be summarized with the following capability or performance indices: (Cp / Cpk / Pp / Ppk)

4.8.1 Results and Interpretation:

- UPRR minimum requirements for short-term capability and stability is an Index > 1.67.
- UPRR minimum requirements for long-term capability and stability is an index >1.33.
- If acceptance criteria are not satisfied, Supplier shall contact UPRR with a corrective action plan and a modified Control Plan providing for 100% inspection. Variation reduction efforts shall continue until the acceptance criteria are met, or until approval is obtained from UPRR. Note: 100% inspection methodologies are subject to review and concurrence by UPRR.
- For special cases where the annual usage volumes do not meet the guidelines for a thorough process capability assessment, requirements shall be approved by UPRR.
- Suppliers should reference the latest version of the AIAG manual for further details.

4.9 Production Part Approval Process (PPAP)

The PPAP submission will be based on the latest edition of the Production Part Approval Process (PPAP) Manual, available through AIAG (Automotive Industry Action Group). A UPRR representative from Quality Assurance or Strategic Sourcing will identify the appropriate PPAP submission level and any additional requirements for the part or component to be sourced. All PPAP samples must be produced using production tooling and processes at the production line rate. Supplier shall ensure compliance to all requirements listed on UPRR drawings, purchase orders, and engineering specifications.

4.9.1 PPAP Status:

- **Approved:** Indicates product meets all UPRR requirements and authorizes supplier to ship production quantities initiated through purchase orders.
- **Interim Approval:** Permits supplier to ship product on a limited time and/or piece quantity basis. Note: Interim Approval expires after 90 days from time PPAP is dispositioned. A PPAP resubmission is required by the supplier, along with a corrective action, to obtain a status of Approved. Additional guidelines on product containment should be reviewed in the latest edition of the AIAG PPAP manual.
- **Rejected:** Indicates PPAP documentation and/or product does not meet UPRR's requirements for approval. Appropriate action shall be taken by the supplier to correct deficiency and PPAP re-submission is required. Note: Supplier is not authorized to ship product until product is approved by UPRR.

4.10 Part Identicality

Union Pacific, at its discretion, may accept parts shown to be identical to an Original Equipment Manufacturer (OEM). The supplier will be required to provide data proving identicality through licensing or test and computation. Test and computation approval will require submittal of a data package which includes materials, processes, test specifications, system compatibility, maintenance instruction and part interchangeability.

5.0 COST OF POOR QUALITY

Expenses incurred by UPRR associated with the failure of a supplier to meet UPRR's quality requirements, may be charged back to the responsible supplier. Such costs may be debited or invoiced to the supplier. The following list contains examples of COPQ (Cost of Poor Quality) charges that may be assessed. This list should not be construed as exhaustive.

- Personnel travel and associated labor expenses incurred by Union Pacific when travel is required due to supplier quality failures
- Sorting

- Rework
- Line disruption
- Expedited freight
- Cost of increased inspection, inspection delays and failures
- Premium product cost paid to support production
- Excess inventory
- Misidentified parts
- Shipping documentation errors
- Downtime
- Overtime
- Additional manpower
- Equipment breakage
- Associated material losses
- Outside processing required
- Premium product cost paid to support operations
- Rework-labor, tooling, and fixturing

6.0 CLOSED LOOP CORRECTIVE ACTION

UPRR may deploy Supplier Quality Engineers with suppliers based on the criteria stated in the Supplier Development section of this manual. However, UPRR requires all of its suppliers to pursue continuous improvement of their processes.

All suppliers for UPRR must establish and maintain documented procedures for a closed loop corrective and preventive action system with disciplined problem solving methods, shall be used when a non-conformance to specification or design requirements occurs. Any corrective or preventive action taken to eliminate the cause of actual or potential non-conformities shall be appropriate to the magnitude of problems and commensurate with risks encountered. The supplier shall implement and record any changes to the documented procedures resulting from corrective and preventive action. When supplier non-conformances are identified and are determined to be significant in nature, a Corrective Action Request (CAR) will be initiated and sent to the supplier. When a

Corrective Action Request is generated the response will be expected in the 8D (eight disciplines) format.

Once the Corrective Action Request is made the following steps will be implemented:

- The supplier and/or assignee will acknowledge receipt, investigate the system deficiencies, and provide a detailed and complete plan to correct.
- Responses shall include adequate detail and supporting data to assure UPRR that appropriate system corrective actions have been taken. Responses are to be returned by the date required to the UPRR coordinator.

Written responses will include:

- **Identifiable Contact Person**: Identify the contact person(s) responsible for this CAR (if other than assignee).
- **Definition of the Problem**: A statement of the deficiency/condition as documented in the complaint, restated in terms of the supplier's process as necessary.
- **Immediate Containment Action**: Action taken immediately upon identification of the potential noncompliance, such as rejection tags, line checks or sub-supplier notification. Containment actions must be completed within the appropriate time indicated by the UPRR. Failure to do so will negatively impact the supplier quality performance metric.
- **Identify and Verify Root Cause:** The source or origin of the noncompliance, as well as any contributing factors involved. Should include the following three steps of root cause:
    1. **Process Root Cause:** What process failure allowed the nonconformance to be generated?
    2. **Nondetection Root Cause:** Why was the nonconforming product not detected during the immediate process, subsequent processes, and shipment from the supplier's facility?
    3. **Systemic Root Cause:** What management systems allowed the nonconformance to be generated?

Suppliers should be cautious to avoid root causes of "operator error" and instead look deeper for underlying factors. If operator error is truly the cause, error-proofing actions must be employed to prevent recurrence; re-training alone is insufficient.

- **Develop and Verify Solution:** The team must quantitatively confirm actions taken will resolve the problem for UPRR and will not cause undesirable side effects.
- **Implement Root Cause Corrective Action:** The remedial corrective action implemented to address the source or root cause of the noncompliance that will prevent recurrence.
- **Follow-up and Preventive Action:** Preventive actions must include an evaluation of, and corrective action for, other processes or products where the same or similar defect could occur.
- **Recognize the project team.**

The supplier will provide periodic corrective action status reports as directed by the UPRR. Failure to respond to requests will result in escalation to the appropriate UPRR Sourcing Manager and/or Quality Engineer. Supplier's written corrective action plan will be returned to the responsible UPRR coordinator for review of adequacy and effectiveness. This may require an on-site visit at the supplier's/assignee's facilities. Supplier will be notified of acceptance or rejection of plan upon review. If a product or material has been found or is suspected to be nonconforming prior to shipment to UPRR, then supplier must request from UPRR approval for repair or to be "used as is". Until approval is received from UPRR, the product or material must be held at the supplier's facility and shall not be further processed or shipped. When a product or material is returned by UPRR as non-conforming or suspected to be non-conforming, then supplier must conduct performance testing and/or field testing. The analysis must determine the cause(s) of the nonconformance. Failure to respond to a corrective action request may result in penalties up to and including suspension and/or removal from the UPRR Approved Supplier List (ASL).

Union Pacific's Supplier Escalation Program outlined in Section 7.0 may be utilized if:

1. Corrective Action Response is not received by the date specified on form
2. All required sections are not complete
3. Problem solving tools and techniques were not used to determine root cause.
4. Root cause of the quality issue was not identified

7.0 SUPPLIER ESCALATION PROGRAM

The Supplier Escalation Program is a process requiring an increased level of activity with a supplier resulting from supplier's continued failure to perform in the area of quality or delivery.

The Supplier Escalation Program is the methodology used by Union Pacific personnel to define actions, resolve and improve overall supplier performance. It will ensure all parties concerned are informed by providing consistent communication to internal and external customers, while setting clear expectations to our suppliers.

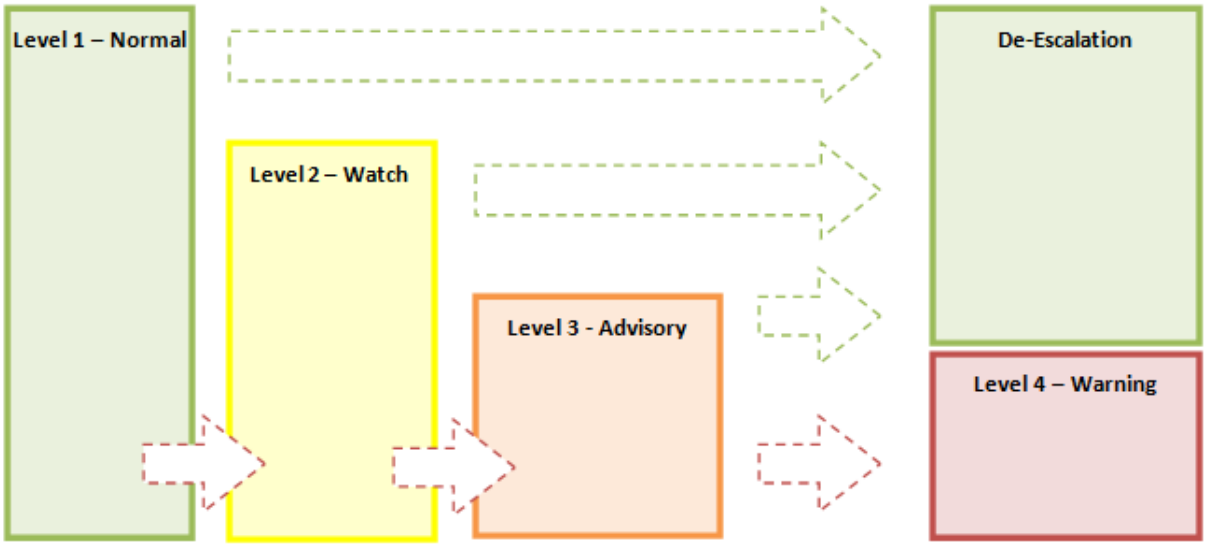
7.1 Criteria for De-Escalation

Supplier will be eligible to exit Escalation Program after meeting criteria defined below:

Quality: Open quality issues have been successfully closed and validated

Delivery:

1. Meet and maintain agreed upon performance goals for a minimum 30 days
2. No recurring issues with On Time Delivery (OTD) or Late Days



Failure to address outstanding quality and delivery issues may result in escalation to Level 4 – Warning status

Warning Status is recognition that is in the best interest of Union Pacific and the supplier to discontinue doing business entirely or for a particular commodity.

8.0 SUPPLIER PERFORMANCE

UPRR reviews supplier quality achievement regularly using measured results and utilizes the review outcomes to make business expansion and de-sourcing decisions. In order to review performance, several types of meetings may be held with suppliers including: Critical Supplier Reviews, Supplier Improvement Teams (SIT), Executive Meetings, etc. Key quality information is generated and housed in UPRR systems. Suppliers are encouraged to access this data on a routine basis to clearly understand their performance to UPRR. Suppliers have 24 hour access to these tools.