



# Ballard Supplier Product / Process Change Notification (PCN) Requirements

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<p align="center"><b>Bill of Documents (BOD)</b></p> <p align="center">List documents here that are to be linked as children of this document.</p>	
<b>Document No.</b>	<b>Description</b>
FRM5100416	Supplier product/process change notification request form (PCN)

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## 1.0 Introduction and Purpose

This policy document expands on the contents of the Ballard Supplier Manual (MAN5100058) by laying out requirements for Ballard's suppliers with respect to supplier product/process change and end-of-life notifications.

To maintain security and integrity of the supply chain and to achieve the quality and reliability standards that Ballard expects of its products, Ballard requires that its suppliers provide notification of, and seek approval for product or process changes prior to their implementation. This document clarifies which types of changes approval is required for and describes the process of notification and approval.

## 2.0 Acronyms and Terminology

### *CHANGE*

An alteration to a product or process.

### *PROCESS*

A combination of people, procedures, methods, machines, materials, measurement equipment, and/or environment for specific work activities to produce a given product or service.

### *PCN*

Product/Process Change Notification - a document sent to Ballard describing a proposed product or process change, the reasons for the change, and the projected impact of the change. Ballard may accept or reject the proposed change.

### **EOL**

End-of-Life. The point at which a product, component, or subcomponent is discontinued or becomes obsolete and unavailable, requiring that a substitution be made.

## 3.0 General Requirements

### **3.1 Change Management System**

The supplier shall have a formally documented change management system in place that reviews, verifies and validates change proposals before implementation. This system shall include customer notification as outlined in section 5 "Communication of a Proposed Change".

If a change is approved, the supplier shall ensure that all associated documents and records are updated to formally deploy the change within their organization including, but not limited to:

- Procedures, work instructions, drawings, and specifications
- Process FMEAs, process flowcharts and process control plans
- Floor layouts
- Measurement system analysis
- SPC charts and capability studies

- Preventive maintenance instructions
- Training instructions and records
- Approved supplier list
- Environmental, health and safety impacts
- Qualification plans and reports

### **3.2 Change Approval**

The supplier shall not make changes to their products or processes without prior written consent and approval from Ballard. These include changes to, or additional:

- Locations
- Facilities
- Manufacturing process
- Manufacturing equipment
- Test or measurement process
- Test or measurement equipment
- Supplier or sub supplier
- Components or subcomponents
- Raw material
- Product design

This also includes any other change that may affect product form, fit, function, or appearance, or adversely affect reliability, quality, or safety. For further guidance with respect to what types of changes require notification and approval, please refer to Appendix A.

### **3.3 Review Period**

Ballard does not accept or acknowledge a time window or time limit to approve a proposed change. The supplier shall not deploy a change unless Ballard has communicated its final approval. Ballard is committed to providing a response within a reasonable amount of time.

### **3.4 PCN Policy Communication and Cascade**

Requirements set forth in this specification shall be communicated to all affected personnel within the supplier's organization. Suppliers shall also send these requirements to their suppliers and sub-suppliers.

## **4.0 Communication of a Proposed Change**

Ballard may require 6 to 12 months of advanced notice of a change to evaluate and mitigate any potential negative effects of the change. The supplier shall provide 12 months of advanced notice wherever possible.

Supplier shall utilize FRM5100416 "Supplier Product / Process Change Request (PCN)" to request that Ballard review and approve a proposed change. The completed form shall be signed and scanned, with supporting information attached to the PDF document. The document shall be forwarded to the Ballard purchasing

contact for the affected Ballard part number via email and shall include the following:

- PCN tracking number (Date mmddyyyy followed by the Ballard 7-digit part number, and the 5-digit vendor ID found on PO). The date, part number and supplier ID shall be separated by an underscore. e.g.: 10/30/2018\_512345\_21642.
- Notification date
- Proposed first ship date for change
- Description and scope of change
- Effect(s) of NOT making proposed change
- A statement confirming that no other change, besides the one outlined in the PCN, is included in the submission
- Products affected
- If the change involves an EOL component or product, provide recommended equivalent replacement component or product
- Parameters that may be affected
- Method for identifying changed product
- Reason for change
- Anticipated (positive and negative) impact on form, fit, function, reliability, quality, or safety
- Qualification plan summary and results
- Launch plan
- Description of attached, supporting documentation
- Date when qualification samples are available
- Last date of manufacture of the unchanged product
- Name, address, telephone, and e-mail of supplier contact

If a submitted PCN does not have a direct effect on a Ballard production released product, Ballard may elect not to act on the submission.

## **5.0 Change Qualification**

The supplier shall take all necessary steps to fully characterize and qualify the proposed change and provide quantitative evidence indicating that the change would have no detrimental effect on form, fit, function, reliability, quality, or safety. Ballard may elect to conduct its own characterization and/or qualification activities to further corroborate the data.

## **6.0 End -of-Life and Last Time Buy**

The supplier shall notify Ballard a minimum of twelve months prior to the discontinuation of the product and shall allow Ballard to perform a last time buy to qualify and phase in the recommended replacement. Suppliers shall continue to support field returns and failure analysis for their product for a minimum period of the product's warranty period beyond the last time ship deadline.

## **7.0 Change Approval / Rejection**

The supplier must receive written approval (e.g., email with scanned completed PCN form indicating approval) from Ballard Supplier Quality Engineer or Purchasing

contact before proceeding with the launch plan. Verbal approvals are not admissible. If the change is denied, the supplier will be expected to continue providing products or services using the current production approved process and/or design.

Suppliers will be held accountable for changes made to their process without prior notification and approval that adversely impact the form, fit, function, reliability, quality or safety of Ballard's or our customer's products. Supplier will reimburse Ballard for all additional costs, reasonably incurred, including but not limited to scrap, rework, testing, repair, replacement, shipping and/or labor costs.

### ***7.1 Ballard PCN Review, Approval or Rejection Process***

All supplier PCN requests shall be reviewed cross-functionally by a team comprising of (at least) Supplier Quality, Purchasing, Product Development (part owner), and Program Management. If the change will affect Service or Production, representatives of these teams must be involved in the review of the change. Changes affecting customer requirements may also require approval by the Commercial team, as well as Ballard customer notification and approval.

The results of the review shall be communicated to all affected groups internally at Ballard, as well as to the supplier, by emailing the completed (signed) PCN form.

### ***7.2 Ballard Internal Record Keeping***

All received supplier PCN forms shall be stored in the following directory by the Ballard purchasing contact or supplier quality engineer:  
G:\Quality\Supplier Quality and Development\PCN \_Product Process Change Request Records

When the PCN form is signed off, a scan of the completed form and accompanying Ballard signatories form shall be stored in the same folder, regardless of whether the change was accepted or rejected. The scanned PCN form is then returned to the supplier while the Ballard signatories form remains an INTERNAL record only.

Supplier changes that result in a change order at Ballard shall also have the signed and completed PCN form attached to the change in Agile. This requirement will apply to all PCN requests after October 31<sup>st</sup>, 2018, and does not apply to previously received PCNs. It also does not apply to "MEA Confidential" changes.

When the proposed change does not result in a modification to a Ballard process, procedure, design or specification and no CO is created, the change approval process must still be completed, and the reply sent to the supplier. Program managers shall be notified of all changes and the outcome. Any changes which affected schedule and cost should be brought to program attention.

## **8.0 Related Ballard References**

MAN5100058 BALLARD Supplier Manual  
FRM5100416 Supplier Product / Process Change Request (PCN) Form  
FRM5100105 Supplier Profile

## **APPENDIX A: Further Guidance on Types of Changes Requiring Notification and Approval**

<b>Change Category</b>	<b>Example</b>	<b>Ballard Approval Needed</b>	<b>Ballard Approval Not Needed; Control changes within QMS</b>
Plant/Environment	Change to or addition of production plants/sites that will manufacture Ballard products	X	
	Changes in the work environment that could affect the mfg or storage condition of Ballard products (e.g., high temperature and humidity)	X	
	Changes in the work environment that do not affect Ballard's materials (e.g., lighting)		X
Manufacturing Processes, Equipment & Tooling	Change of production line layouts (e.g., physically moving a compression molding press)	X	
	Change of production methods (e.g., cell mfg to batch mfg)	X	
	Change manufacturing of a Ballard product from one piece of equipment to another (ex: line A to line B)	X	
	Maintenance of work standards/PM's		X
	Shift Changes		X
	Adding/Deleting/Changing to/from automated mfg processes	X	
	Addition/Modification/Repair/Transfer of jigs/tools/fixtures	X	
	Changes to processing conditions or methods (Ex: speed, temperature, drying time, etc.)	X	
	Adding new equipment (that will be used to run Ballard product)	X	
Materials/ Supply Base	Change/addition of supplier, sub-tier supplier/outside or contract manufacturer	X	
	Any change that will affect the fit, form, function, cleanliness, or appearance of a material <u>that is or is not specified in a drawing</u>	X	
	Requesting to use recycled materials or changing mixing ratios/times, etc.	X	

<b>Change Category</b>	<b>Example</b>	<b>Ballard Approval Needed</b>	<b>Ballard Approval Not Needed; Control changes within QMS</b>
Inspection/ Calibrated Devices	Changes to the <b>in-process</b> or raw material sampling methods, # of inspection points, inspection items or		X
	Changes <b>to final inspection</b> sampling plans, # of inspection points, inspection items or ratios	X	
	Changes to or inability to recalibrate gages/equipment used to perform outgoing inspections on Ballard products	X	
Packaging/Warehouse conditions	Changes to "internal" packaging components (e.g., bags, trays, cores)	X	
	Changes to "external" packaging components/configurations (ex: carton boxes to plastic bags, bulk	X	
	Requests to change transportation methods (freight forwarders, air vs. sea shipment, etc.)	X	
	Changes to packaging quantities (relative to the originally agreed upon specifications or those deviating from current packaging practice)	X	
	Changes in the warehouse environment that could affect the mfg or storage condition of Ballard products (e.g., high temperature and humidity)	X	
	Physical location change of warehouse/storage	X	