NISSAN
MOTOR CORPORATION

4.1 Product and Process Design Review

Purpose:

In order to assure the quality requirements from Nissan, suppliers and Nissan need to clarify potential quality problems and solve them in design or development stage. Design review is held to prevent all the possible quality problems before their occurrence.
In addition to the supplier internal design review, Nissan requires to attend on joint design review with Nissan based on the assessment level.

Notes:

- Design review implementation timing is required to be clarified in supplier master schedule or its substitute documents.
- Full Process DR is applied to the system that is assessed as level H as a joint design review with Nissan.
- Quick DR is applied to the system that is assessed as level M as a joint design review with Nissan.

Full Process DR

Activity Purpose:
Full Process DR is applied to systems / parts having high newness such as first adoption in the world or first adoption in Nissan (are equivalent to assessment level H) as proactive prevention activities against potential quality problems.
Design and production engineers in suppliers and Nissan jointly detect potential failure modes and decide countermeasure against them by using standardized tools such as Design Potential FMEA / FTA.
Important characteristics that must be controlled in mass-production process and control plans for these characteristics are clarified by using the standardized tools that Nissan requires.
Results are reviewed by expert reviewers of Nissan in order to study any risk to quality.

Copyright © NISSAN

NISSAN
MOTOR CORPORATION

Activity Content:

Phase	1	2	3	4	5
Activity Contents		● Share the basic structure of the target system by using System Structure Diagram and break down the functionality requirement of the system to each component element by using Function Block Diagram. ● Detect potential failure modes and analyze their causes and effects and finally decide countermeasures against them by using design FMEA. FTA shall be applied to significant system fault as necessary to clarify all the causes of the fault and decide countermeasures against them. ● The candidates of the special characteristics and key features that need to be controlled in mass-production process are selected based on the results of FMEA / FTA. These characteristics and features are called as the “important characteristics”. ● Suppliers participate in the joint design review at the request of Nissan in order to leverage the expertise of reviewers. The results of study (FMEA / FTA) are revised as necessary.	● Consider countermeasures against extracted quality problems through prototype confirmation or experiment. ● Identify important characteristics and establish the control plan in mass-production process. ● Suppliers participate in the joint design review at the request of Nissan and revise related actions and documents as necessary based on instruction from reviewers.	● Consider countermeasures against extracted quality problems through mass-production parts confirmation or experiment. ● Confirm the established control plan in mass-production process regarding the important characteristics. ● Suppliers participate in the joint design review at the request of Nissan and revise the related actions and documents as necessary based on instruction from reviewers. ● At the request of Nissan suppliers hold process check for the mass-production process. This process check will involve the reviewers.	
Output Documents	● System Structure Diagram ● Function Block Diagram ● Design Potential FMEA ● Fault Tree Analysis (FTA) ● QA table A and B				

Printed versions of this document are not controlled by the version management system. Copyright © NISSAN

NISSAN
MOTOR CORPORATION

Quick DR

Activity Purpose:
Engineers of suppliers and Nissan jointly conduct proactive prevention against defects and customer dissatisfaction issues swiftly and efficiently by focusing on changes in design (assessment level M). Defects and customer dissatisfaction issues caused by changing points are expected to be found through intensive discussion among design, test and production engineers of suppliers and Nissan. Countermeasures for these issues are filled in the DRBFM worksheet from the viewpoints of design, test and manufacturing.
Finally, the results are reviewed by expert reviewers of Nissan in order to study any risk to quality.

Activity Content:

Phase	1	2	3	4	5
Activity Content		● In the pre-preparation step, summarize changing points between base design and new design in the Changes List form. Based on the Changes List, consider concerns related to the changing points and summarize the results in the preparation section of the DRBFM worksheet. The preparation section of the DRBFM worksheet starts with the column “part name” and ends with column “countermeasure to eliminate the concerns”. ● In the preparation step, design, test and production engineers of suppliers and Nissan gather to have an intensive discussion focusing on results of the pre-preparation. Participants of the discussion must focus on changing points to find concerns related to the changing points efficiently. Countermeasures for the identified concerns are filled in the DRBFM worksheet separated by responsibility: design, test and manufacturing.	● If newness level of a design change in phase 3, 4 or 5 is same level with assessment level M, Quick DR is conducted focusing on the changes in design. Basic procedure is same as described for phase 2.		

Copyright © NISSAN

		● In the review step, expert reviewers review the results of the preparation and determine necessary actions. The necessary actions and any actions added by the reviewer are filled in the review section of the DRBFM worksheet. The responsible person and due date must be clarified for each action. ● In the action step, action results must be filled in the DRBFM worksheet. The worksheet is submitted to Nissan after completion of all actions. Responsible person in Nissan judges completion of the Quick DR.	
Output Documents	● Changes List ● DRBFM worksheet		

Copyright © NISSAN