

# GLOBAL PROCEDURE

TITLE: Critical Risk Suppliers Escalation and Improvement Process	NUMBER: CHI-SDE20-0001-B	REVISION: B
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## 1. Purpose

- 1.1. This procedure defines a methodology to identify critical risk with high business impact suppliers. SDE team focus the effort on Continuous Improvement program using tools such as controlled shipping to work with the suppliers for containment and improvement to ensure suppliers are capable of delivering good product that meets LF requirement and expectation.

## 2. Scope

- 2.1. This global document is applicable to all Littelfuse approved production part & direct material suppliers globally.

## 3. Responsibilities / Authorities

- 3.1. Supplier Development Engineering is responsible for
  - 3.1.1. Performing risk score to the suppliers in vendor A list based on critical risk supplier score matrix.
  - 3.1.2. Working with Procurement, Operation and related functions to identify the critical or poor performance suppliers who are not in vendor A list, performing risk score to these suppliers based on critical risk supplier score matrix.
  - 3.1.3. Identifying the critical risk suppliers who fail of the cut-off scores based on supplier quality and business risk score matrix.
  - 3.1.4. Leading the meeting with internal functions to inform and escalate internal functions the critical risk suppliers score status, discussing the plan of Continuous Improvement Program and controlled shipping if necessary.
  - 3.1.5. Leading the kick off meeting with management of the critical risk suppliers. Informing the risk score performance and requesting the development of a CI program and controlled shipping if necessary.
  - 3.1.6. Validating the CIP execution. Monitoring CS1/2 record data and verifying effectiveness if applicable, leading regular review meetings with the CIP team, verifying and reporting the effectiveness of the CIP program.
- 3.2. Procurement is responsible for
  - 3.2.1. Providing inputs for suppliers risk scoring from business perspective,
  - 3.2.2. Providing inputs for the suppliers who are not in vendor A but need to be included in the risk scoring matrix from business perspective. Identifying and agree on the risk score suppliers list input by the rest of the functions.

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- 3.2.3. Participating in the meeting with management of the critical risk suppliers and supporting to drive the implementation of the CIP and controlled shipping if necessary.
- 3.2.4. Leading and validating the New Business Hold (NBH) execution for critical risk suppliers. Initiate the deviation request with higher management if NBH deviation is needed, confirming the deviation approval status.
- 3.2.5. Leading the resourcing plan if the existing supplier has repeatedly failed to exit from critical risk supplier list.
- 3.3. Operation function is responsible for:
  - 3.3.1. Providing inputs for suppliers risk scoring from operation perspective,
  - 3.3.2. Providing inputs for the suppliers who are not in vendor A but need to be included in the risk scoring matrix from operation perspective. Identifying and agree on the risk score suppliers list input by the rest of the functions
  - 3.3.3. Supply chain planning provides inputs to internal functions for critical risk suppliers CS1/2, NBH impact from supply chain perspective.
  - 3.3.4. Validating and confirming the effectiveness of the critical risk suppliers improvement.

### 4. Definitions / Terminology

- 4.1. **CS1 (CS2)** : Controlled Shipping Level 1: 100% Inspection at the supplier.  
Controlled Shipping Level 2: added inspection by a LF approved 3rd party
- 4.2. **NBH** : New Business Hold
- 4.3. **CIP** : Continuous Improvement Program
- 4.4. **NPD** : New Product Development
- 4.5. **Vendor A** :
  - 4.5.1. Annual Spending 100,000 USD or greater
  - 4.5.2. New or emerging supplier to Littelfuse where spend may not be 100,000 USD yet, but will be soon
  - 4.5.3. Critical supplier to Littelfuse even though the annual spend is below 100,000 USD
- 4.6. **SDE** : Supplier Development Engineering

### 5. Reference / Supporting Documents

- 5.1. CHI-SDE40-0003-A Critical risk suppliers Score Matrix Form
- 5.2. SQM: LF Supplier Quality Manual
- 5.3. CHI-SDE40-0004-A Critical Risk Supplier Entry Letter
- 5.4. CHI-SDE40-0005 Supplier Report Card – A
- 5.5. CHI-SDE20-0003-A Supplier Rating System

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### 5.6. CHI-SDE20-0002-A Supplier Risk Assessment Process

## 6. Procedure / Process

- 6.1. Figure 1 describes the process flow for managing Critical Risk Supplier
- 6.2. Figure 2 describes the process flow for Operation Escalation Process
- 6.3. Vendor A suppliers or any supplier who has been identified as a critical vendor by Operation Escalation process shall be evaluated through the supplier risk scoring matrix. The risk score matrix process shall be performed every 6 months.
- 6.4. Supplier Risk Score Matrix
  - 6.4.1. The Supplier risk score matrix and score criteria refers to “CHI-SDE40-003 Critical risk suppliers Score Matrix Form”
  - 6.4.2. The suppliers whose total score failed to meet cut-off score ( $\geq 4.0$ , or determined threshold) will be identified as Critical Risk Suppliers.
- 6.5. Operation Escalation process.
  - 6.5.1. Operation Escalation process applies for the supplier who is not in the critical risk supplier list but has impacted operations with a cost loss due to by poor quality and/or a high impact quality issue (Final customer impacted, recurrent incidents...).
  - 6.5.2. Operation will escalate the suppliers who belong to scope in 6.5.1 with evidence data; SDE confirms if supplier is already in scorecard system and if not will add the supplier to be ranked monthly.
  - 6.5.3. The supplier will be monitored in a monthly scorecard system, if the supplier has 3 months Ranked as ‘C’ during a 6 month period, then it will be escalated to Critical Risk Supplier.
- 6.6. Controlled Shipping for Production Products.

Based on the supplier performance cut off score, the SDE will determine if a Controlled Shipping is the correct tool to drive supplier improvement.

  - 6.6.1. When Controlled Shipping is applicable, LF SDE initiates the written documentation to notify a supplier of Controlled Shipping Status for production products. (Refer to Critical Risk Supplier Entry Letter)
  - 6.6.2. Controlled Shipping Level 1 (CS1) requires the supplier to implement additional off-line 100% inspection of product to contain specific failures at the supplier location by supplier employees.
    - 6.6.2.1. Containment actions must verify that product requirements are met. These actions must be approved by the responsible Littelfuse SDE.
    - 6.6.2.2. The supplier is required to absorb all costs related to these containment actions and provide the inspection status report results to LF on a daily basis.

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- 6.6.2.3. Parts, material and containers are to be marked, as agreed with LF, to identify individual parts certification by CS1.
- 6.6.3. CS1 exit criteria requirements. All items below must be completed:
  - 6.6.3.1. Corrective and Preventative Actions must have been implemented and their effectiveness been verified.
  - 6.6.3.2. At least 30 days or 5 successive lots of defect-free product, whichever is greater.
  - 6.6.3.3. All CIP actions verified and approved through a LF SDE onsite review or an audit (QMS, Category Specific, or other) as necessary.
- 6.6.4. Controlled Shipping Level 2 (CS2) is initiated if the CS1 containment implemented by the supplier fails to contain non-conforming products within their own facility.
  - 6.6.4.1. The CS2 includes all of CS1, with an added 100% inspection by a LF approved third party. Third party is selected by the supplier and approved by LF, with all expenses covered by the Supplier.
  - 6.6.4.2. The CS2 requires inspecting all suspect parts in a separate area from normal production process and CS1 containment. LF SDE and the supplier must agree on the documentation required, content and duration of containment. Items to be inspected can include but are not limited to:
    - a) PFMEA
    - b) Historic failure modes during launch
    - c) Potential high-impact customer issues
  - 6.6.4.3. Parts, material and containers shall be identified as previously agreed with LF SDE, CS1 and CS2 identifications must be two different witness marks.
- 6.6.5. CS2 exit criteria:
  - 6.6.5.1. At least 30 days or 5 consecutive lots of defect-free material, whichever is greater.
- 6.6.6. After supplier exits from CS2, CS1 will need to continue until the CS1 exit criteria is achieved.
- 6.7. New Business Hold.
  - 6.7.1. Suppliers on NBH will not be eligible to quote or engage in new business until they have been released by SDE and procurement. Suppliers placed on NBH will be notified in writing by LF Procurement.
  - 6.7.2. New Business Hold Level 1 (NBH1), is initiated when supplier enters Controlled shipping level 1 and does not meet cut off score. NBH1 allows for limited New Business to the supplier, the deviation needs multi-level reviews throughout Procurement and SDE to identify the extenuating circumstances. Procurement creates letter/Email with limited category/models and deviation

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duration then obtains approvals from Global Procurement Director and SDE Director.

- 6.7.3. NBH level 1 Exit Criteria when all items below are accomplished:
    - 6.7.3.1. All CS 1 containment and CIP activities have been verified for effectiveness after a LF SDE onsite review or an audit (QMS, Category Specific, or other) as necessary.
    - 6.7.3.2. The supplier exits from Critical Risk Supplier list in next risk scoring evaluation as applicable.
  - 6.7.4. New Business Hold Level 2 (NBH2), is initiated if a supplier in NBH1 fails to exit from Critical Risk Supplier List cut off score in next risk scoring evaluation. NBH2 requires no New Business released to the supplier; any deviation must obtain approval by LF Operation Vice President.
  - 6.7.5. NBH level 2 Exit Criteria is the as same as 6.5.3 NBH level 1 Exit Criteria.
  - 6.7.6. If a supplier in NBH2 fails to exit from Critical Risk Supplier cut off score in next risk scoring evaluation, the NBH2 will be maintained and a supplier phase-out plan is initiated.
- 6.8. Supplier Continuous Improvement Program
- 6.8.1. Supplier Continuous Improvement Program (CIP) is initiated by LF SDE. The CIP supplier selection criteria includes:
    - 6.8.1.1. Suppliers in Critical Risk Supplier list are based on a risk score evaluation.
    - 6.8.1.2. Suppliers that are not in Critical Risk Supplier list but highly concerned by LF Operation, including but not limited to chronic issue causing yield lose or Cost of Poor Quality to LF operation, potential risks to end customers and safety risks.
  - 6.8.2. For the suppliers who are in Critical Risk Supplier list and based on a priority given by the score:
    - 6.8.2.1. SDE discusses with Operation functions the supply risk evaluation and impact of implementation of Control Shipping and NBH from supply perspective.
    - 6.8.2.2. SDE informs the Critical risk supplier in written form their Critical Risk Performance Status and CS1/2 requirements.
    - 6.8.2.3. SDE leads kick off meeting with management of the critical risk suppliers. The supplier needs to work out the CS1/2 implementation plan and get approved by SDE in 2 weeks. The supplier should nominate a CIP program team including members from quality, engineering, production to LF SDE in 2 weeks.
  - 6.8.3. For the suppliers who are not in Critical Risk Supplier list but identified as critical risk suppliers that need to conduct CIP program:

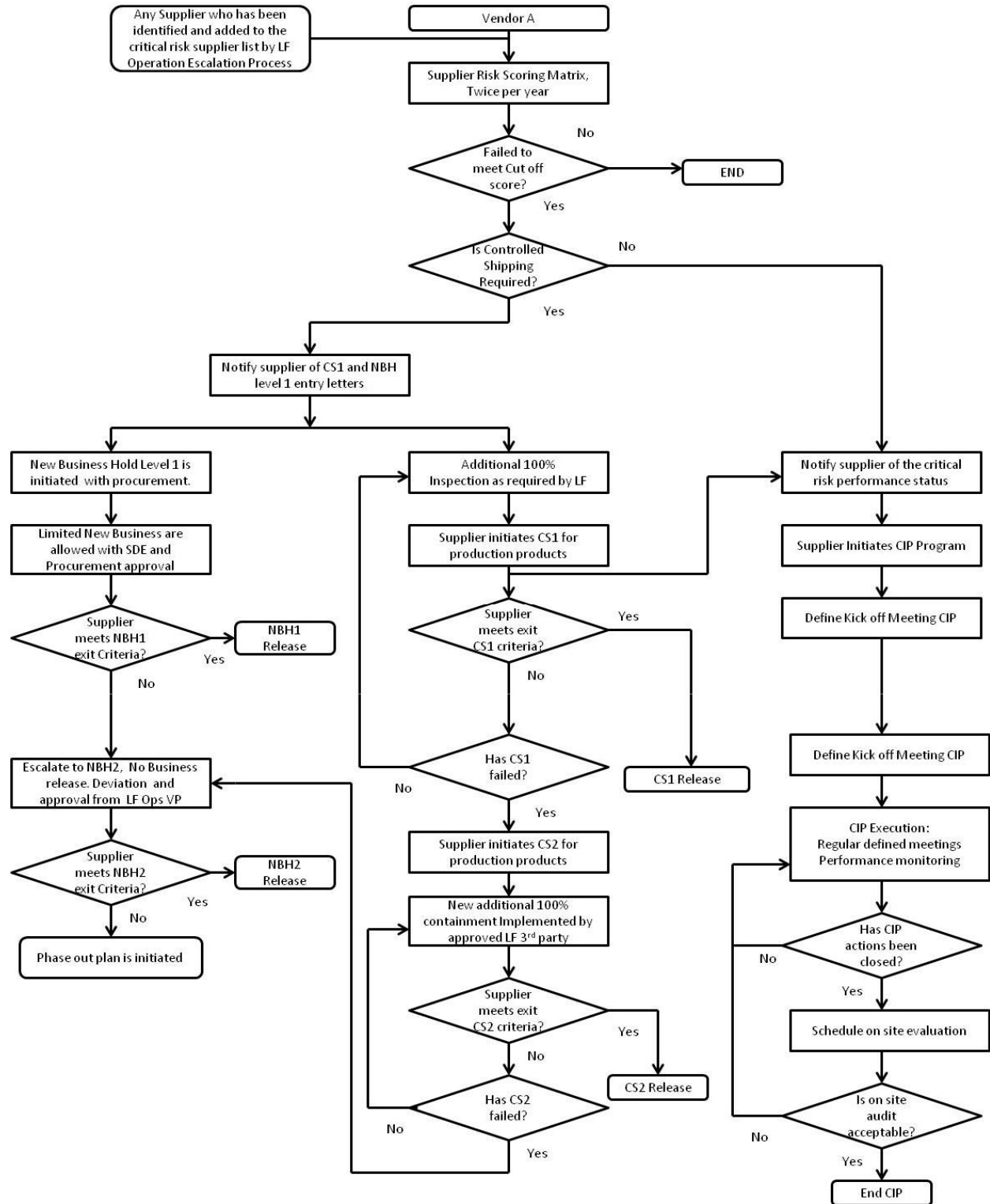
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- 6.8.3.1. SDE lead CIP kick off meeting with management of the suppliers.  
The supplier should nominate a CIP program team at least from quality, engineering, production to LF SDE in 2 weeks
- 6.8.4. SDE will lead the kick off meeting for the Continuous Improvement Program with the Littelfuse and supplier CIP program team.
- 6.8.5. SDE will lead regular review meetings, supplier performance monitoring, schedule on-site review or an audit (QMS, Category Specific, or other) with the CIP suppliers, as necessary. The supplier CIP team needs to provide weekly program updates to LF SDE.
- 6.8.6. LF Operation will input and validate the effectiveness of the Critical risk suppliers CIP program.
- 6.8.7. CIP exit criteria is met when all items below are completed:
  - 6.8.7.1. The defined program target is achieved with support evidence
  - 6.8.7.2. Supplier exit from Critical Risk Supplier in next evaluation
  - 6.8.7.3. All CIP program actions verified for effectiveness through a LF SDE onsite review or audit (QMS, Category Specific, or other) as necessary.
- 6.8.8. SDE leads CIP program closing meeting with LF internal stakeholders and the management of the suppliers to review the CIP results and performance to validate the exit criteria is achieved.
- 6.8.9. If a supplier in CIP fails to meet the exit criteria, the CIP will be maintained and additional actions with the supplier (such as NBH) will be considered as reviewed with LF Operation and Procurement teams.

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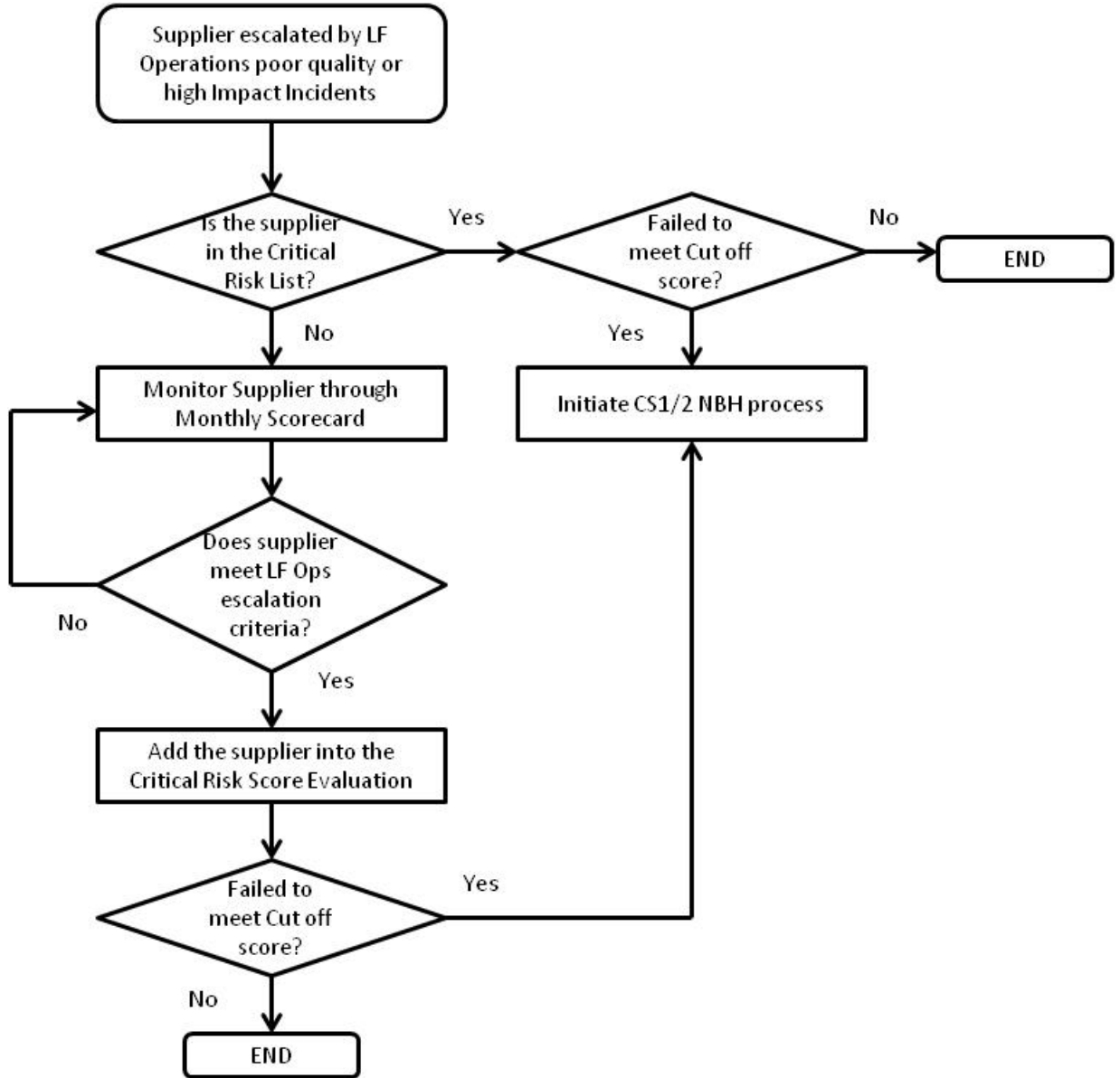
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Figure 1: Critical risk suppliers Escalation and Improvement Process Flow



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Figure 2: Operation Escalation Process Flow



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### 7. Records / Attachment

- 7.1. CHI-SDE40-0003-A Critical risk suppliers Score Matrix Form
- 7.2. CHI-SDE40-0004-A Critical Risk Supplier Entry Letter

### 8. Changes / Document History

Revision	Originator	Changes / Description	Date
A	Sam Peng	Initial Release	May 20, 2015
B	Alfredo Heredia	Revised main content and wording. CS1 and CS2 are used as a supplier management tool	Dec, 2016
C	Alfredo Heredia	- Cleaned the Header of each page for proper display in Global DMS (Eliminate double header and "Reference Only" note) - Added Reference to the "Supplier Risk Assessment Process"	Mar 6, 2017

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