



February 20, 2018

To: All

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Tokyo Stock Exchange)  
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Special Investigation Committee Interim Report (2)  
Relating to Non-Conforming Products at MMC Subsidiaries

Mitsubishi Materials Corporation (“MMC”) sincerely apologizes for the difficulties that we have caused to all concerned parties, including our customers and shareholders, in connection with Mitsubishi Cable Industries, Ltd.’s (“MCI”), Mitsubishi Shindoh Co., Ltd.’s (“MSC”), Mitsubishi Aluminum Co., Ltd.’s (“MAC”), Tachibana Metal Mfg Co., Ltd.’s (“TKC”), and Diamet Corporation’s (“DM”) delivery of products that deviated from customer or internal specifications due to misconduct, including the rewriting of data. MCI, MSC, MAC, TKC, and DM are consolidated subsidiaries of MMC.

We would like to report that MMC’s Board of Directors received an interim report today (Attachment 1) from the Special Investigation Committee relating to the MCI’s final report. The Special Investigation Committee plans to submit its final report after March 2018.

In addition, we would like to report that MCI published “Preventive Measures for the Non-Conforming Product Shipment Issue at Minoshima Works” (Attachment 2) and “Change of a Director” (Attachment 3) today. We will continue to provide MCI with the leadership and supervision so that MCI will promptly implement the preventive measures.

END

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February 20, 2018  
Special Investigation Committee  
Chairperson Mariko Tokuno

## Interim Report (2)

### 1. Background

Mitsubishi Materials Corporation (“**MMC**”) discovered that with regard to certain products produced and sold by MMC’s subsidiaries in the past, including Mitsubishi Shindoh Co., Ltd. (“**MSC**”) and Mitsubishi Cable Industries, Ltd. (“**MCI**”), there were those that were shipped while they deviated from customer or internal specifications (“**Non-Conforming Products**”) due to the rewriting of inspection records data and other misconduct (“**Misconduct**”) (“this Matter”). Given such circumstances, based on a resolution by its Board of Directors on December 1, 2017, MMC commissioned a special investigation committee (“**Committee**”), the majority of which consists of outside directors and an outside expert, to conduct the investigation of this Matter and other related tasks.

The Committee received an investigation report dated December 27, 2017 from the MSC Investigation Committee, an interim investigation report dated December 27, 2017 from the MCI Investigation Committee and a report titled “Restructuring Measures of the Governance Framework for Quality Control in the MMC Group” from MMC on December 27, 2017, and therefore submitted an interim report dated December 28, 2017 (the “**Interim Report**”) to MMC’s Board of Directors.

Since the Committee received an investigation report dated February 19, 2018 from the MCI Investigation Committee (Attachment), the Committee hereby submits an interim report (2) dated February 20, 2018 with its opinions (the “**Interim Report (2)**”) to MMC’s Board of Directors.

### 2. Status of Activities

#### 1) Status of Committee Activities After Submitting the Interim Report

January 16 (Tuesday)	12:59 PM to 2:51 PM	6th Committee meeting
January 29 (Monday)	1:30 PM to 5:35 PM	7th Committee meeting
February 6 (Tuesday)	9:57 AM to 11:55 AM	8th Committee meeting

(Note) Aside from the activities listed above, the following on-site visits were conducted.

Mitsubishi Aluminum Co., Ltd., Fuji Plant (January 9: Tokuno (Chairperson), Watanabe, Takenaka and Ono (Committee members))

### 3. Status of Investigation of the Issues at MCI

In order to efficiently and reasonably proceed with the investigation relating to the issues of MCI, the Committee conducted the investigation by positioning the MCI Investigation

Committee, which was established by MCI on November 13, 2017, under the Committee's supervision as of December 1. The MCI Investigation Committee has entrusted outside counsel with its investigation.

1) Outline of the MCI Investigation Committee

① Date of establishment

November 13, 2017

② Committee members

Chairperson	Koji Sakamoto	Director & Managing Executive Officer of MCI
Member	Hirokazu Kuzushita	Corporate Auditor of MCI
Member	Takashi Shibuya	Attorney (Nishimura & Asahi)

③ Outside counsel

Nishimura & Asahi

2) Details of the Investigation (entrusted to outside counsel)

① Investigate the quality control system for seal products and other products at Minoshima Works

② Investigate the status of measures taken by MCI after the quality audit conducted by MMC on MCI in December 2016

③ Analyze the root causes and background information from the facts that were discovered as a result of the investigation of the facts described in ① and ② above

④ Recommend preventive measures based on the analysis described in ③ above

3) Investigation Report

The Committee received an investigation report dated February 19 from the MCI Investigation Committee ("**MCI's Investigation Report**") that mainly contains the facts relating to the Misconduct found on or prior to February 16 (Attachment).

4. Current Opinions of the Committee on MCI's Investigation Report

The following six points have been indicated in MCI's Investigation Report as root causes of the Misconduct at MCI, and the Committee is of the same opinion.

(1) Insufficiency of resource allocation for the seal business (Minoshima Works)

(2) Insufficiency of the mechanism, such as DR, for the production and quality assurance departments to influence the process of product development and order intake

(3) Insufficiency of resource allocation for the quality assurance departments

(4) Strain on the quality assurance departments from other departments due to the chain of pressure

(5) Conceited mindset of being able to control the quality

(6) Low risk sensitivity in quality issues

Based on these indications, it must be said that internal governance such as the organizational structure, management resource allocation and quality assurance did not sufficiently function at MCI's seal business. It is considered that, as a result, the shipment of Non-Conforming Products has continued over years to date, without the structural problems that came to exist within MCI due to various factors such as historical backgrounds being recognized or improved. In implementing preventive measures, in addition to the technical measures such as automation of inspections, it would be necessary to promptly implement various other measures, including the reform of organizational structure through the initiatives to, among others, review the process of product development and order intake, strengthen the quality assurance departments, and provide employees with education for the purpose of improved compliance awareness and awareness reform related to quality issues.

In addition, the Misconduct was first recognized internally at MCI at the beginning of 2017, triggered by MMC's audit, and was reported to a part of the management members, including the former President. However, regarding the fact that the former President tried to reach a "soft landing" and continued shipping the Non-Conforming Products without reporting to the parent company, it seems undeniable that there was insufficiency in his risk sensitivity in quality issues, which is essential for a management member in the manufacturing industry. The Committee believes that the responsibility for this judgement failure is substantially grave and that it is necessary to appropriately discipline him.

From now on, MCI should take seriously the results of the investigation that are in MCI's Investigation Report, and immediately implement preventive measures to prevent similar issues from recurring. In addition, MMC, as the parent company, should also have MCI immediately implement the appropriate preventive measures.

## 5. Future Plans (Additional Investigations)

The ISO 9001 certification of Mitsubishi Aluminum Co., Ltd. ("MAC"), a subsidiary of MMC, was temporarily suspended by the Japanese Standards Association on December 25, 2017 for reasons, including that they could not confirm the effectiveness of the remedial measures. Further, MAC's JIS certifications were revoked by the Japan Quality Assurance Organization on January 12, 2018 for the reason that testing of certain products was not conducted in accordance with the procedures set in the JIS standards.

Given such circumstances, MMC conducted special audit by the Internal Audit Department and others, and it was discovered that MAC had delivered Non-Conforming Products and in addition Tachibana Metal Mfg Co., Ltd. ("TKC"), MAC's subsidiary, had delivered Non-Conforming Products.

It was also discovered at Diamet Corporation ("DMC"), MMC's another subsidiary, through an external hotline for employees that DMC had delivered Non-Conforming Products.

These circumstances led the Committee to determine that investigation was necessary with

regard to the MAC matter (including the issues related to the incidents occurred at its subsidiary TKC) and the DMC matter mentioned above in light of the purposes of the Committee, and decided to additionally entrust Nishimura & Asahi with the tasks of investigating the facts, determining the root causes and formulating preventive measures.

END

Attachment

February 19, 2018

To: Mitsubishi Materials Corporation  
Special Investigation Committee

Mitsubishi Cable Industries, Ltd.  
Koji Sakamoto  
Investigation Committee Chairperson

(Report) Submission of Investigation Report

We had requested that Nishimura & Asahi investigate and review the actual state of the framework for quality control of seal products and other products at Mitsubishi Cable Industries, Ltd. (MCI)'s Minoshima Works, among other things. We received an investigation report from Nishimura & Asahi dated today.

We are therefore submitting the attached report as a report by the Investigation Committee of MCI to MCI's Board of Directors and MMC's Special Investigation Committee.

END

To: Investigation Committee of Mitsubishi Cable Industries, Ltd.

February 19, 2018

### **Investigation Report**

(Concerning the actual state of the framework for quality control  
of seal products and other products at Minoshima Works)

	Nishimura & Asahi
Attorney	Takashi Shibuya
Attorney	Ryutaro Nakayama
Attorney	Hidetoshi Matsumura
Attorney	Jun Katsube
Attorney	Tomoyuki Numata
Attorney	Yusuke Suzuki
Attorney	Toshiki Kitazumi
Attorney	Eisuke Kunimoto
Attorney	Asaki Nishida
Attorney	Tomoyuki Kawanishi

This is a report on the investigation (“**Investigation**”) Nishimura & Asahi is currently conducting that was commissioned by the Investigation Committee (“**MCI Investigation Committee**”) established by Mitsubishi Cable Industries, Ltd. (“**MCI**”).

This report summarizes the results of the investigation, analysis, etc. that were conducted as much as possible and believed to be appropriate within the given time and conditions, and there is a possibility that the conclusions or other aspects will change if new facts or other details are discovered. Please also be aware that this report does not guarantee any judgement of the courts or decisions of other relevant regulators, etc.

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## **Section 1          Circumstances leading to the Investigation and the Purpose of the Investigation**

A quality audit performed in December 2016 by Mitsubishi Materials Corporation (“MMC”), parent company of MCI, led to the discovery in February 2017 of the fact that certain products that had been manufactured and sold in the past that deviated from Specifications (defined below) (hereinafter, deviations from Specifications are referred to as “**Specification Non-Conformances**,” and products with Specification Non-Conformances are referred to as “**Non-Conforming Products**”) had been shipped due to misconduct (“**Misconduct**”) within the Inspection Section (“**Inspection Section**”)<sup>1</sup> of the Quality Assurance Department (“**Quality Assurance Department**”) at MCI’s Minoshima Works (“**Minoshima Works**”). This Misconduct included rewriting of measurements for dimensions and material properties of seal products to fall within the range of customer specifications (“**Customer Specifications**”) or internal specifications (hereinafter “**Internal Specifications**” and together with Customer Specifications, collectively “**Specifications**”). The Misconduct was reported to MCI’s management by the Quality Assurance Department in March 2017. In May 2017, MCI launched the quality improvement project (“**Quality Improvement Project**”) as an internal project team and began, among other things, confirming the underlying facts, identifying Non-Conforming Products and considering ways to ensure safety.

In light of the seriousness of this situation, MCI launched the MCI Investigation Committee on November 13, 2017 with the goal of investigating the facts concerning the Misconduct and other issues and identifying the root causes and background. On November 23, MCI made a public announcement concerning the Misconduct.

The MCI Investigation Committee determined that it would be necessary to perform a thorough investigation from an objective and neutral perspective, so it requested that Nishimura & Asahi conduct an investigation and review with the following objectives:

- ① Investigate the actual state of the framework for quality control of seal products and other products at Minoshima Works;
- ② Investigate the status of MCI’s response after MMC performed the quality audit of MCI in December 2016;
- ③ Analyze the root causes and background circumstances based on the results of the fact-finding review of ① and ② above; and
- ④ Propose measures to prevent recurrences based on the analysis of ③ above.

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<sup>1</sup> At the time of the Misconduct, within MCI’s organizational structure, the Quality Assurance Department belonged to Minoshima Works. However, on February 1, 2018, the Quality Assurance Division was newly established as an organization that directly reports to the President. At the same time, the Seal Products Quality Assurance Department was established under the Quality Assurance Division, to which the functions of the former Quality Assurance Department of Minoshima Works were transferred.

## **Section 2 Progress on the Investigation**

### **1 Overview of the Investigation and the investigation framework**

Based on the circumstances in Section 1 above, Nishimura & Asahi performed the investigations described in ① through ③ below.

- ① A detailed review of relevant materials;
- ② A digital forensic investigation of email data, etc. possessed by relevant parties; and
- ③ Interviews of relevant parties.

The Investigation was led by attorney Takashi Shibuya and nine others attorneys of Nishimura Asahi, who have no interests in MCI. Additionally, an expert forensic vendor was engaged to assist with the Investigation under the direction and supervision of Nishimura & Asahi.

Nishimura & Asahi commissioned such forensic vendor, to the extent necessary and possible, to collect shared files saved on MCI's file servers as well as email data on MCI's email servers and individual PCs and mobile phones issued to the relevant parties by MCI. The forensic vendor was also commissioned to narrow down the data and conduct a first-level data review under Nishimura & Asahi's direction.

Additionally, in the process of investigating the misconduct relating to seal products, it was discovered that there was a possibility that misconduct similar to what was observed in seal products also existed with respect to fine rectangular magnet wire<sup>2</sup> (“MEXCEL”) also manufactured at Minoshima Works. As a result, in addition to performing the review of relevant materials in 2 below and conducting the interviews with relevant parties in 4 below with respect to MEXCEL, the review of relevant materials in 2 below and interviews with relevant parties in 4 below were also performed with respect to electromagnetic wave absorbers that are likewise manufactured at Minoshima Works.

### **2 Detailed Review of relevant materials**

Nishimura & Asahi collected the materials that currently exist at MCI relating to the actual state of the framework for quality control of seal products and other products at Minoshima Works (policies and procedures relating to quality control, inspection records, and materials from quality-related committees, etc.) and performed a detailed review and verification of their content.

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<sup>2</sup> Products that are magnet wires coated with an ultra-thin insulating film, used primarily in induction coils for electronic equipment. At MCI, the product name is “MEXCEL.”

### **3 The status of conducting digital forensic investigation**

As stated in 1 above, Nishimura & Asahi preserved, to the extent necessary and possible, the data from the shared files saved on MCI's file servers and preserved email data from individual PCs and mobile phones issued to the relevant parties by MCI and from MCI's email servers and other email data from a total of 41 MCI directors and employees who are or have previously been involved in the seal product business at Minoshima Works.

Due to the time constraints on the Investigation, it was necessary to apply reasonable limits to the data that was preserved, so Nishimura & Asahi decided to extract data using keyword searches setting the target period as December 1, 2016 to November 30, 2017. With respect to the data for which extraction was completed by the Reference Date stated in 5 below, the forensic vendor mentioned in Section 1 above conducted the first-level data review, and Nishimura & Asahi conducted the second-level data review, and this report is based on these materials.

### **4 The status of conducting interviews**

In order to make clear the actual state of the framework for quality control of seal products and other products at Minoshima Works and the status of response after December 2016 and other issues, Nishimura & Asahi conducted interviews with a total of 55 current and former directors and employees of MCI up until the Reference Date stated in 5 below. We note that some interviewees were interviewed multiple times.

### **5 The Reference Date for the Investigation**

The Investigation began on November 13, 2017. The reference date for this report is February 16, 2018 ("**Reference Date**"), and the description below summarizes the facts, results of verification, etc. that have become known as of this Reference Date.

## **Section 3 Overview of Minoshima Works**

### **1 Details on the business and products handled by Minoshima Works**

Minoshima Works started operations in 1943 as a factory manufacturing wires for aircrafts. Since beginning to manufacture O-rings for aircrafts for the then Defense Agency of Japan (\*Translator's note: currently reorganized as the Ministry of Defense) in 1958, it has been manufacturing seal products for a variety of fields, including aerospace, automotive parts, hydraulics, pneumatics, and semiconductors, as a production site for seal products. Currently, in addition to seal products, it also manufactures products such as MEXCEL and electromagnetic wave absorbers.

Seals refer collectively to parts and materials that prevent fluids or gases from leaking outside of machines or equipment, or contamination of their interior by rainwater, dust and other foreign matters, and they play an important role in maintaining the performance of machinery. Rubber, metal and resin are used as the raw materials for seals, and there are also seal products manufactured with a combination of these materials. O-rings are the seals currently being used in the greatest number, and they have various raw materials and sizes depending on their applications.

## 2 The organizational structure and division of operations at Minoshima Works

Within MCI's organizational structure, Minoshima Works is under the High Performance Products (Seal Products) Division, and it manufactures seal products, electromagnetic wave absorbers, etc.<sup>3</sup> The Administration Department, Engineering Development Department ("**Engineering Development Department**"), Production Department ("**Production Department**") and Quality Assurance Department were under Minoshima Works<sup>4</sup>, and the main operations carried out by the Engineering Development Department, Production Department and Quality Assurance Department, which take part in the development, manufacturing and inspection of seal products, are summarized below.

The main operations of the Engineering Development Department are production engineering, equipment management and environment management of the products under the responsibility of Minoshima Works, and it is divided into Section I,<sup>5</sup> Section II,<sup>6</sup> and Section III.<sup>7</sup>

The main operations of the Production Department are matters relating to production engineering and manufacturing of products under the responsibility of Minoshima Works, and it is divided into Production Section I,<sup>8</sup> Production Section II,<sup>9</sup> Production Section III<sup>10</sup> and the

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<sup>3</sup> MEXCEL is manufactured at Minoshima Works, but within MCI's organizational structure, its development and production are under the responsibility of the MEXCEL Business Department ("**MEXCEL Business Department**") of the High Performance Products (Seal Products) Division, and it is not a business that is under Minoshima Works. However, the inspection operations for MEXCEL have been outsourced to the Inspection Section.

<sup>4</sup> For the reorganization involving the Quality Assurance Department effective as of February 1, 2018, see footnote 1 above.

<sup>5</sup> Section I of the Engineering Development Department is in charge of development relating to material compounds for rubber products and technology for substances subject to security export controls, etc.

<sup>6</sup> Section II of the Engineering Development Department is in charge of matters relating to development, design and functional evaluation testing for rubber products and development of electromagnetic wave absorbers.

<sup>7</sup> Section III of the Engineering Development Department is in charge of matters relating to development and design of resin and metal products and development and design of composite products for automobiles.

<sup>8</sup> Production Section I of the Production Department is in charge of matters relating to manufacturing and the design and management of molds for products having rubber as their main material at Minoshima Works.

<sup>9</sup> Production Section II of the Production Department is in charge of matters relating to manufacturing a portion of the products having rubber as their main material at Minoshima Works.

<sup>10</sup> Production Section III of the Production Department is in charge of matters relating to manufacturing products for which the main materials are resin and metal at Minoshima Works.

Production Engineering Section (“**Production Engineering Section**”).<sup>11</sup>

The main operations of the Quality Assurance Department were matters relating to quality assurance and the technical review of substances, etc. subject to security export controls of the products under the responsibility of the High Performance Products (Seal Products) Division as well as inspecting the products under the responsibility of Minoshima Works. Under the Quality Assurance Department was the Inspection Section, which was the organizational unit in charge of inspecting the products under the responsibility of Minoshima Works, and the Quality Assurance Section (“**Quality Assurance Section**”), which was the organizational unit in charge of quality assurance of the products under the responsibility of Minoshima Works. The Inspection Section was divided into Inspection Site I (“**Inspection Site I**”)<sup>12</sup> and Inspection Site II (“**Inspection Site II**”).<sup>13</sup>

### **3 Operational flow from receipt of order to shipment of seal products**

#### **(1) Receipt of order and design**

##### **A Receipt of order and design for new product**

When MCI’s Sales Section (“**Sales Section**”) receives an inquiry from a customer, they send a request to the Production Department to prepare a written quotation. If it is a new product that the Production Department has never produced before and they cannot determine whether they can produce it even upon comparing it to similar products that they have produced in the past, they send a request for review to the Engineering Development Department. If the Engineering Development Department determines that the product can be produced, and the customer formally requests that a written quotation document be prepared, the Sales Section negotiates with the customer based on the quotation prepared by the Engineering Development Department, and a determination to accept the order is made.

After a formal determination is made to accept an order, the customer sends an engineering order to MCI. The Engineering Development Department then holds discussions with the customer regarding the tolerances and the properties of the materials stated in the engineering order, and the specifications are revised. The specifications agreed upon with the customer are recorded, including through addendums to the engineering order, meeting minutes, etc.

Upon completing the revisions to the specifications, the Engineering Development Department designs a mold for the new product and creates a design for internal use, after which a prototype for the new product is created, and the feasibility of mass production is assessed.

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<sup>11</sup> The Production Engineering Section is in charge of matters relating to production engineering, equipment management and environment management for the products under the responsibility of Minoshima Works.

<sup>12</sup> Inspection Site I was primarily in charge of matters relating to inspection of raw materials, inspection of properties of finished products and partially complete products and inspection of finished products having rubber as their main material and MEXCEL.

<sup>13</sup> Inspection Site II was primarily in charge of matters relating to inspection of outsourced products and the inspection of finished product having resin and metal as their main materials, semiconductor-related products having rubber as their main material and electromagnetic wave absorbers.

From the perspective of product development, the Engineering Development Department categorized products into three categories (A, B, and C). Category A included products that can be determined not to require development due to similar products having been produced in the past, which can be designed solely by the person responsible for design in the Engineering Development Department and/or an Assistant Manager (corresponding to a Section Manager at MCI). Category B included products requiring advance coordination with the customer or relevant departments, such as pre-contract review of prototypes, etc. Category C included products involving development matters such as a new material, new design, new production method or new equipment in connection with a new inquiry, design change or process change, products designated as “critical parts” in the customer specifications and previously produced products for which the monetary amount of the order is large (monthly sales of five million yen or more) even if the product is categorized as A or B. For products in Category C, Design Review (“**DR**”) is performed for key areas starting from the prototype stage. Furthermore, in order to assess whether mass production is possible, designs were examined by the relevant departments, such as the Quality Assurance Department and the Production Engineering Section. Careful coordination was needed among the departments, such that mass production was initiated only after having finally passed through overall DR, etc.

#### **B Receipt of order and design for similar product**

Upon reviewing the inquiry obtained by the Sales Section, if the ordered product or a similar product has been produced in the past, the Production Department creates a written quotation without issuing a request to the Engineering Development Department. After a formal determination is made to accept the order, mass production is initiated using the mold for the previously produced product or similar product without creating a prototype.

### **(2) Production process**

#### **A Determination of the production schedule**

Based on the order information entered by the Sales Section, the Production Administration Section of the Administration Department at Minoshima Works (“**Production Administration Section**”), upon considering the delivery deadlines for each product, determines which products to produce by when, formulates a production schedule, and prepares a production planning chart. After that, upon considering the raw material inventory status, etc., the necessary raw materials are purchased and sent to the Production Department for the compounding process.

#### **B Production**

The following explains the flow of the production process for rubber seal products.

First, in the compounding process, raw rubber and chemicals are weighed, and then in the mixing process, the weighed raw rubber and chemicals are put into a mixing machine and mixed. In

the pre-forming process, the rubber mass that went through the mixing process (“**compound**”) is then processed into shapes that make them easier to put into molds such as rings, chips, etc. In the press process, the pre-formed unvulcanized rubber<sup>14</sup> is then put into molds, and the raw rubber and chemicals are made to react by applying heat and pressure, and they are formed into products that have properties such as rubber elasticity, etc. After that, parts other than the product, i.e., burrs are removed in the finishing process, resulting in the finished product. Also, depending on the product, sometimes vulcanization is not completed solely through the press process, so a second vulcanization process is performed after the finishing process for such products, which completes the vulcanization.

### (3) **Inspection process and shipment**

The following explains the inspection process and the flow until shipment for rubber seal products.

#### **A Types of inspection and the flow until shipment**

For products produced at Minoshima Works, interim inspections are performed for products for which the entire production process has not been completed (“**Partially Completed Products**”), and finished product inspections are performed for finished products for which the entire production process has been completed.

Inspection orders,<sup>15</sup> which are prepared for each product, specify which inspections are to be performed for each product, and which items are to be measured in the inspections.

As mentioned in 4 below, products determined to have failing inspection results (hereinafter called “**Failing Products**,” products determined to have passing inspection results are called “**Passing Products**”) are either discarded, inspections are performed again after they are repaired, or an application for re-review is submitted.

Products that pass finished product inspections are placed into inventory, and then shipped by the Production Administration Section in accordance with the relevant delivery deadlines.

#### **B Explanation about details of inspection**

The inspections relating to the Misconduct include (A) (i) batch inspections and (ii) quality control testing that are part of the interim inspections for Partially Completed Products, as well as

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<sup>14</sup> Vulcanization is the operation of mixing sulfur into raw rubber and heating it up, to produce rubber with elasticity that corresponds to its use.

<sup>15</sup> The staff of the Inspection Section creates inspection orders based on designs, etc. created by the Engineering Development Department.

(B) (i) lot inspections, (ii) quality control testing and (iii) dimension inspections that are part of the finished product inspections for finished products. Batch inspections, lot inspections and quality control testing are all inspections relating to the property (“**Property Inspections**”) of Partially Completed Products (compounds) and finished products. Set forth below are the details of such inspections.

**(a) Batch inspections**

Batch inspections are performed on all compounds.

The objective of batch inspections is to check for any mistakes in the raw material compound and to confirm whether the mixing process was performed appropriately by testing the properties of the material (compound) after the raw materials are compounded and mixed. The batch inspections are performed using test pieces extracted from compounds after the raw materials are compounded and mixed (the compound created after a single mixing process is called a “**Batch**”). The inspection is conducted mainly for items such as specific gravity, hardness, tensile strength, elongation, modulus, etc. of the compound.

**(b) Lot inspections**

Lot inspections are performed only for products for which they are required by agreement with the customer or public standards.

Like batch inspections, lot inspections are performed in order to confirm properties, but they are generally performed on finished products.<sup>16</sup> Lot inspections are performed on each lot by extracting a sample from the finished products or test pieces (generally, one lot includes all of the finished products produced over the course of one day using the same press machine and the same mold, but, depending on the product, there are cases where lots are determined differently in the design). The inspection items are those required by agreement with the customer or public standards, and the inspection items are mainly the specific gravity, hardness, tensile strength, elongation, compression set, etc.

**(c) Quality control testing**

Quality control testing is performed only for products for which it is required by agreement with the customer or public standards.

Batch inspections and lot inspections are performed after each mixing process or each production lot, but quality control testing is a test to measure properties at established regular intervals, such as once every few months to once every three years, in order to guarantee the properties of products during a fixed period of time. Quality control testing is performed using finished products or test pieces extracted from compounds. The inspection items are those required

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<sup>16</sup> There are exceptional cases where lot inspections are performed using test pieces extracted from compounds.

by agreement with the customer or public standards, and require confirmation of a broader range of items than batch inspections or lot inspections.

**(d) Dimension inspections**

Dimension inspections are performed to confirm that product shape, structure and dimension (size) meet the required standards.

Dimension inspections are not performed on each manufactured product. Rather, they are performed by extracting a number of samples from each lot, the number of samples determined pursuant to the agreement with the customer or public standards. In dimension inspections, measurement instruments are used to measure the location and details that are specified in the inspection order, such as the outer diameter, thickness, height, etc.

**4 Proper operational flow when Non-Conforming Products are produced**

**(1) Measures taken when Non-Conforming Products are produced**

MCI has established product inspection rules as one of its internal rules based on the company-wide quality control regulations that specify the basic performance items when a company-wide quality control is performed. Based on the provisions of the relevant internal rules, Minoshima Works has established operational processing standards that specify procedures for product inspections and operational processing standards that specify procedures for handling Non-Conforming Products.

According to these operational processing standards, if a Failing Product occurred relating to properties during an interim inspection, then the inspector performs a re-inspection. If the product also fails the re-inspection, then this is reported to the Manager of the Inspection Section, and then the Production Section is notified.

Furthermore, if a Failing Product occurred in the finished product inspection, then (1) if the product failed the visual inspection or dimension inspection, then the Failing Product is either (i) disposed by the inspector or returned to the Production Section if it can be repaired, etc. (in cases where all units are inspected), or (ii) the entire lot is treated as failing and returned to the Production Section (in cases where only samples are inspected) by the inspector, or (2) if the product failed an inspection relating to properties, then the inspector performs a re-inspection. If the product also fails the re-inspection, then this is reported to the Manager of the Inspection Section and then the Production Section is notified, and such lot is required to be disposed.

Furthermore, as stated in (2) below, if a Failing Product occurred during an interim inspection or finished product inspection, then the Manager of the Production Section or the Manager of the Production Administration Section can submit an application for re-review according to established procedures. However, if a product fails an interim inspection, an application for re-review can only be submitted if the Production Section Manager or the

Production Management Section Manager believes that the issue will not have a significant effect on the quality of the finished product.

## **(2) Procedures for re-review**

When a Failing Product occurred as a result of an inspection, procedures for re-review have been established to confirm corrective measures for such defects and make determinations regarding such defects.

According to the operational processing standards at Minoshima Works that establish the specific procedures for re-review, the Production Section Manager or the Production Management Section Manager can commence the procedures for re-review in order to obtain a decision on the corrective measures by submitting an application “if technical or quality consideration is required regarding the details of the non-conformance” for finished products, and “if there will not be a significant effect on the quality of the final product but the product is not in conformance with the specifications (specified in the design)” for Partially Completed Products.

In principle, Failing Products that are subject to a preliminary review are all Failing Products that are determined to be Failing Products by the Inspection Section and have applications for re-review submitted by the Production Section or the Production Management Section, etc.<sup>17</sup>

Then, the preliminary reviewers<sup>18</sup> conduct a review according to the decision standards set forth below and make a decision to (1) “use as-is,”<sup>19</sup> (2) “use after performing repairs (re-process),” (3) “dispose,” (4) “submit a re-review application to the customer,” or (5) “discuss at the Re-Review Committee (high-level committee).”<sup>20</sup> In advance of any decisions made, the Engineering Development Department performs a review of “whether or not there is design authority” and “whether or not there is deviation from customer quality standards.” If there is deviation from

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<sup>17</sup> However, measures such as re-processing, etc. of products are not subject to re-review, and among products for the Ministry of Defense, neither (1) products determined to be not appropriate for use due to design changes nor (2) standard products (standardized products) are subject to re-review. Of these, the rule excluding (2) from being subject to re-review was added as a new revision to the operational processing standards on July 3, 2017. No such rule existed prior to this.

<sup>18</sup> According to the current operational processing standards, the preliminary reviewers are the General Manager of the Engineering Development Department, the Assistant Manager of the Engineering Development Department (or a person s/he designates), the Manager of the Quality Assurance Section and the General Manager of the Quality Assurance Department. Decisions relating to the preliminary review require the approval of the General Manager of the Engineering Development Department and the General Manager of the Quality Assurance Department. However, before the operational processing standards were revised on July 3, 2017, the preliminary reviewers were two people, the Assistant Manager of the Engineering Development Department (or a person s/he designates) and the Manager of the Quality Assurance Section. Decisions relating to the preliminary review only required approval from the Assistant Manager of the Engineering Development Department and the Manager of the Quality Assurance Section.

<sup>19</sup> Treated as equivalent to a Passing Product.

<sup>20</sup> The Re-Review Committee is composed of a member representing the Quality Assurance Department (the General Manager or his/her representative), a member representing the Engineering Development Department (the General Manager or his/her representative), and a supervising official, etc. (if the product involves a contract with the Ministry of Defense).

customer quality standards, a “use as-is” decision is not permitted.<sup>21</sup>

- a. If the customer’s required quality standards are satisfied but MCI’s quality standards are not met, or if there are no customer requirements but MCI’s quality standards are not met:
  - (a) Are there any issues in terms of production or functionality?
  - (b) Was the repair method established beforehand, and does the quality after repair satisfy the customer’s required standards?
- b. If the customer’s required quality standards are not satisfied, and measures other than disposal is to be taken:
  - (a) The preliminary reviewers submit a re-review application to the customer without going through the Re-Review Committee.
  - (b) Submission to the Re-Review Committee (ultimately, customer approval is required).

If the preliminary reviewers determine that review by the Re-Review Committee is necessary, then additional reviews are performed by the Re-Review Committee and the customer re-reviews are also performed if MCI applied for re-review to the customers. The Re-Review Committee makes one of the following decisions on how to handle the Failing Product: (1) “use as-is;” (2) “use after performing repairs (re-process);” (3) “dispose;” or (4) “submit a re-review application to the customer.”

If the product was produced based on a customer design, or if the non-conformance does not satisfy the requirements of the relevant contract, then an application for re-review must be submitted to the customer.

As such, according to the operational processing standards of Minoshima Works, customer approval must be obtained in order to ship Failing Products that do not satisfy customer requirements, and products for which concessions have been made solely through internal re-review procedures (“**Internal Re-Review**”) may not be shipped.

#### **Section 4            Misconduct relating to Quality Control at Minoshima Works Discovered as a result of the Investigation**

##### **1            Falsification relating to inspections, etc.**

##### **(1)        Rewriting test data using the Lists**

##### **A            Description of Misconduct**

Lists called “Silver Lists”<sup>22</sup> (“**Lists**”) exist at Minoshima Works. The Lists stated permitted

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<sup>21</sup> This rule was added when the operational guidelines were revised on July 3, 2017. No such rule existed prior to this.

values that allowed products with Specification Non-Conformances after batch inspections, lot inspections, quality control testing or dimension inspections described in Section 3.3(3) above to be treated as Passing Products.

At Minoshima Works, even if Specification Non-Conformances were identified in batch inspections, lot inspections or dimension inspections described in Section 3.3(3) above, if that product was on the Lists and the actual measured value was within the range of values permitted on the Lists, the inspector of the Inspection Section rewrote the inspection results to fall within the range of the Specifications, and Non-Conforming Products were treated as Passing Products. In addition, even if Specification Non-Conformances were identified as a result of quality control testing described in Section 3.3(3) above, if that product was on the Lists, the inspector of the Inspection Section rewrote the test data to fall within the range of the Specifications and treated the test data as passing all of the quality control test items relating to such product.

The Lists were kept in Excel files in a shared folder that could be viewed by the employees of the Inspection Section.

As discussed in Sections 5.6 below, when the existence of the Lists was discovered in February 2017, the General Manager of the Quality Assurance Department instructed that the number of products and material compounds where test data were rewritten for dimension and Property Inspections be summarized. With respect to dimension inspections, there were a total of 570 products on the Lists and produced during the past two years, and with respect to Property Inspections, for material compounds on the Lists, there were 132 material compounds relating to batch inspections, 17 material compounds relating to lot inspections and 95 material compounds relating to quality control testing.

According to interviews, the rewriting of test data was being conducted extensively using the Lists at Inspection Site I and Site II for seal products that use rubber as the main material and composite seal products of rubber, resin and metal in various industrial fields.

When a Specification Non-Conformance was identified during inspections, the onsite inspector (often a part-time employee) reported to the Site Head, the Inspection Site Head or another manager. The Site Head or the Inspection Site Head checked the Lists and then, if the actual measured value fell within the range of the permitted values on the Lists, the Site Head or the Inspection Site Head instructed the onsite inspector to record values in the test report that were just barely within the upper or lower limits of the Specifications.

When values not conforming to the Specifications resulted from dimension inspections, the onsite inspector took handwritten notes of those values, but when instructions were given to the inspector to rewrite the test data, those handwritten notes were discarded, and a value that fell

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<sup>22</sup> The origins for the term “Silver Lists” is unknown.

within the range of the Specifications were recorded on the test report. For that reason, in such cases, records of the actual measurements were not retained.

On the other hand, test reports for materials (compounds) and Property Inspections (batch inspections) were retained with actual measurements before they were rewritten.

## **B History of the Lists and when the Misconduct started**

According to interviews, it is unclear when it started, but at Minoshima Works, even when a Specification Non-Conformance was identified during inspections, conduct such as the Internal Re-Review described in (2)C below or the discussions among relevant departments described in (2)D below was taken, and Non-Conforming Products began to be treated as Passing Products. In connection with this, the inspectors of the Inspection Section prepared handwritten memos with information (product, Specifications, permitted values, etc.) relating to the decision to treat the products as Passing Products, and filed handwritten test reports that stated the actual measured values for products that were deemed to be passing despite there being Specification Non-Conformances.<sup>23</sup> If a Specification Non-Conformance was subsequently identified in the same product, the inspector referred to such handwritten notes and test reports, and if the non-conformance was within the range of values determined to be passing in the past, the product was treated as a Passing Product without going through the Internal Re-Review described in (2)C below or the discussions among relevant departments described in (2)D below.

There is a column titled “review date” for each product on the Lists relating to dimension inspections. The review date column contains the date when each product was newly registered on the Lists or the date when the permitted range of values on the Lists was updated. When reviewing the dates recorded in the column for “review date,” it was confirmed that there was an increase in cases from around 1996 where products were newly registered on the Lists or where the permitted range of values on the Lists was updated.<sup>24</sup>

According to interviews, from around 1999 to around 2005, with respect to information on permitted values, etc. that was recorded on paper, for dimension inspections, this information was saved electronically using the software Lotus Approach and saved in a shared folder that could be viewed by the employees of the Inspection Section.

Subsequently, in conjunction with not being able to use Lotus Approach at Minoshima Works, around 2009, information relating to batch inspections, lot inspections and quality control testing that had not been saved electronically at that time were also entered into Microsoft Excel spreadsheets, and the Lists were created in Excel files, which is the current form of the Lists.

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<sup>23</sup> According to interviews, at that time, the files that contained the test reports were called “Silver Lists.”

<sup>24</sup> The implications and reliability could not be confirmed, but there was one entry from “1961” in the review date column (the next oldest entry was from “1974”).

## C Awareness of management

In an interview, the former Assistant General Manager of the High Performance Products (Seal Products) Division (“**Former Assistant General Manager of the Seal Products Division**”), who had worked as the General Manager of Minoshima Works, said he was not aware that the Lists existed around 2000 when he was the Assistant Manager of the Engineering Development Department, Section II at Minoshima Works. However, there were material compounds with Specification Non-Conformances identified during batch inspections relating to properties, and he was aware that this issue had been “put on hold” (e.g., left unresolved). He said that, although he was not aware of the scope of the effect, he was aware that Non-Conforming Products were being shipped to customers due to the existence of such material compounds with problems.<sup>25</sup>

In order to review Minoshima Works’ quality control system, a Quality Control Committee was convened at Minoshima Works, with the General Manager of Minoshima Works participating. The minutes of the Quality Control Committee meeting from March 2006 state, “review to see whether some sort of a reason can be provided so that approval can be obtained to amend the customer specifications for the 13A9-70 *ku* [*original text*] batch out (Silver List material),” and “※ the Inspection Section will prepare a list of Silver List materials and the Engineering Development Department, Section I will consider corrective measures.” Moreover, the minutes of the Quality Control Committee meeting held in May 2006 state, “review whether the specifications can be corrected, etc. for the 13A9-70 batch out (Silver List).” The Former Assistant General Manager of the Seal Products Division, who was the General Manager of Minoshima Works at the time, also participated in the Quality Control Committee meetings held in March and May 2006.<sup>26</sup>

Furthermore, the former President (“**Former President**”), who was a Director and the General Manager of the Seal Products Division in 2013, said in his interview that he was not clearly aware of the Lists around 2013, but he had heard about the existence of material compounds with problems from the Former Assistant General Manager of the Seal Products Division who was the General Manager of Minoshima Works at the time. In addition, as a result of the existence of material compounds with problems, the Former President said he was aware that test data was probably being rewritten when it was necessary to submit test data to customers, and that he thought a list probably existed that compiled the material compounds for which changes were not permitted as a result of negotiations with customers.

On the other hand, the Former Assistant General Manager of the Seal Products Division said in his interview that he heard from the Former President that, when the Former President

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<sup>25</sup> Further, with respect to the Non-Conforming Products that were “put on hold,” the Former Assistant General Manager of the Seal Products Division said in the interview that he thought no improvements could be made, since neither the material compound or the customer specifications could be changed, in light of the customers’ wishes, etc.

<sup>26</sup> In the interview, the Former Assistant General Manager of the Seal Products Division said that he does not remember whether the interactions that were recorded on the Quality Control Committee meeting minutes occurred.

interviewed employees at Minoshima Works around 2013 in order to review the quality complaints described in (4)B below, the Former President heard from employees that there was a list compiling material compounds with problems.

In addition, several employees stated in their interviews about the fact that a customer raised a complaint related to quality described in (4)B below around 2013, and when the complaint was being addressed, the existence of the Lists was reported to the Former Assistant General Manager of the Seal Products Division by employees of the Inspection Section, and the Former Assistant General Manager of the Seal Products Division instructed that the Lists continue to be used.

Collectively from the results of the abovementioned interviews, etc., it can be recognized that the Former Assistant General Manager of the Seal Products Division was at least aware that there was a list compiling material compounds with problems at Minoshima Works from around 2013 at the latest, and we believe there is a high possibility that he was aware that test data was being rewritten for the material compounds on those lists. In addition, it can be thought that the Former President was at least aware, around the same time, that a list compiling material compounds with problems may have existed, and that it was possible test data was being rewritten when it was necessary to submit test data to the customers, since there were material compounds with problems.

## **(2) Other misconduct relating to rewriting test data**

As to the process for placing products on the Lists, as described further below, permitted values were set from the design stage based on designs prepared by the Engineering Development Department (A. below) or permitted values were set after mass-production started based on engineering orders issued by the Engineering Development Department (B. below). It is recognized that there were instances where the Inspection Section added products and permitted values on the Lists based on the results above. Further, it is recognized that there were also instances where the Inspection Section added products and permitted values on the Lists based on decisions by the Engineering Development Department and the Quality Assurance Department through an Internal Re-Review (C. below) or based on discussion among the relevant departments that Non-Conforming Products could be shipped without going through the Internal Re-Review (D. below).

### **A Setting permitted values in the designs**

At Minoshima Works, with respect to certain products, for certain specifications the design included statements such as “concessions to be made for permitted dimensional differences (provided as a range) Confidential.” Permitted values were set for certain specifications that were not particularly agreed with customers in the designs. If inspection results were within that range, it

seems those results were permitted internally. With respect to products for which “concessions (confidential)” was stated in the designs, the permitted values were clearly indicated in the designs, and the products were passed and shipped if they met those permitted values.<sup>27</sup>

As noted in footnote 3 above, the MEXCEL Business Department, which is responsible for the development and production of MEXCEL, outsourced the inspection of MEXCEL to the Inspection Section at Minoshima Works. For these MEXCEL inspections as well, instructions were given to set permitted values through common designs, etc.,<sup>28</sup> to be used for all MEXCEL.<sup>29</sup> Based on what is stated in these common designs, etc., the Inspection Section deemed products to be passing if the results of dimension inspections, visual inspections and other inspections were within the range of the permitted values, which was wider than the Customer Specifications. When disclosing test data to customers, the test data was rewritten and the values were reported as falling within the range of Customer Specifications.

## **B Setting permitted values based on engineering orders issued by the Engineering Development Department**

At Minoshima Works, there were cases where instructions were given to set permitted values through engineering orders that the Engineering Development Department issued to notify other departments of engineering related items. Specifically, an engineering order dated July 17, 2012 states that hardness measurement results from batch inspections relating to certain materials are to be deemed as passing if the results fall within the range of permitted values, which was set wider than Customer Specifications. In addition, instructions were given to report values that comply with Customer Specifications when disclosing test data to customers.

According to interviews, for the products covered by this engineering order, the customer requested that MCI supply products that were strictly equivalent to third-party products that the customer was previously using (“Existing Products”). At the same time, instructions were given to comply with the specifications for the Existing Products. However, the Existing Products had the tendency for inspection measurements to concentrate at the lower end of the requirements under the specifications, so if the products were produced to be strictly equivalent to the Existing Products, they often fell below specifications due to the deviations that inevitably occurred as a result of the properties of the material. On the other hand, if products strictly equivalent to the Existing Products were shipped, it was thought that there would be no problems for the customer when actually using the products, even if they did not satisfy Customer Specifications.

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<sup>27</sup> Except for cases of common designs relating to MEXCEL that are mentioned later, with respect to the four designs that have been currently identified as examples of designs with permitted values, the related products were all on the Lists.

<sup>28</sup> In common designs, the Engineering Development Section of the MEXCEL Business Department gave instructions on the inspection procedures, specific methods, etc. for MEXCEL to the Inspection Section.

<sup>29</sup> MEXCEL is not on the Lists.

In this context, as mentioned in C. below, with respect to these products, an application was made for re-review for Failing Products that were deemed not to be a problem for actual use even though they did not meet Customer Specifications, and the decision was made that “use as-is is permissible.” Furthermore, with respect to these products, in light of the circumstances described above, since it was thought that there would be many cases of Failing Products even though there would not be problems with actual use, the Engineering Development Department decided to set permitted values in the engineering order, and the engineering order mentioned above was issued.<sup>30</sup>

As stated in (3) below, with respect to these products, the customer requested submission of average values for the measurements relating to certain inspection items for each lot. For this reason, in order to avoid including test data that fell outside the Customer Specifications when calculating the average values, instructions were given in the abovementioned engineering order to report the rewritten values which fall within Customer Specifications when disclosing test data to the customer.

There were also cases where permitted values were set for MEXCEL pursuant to engineering orders issued by the Engineering Development Section of the MEXCEL Business Department. As stated in A. above, permitted values were specified in the common designs, etc. for MEXCEL from around 2012, but in February 2017, it was discovered that Non-Conforming Products for seal products were shipped due to the Misconduct by the Inspection Section. As a result, the MEXCEL Business Department decided to stop passing products if the results were within the range of the permitted values pursuant to common designs, and this decision was communicated to the Inspection Section. However, due to concerns on the impact to business because of the many Failing Products being produced due to removing the permitted values and a significant decrease in the yield rate, the Technology Development Section of the MEXCEL Business Department issued an engineering order on February 24 and May 19, 2017 after discussions with the Quality Assurance Department, and reinstated the permitted values and resumed rewriting test data. Previously, when disclosing MEXCEL test data to customers, the Inspection Section was manually rewriting test data for values which fell outside Customer Specifications so that the numbers were within the range of Customer Specification. However, around June 2017, there was test data that was not rewritten and test data that fell outside Customer Specifications was submitted to customers. For that reason, since June 2017, for part of the inspection items, when entering test data for MEXCEL that passed inspections, the Inspection Section decided to use Excel’s formula function to automatically rewrite results that fell outside Customer Specifications to the highest or lowest permitted value in the Customer Specifications, in order to avoid test data not being rewritten.

## **C Shipment of Non-Conforming Products that went through Internal Re-Review**

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<sup>30</sup> The products relating to this engineering order are on the Lists.

Although the actual procedures for re-review are as described in Section 3.4(2) above, in certain cases, Non-Conforming Products were shipped after going through an Internal Re-Review with the involvement of each of the Production Department, the Engineering Development Department and the Quality Assurance Department without going through the re-review procedure with customers as summarized below.

As described in Section 3.4(1) above, if a product, etc. fails any inspection, a failure notification is sent to the Production Section from the Inspection Section. Upon receiving this notification, the Site Head, who is in charge of the production process for the relevant product within the Production Department, conducts a review, including the causes of such Failing Product's occurrence, and considers measures for such products, etc.

With respect to the causes of failing inspections, where, for example, even though it failed the dimension inspection, the deviation from Customer Specifications was minimal, or even if there were no deficiencies in the manufacturing process, it would be extremely difficult to satisfy the Customer Specifications to begin with, from the perspective of the person in charge at the Production Department, there were cases where it could be thought that although it did not conform to Customer Specifications, it did not have a significant effect on quality, or there was an issue with the Customer Specifications from the outset.

In these cases, the Site Head of the Production Department submitted an application for an Internal Re-Review, which was approved by the Section Manager of the Production Department.

With respect to Failing Products for which applications for Internal Re-Review were submitted, there were cases where the person in charge of developing the design for such Failing Product in the Engineering Development Department decided that it could be used as-is after going through only an Internal Re-Review and without going through a customer's re-review, despite actual deviations from Customer Specification for certain inspection items. There were instances where an Assistant Manager in the same department approved such decisions. In other words, according to the proper procedures, if there is a deviation from Customer Specifications, it is necessary to go through the customer's re-review and obtain consent from the customer in order to make a shipment. However, in reality, there were cases where the person in charge within the Engineering Development Department (typically the person who was in charge of design and development of the Failing Product), made a determination through an Internal Re-Review that the product could be used "as is" based on the determination that there was no practical problems considering the use by the customer of such product based on his/her own experience and technical understanding, even if there were deviations from the Customer Specifications for specific

inspection items.<sup>31</sup>

As described above, when the Engineering Development Department determined that the product can be used as-is even though customer consent was not obtained, there were times when the Quality Assurance Group also did not raise an objection.<sup>32</sup> As a result, Non-Conforming Products were shipped without obtaining customers' consent.

#### **D Shipment of Non-Conforming Products as a result of discussions among relevant departments without going through the formal internal procedures**

In addition to cases where Non-Conforming Products were shipped after going through an Internal Re-Review without going through a customer's re-review as stated in C. above, there were also cases (summarized below) of Non-Conforming Products being shipped after discussions among the Production Department, the Engineering Development Department and the Quality Assurance Department without going through a formal Internal Re-Review.

There have been cases, for example, where the General Manager of the Production Department conducted a review of the causes of a failure after receiving a failure notification from the Inspection Section, and although the product failed the dimension inspection, the product was produced using the same production method with the same mold as products that had passed previously, and the Production Department did not understand the reason why the product suddenly failed.

In such circumstance, there were instances where the Site Head of the Production Department asked the person in charge in the Inspection Section why a product did not pass, and made a request such as, "please perform the inspection again and treat as passing," without going through an Internal Re-Review. Additionally, there were times when, upon consulting the person in charge at the Engineering Development Department and obtaining an opinion that from a technical perspective, there are no issues based on the design, the Site Head of the Production Department would consult with the Inspection Section, communicate the above determination made by the Engineering Development Department, and request, "please treat as passing."

When such consultations came from the Production Department, there were instances where

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<sup>31</sup> However, according to interviews with personnel within the Engineering Development Department, there were those who stated that all Failing Products which were determined to be usable in its current form only through the Internal Re-Review had a relatively minor deviation from Customer Specifications. It was also stated that if there was a clear deviation from the Customer Specifications, or there would be a practical effect considering the use of the product by the customer, a decision was never made that it can be used as-is because there were no functional problems with the product.

<sup>32</sup> According to interviews with personnel within the Quality Assurance Department, there were those who stated that, with respect to the Engineering Development Department's decisions relating to the Internal Re-Reviews, there were those in the Quality Assurance Department who expressed their opinion that a product should be deemed a Failing Product when it was determined that a shipment can be made despite a large deviation from Customer Specifications, and there had also been cases where the Quality Assurance Department changed the final result, even though the Engineering Development Department initially determined that the product could be used as-is without the customer's consent, and an application for re-review was submitted to the customer.

the personnel within the Engineering Development Department agreed to such consultations, conducted a re-inspection of the product that failed, the Engineering Development Department reported the measurements from their inspection results if the values were within the Customer Specifications, provided advice, such as points to consider and inspection methods in order to obtain accurate test data during an inspection. Furthermore, there were cases where certain members of the Engineering Development Department provided a response that there were no problems with the product's safety or quality in instances where there were no practical issues with the use of the product, the deviation from Customer Specifications fell within the range of similar products or the deviation from Customer Specifications was small.<sup>33</sup>

Further, with respect to Failing Products, when the Site Head of the Inspection Section was consulted by the Site Head of the Production Department, there were cases where he would consult "if it's at this level, let's pass it" and made decisions to treat as passing rather than disposing them. Also, when the person in charge of development at the Engineering Development Department provided an opinion that "there are no problems functionally," such Failing Products were shipped as Passing Products.

### **(3) Rewriting of average value data submitted to customers**

There are cases where MCI is requested by certain customers to calculate and provide the average value of measurements for specific inspection items for each lot of certain products.

According to interviews, for products for which average value data is submitted, a control value for the average value data was set, which was separate from the specifications that were decided with the relevant customer. Even if outside such control value, there were certain products that were difficult to prepare countermeasures for because it is difficult to control the dimension of rubber products during the production stage.

According to a member of the Quality Assurance Section who was in charge of preparing the average value data since 2011, since around 2011, there were many instances where the average value would deviate from the control value if it was calculated based on the values from the test data that was submitted by the Inspection Section. In addition to not being able to prepare countermeasures, the person in charge would need to deal with customers if outside the control value. In order to avoid such circumstances, the person in charge rewrote the relevant test data when he entered the average value data so that it would fall within the control value when the average value would fall outside the range of the control value if the values written in the test data were calculated as is.

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<sup>33</sup> According to interviews with personnel in the Engineering Development Department, there were many members of the Engineering Development Department who stated that as a result of responding to the persons in charge at the Inspection Section or the Production Department, they were not clearly aware of how the Failing Products were going to be handled. Therefore, there was almost no person who stated that they were aware that Non-Conforming Products were being shipped without customers' consent based on their responses regarding the Failing Products.

The specific process for rewriting was, when there was a large variance or a series of values at the upper or lower limits in the test data, the values was rewritten to values that would limit the variance or values that were slightly closer to the medium value than the upper or lower limit, and the average value data would be calculated.

There would be instances where the test data confirmed by the person in charge of entering such average value data would include actual test measurements, and there would also be instances where the test data had been rewritten by the person in charge of the inspection, as stated in (1) above. In particular, as described in (2)B above, in the engineering order dated July 17, 2012, there were instructions to treat as passing even if the measurement for hardness from a batch inspection for a specific material was found to be lower than the lower limit of the Customer Specifications, and to report values that were within Customer Specifications when disclosing test data to the customer. Therefore, the test data for the relevant material that was confirmed by the person in charge of entering such average value data was already rewritten to comply with Customer Specifications based on the engineering order.

#### **(4) Certain inspection items were not tested**

##### **A Description of Misconduct / time of commencement**

As stated in Section 3.3(3)B above, batch inspections, lot inspections and quality control testing are conducted at Minoshima Works as Property Inspections for Partially Completed Products (compounds) and finished products. Of these, with respect to lot inspections and quality control testing, which are conducted for some products, even though some or all of the inspection items were not actually tested, in test reports submitted to customers, it was reported as though such inspection items were actually tested. The inspector in charge of lot inspections and quality control testing hand-copied the actual test data onto a different piece of paper separate from the test report submitted to customers. The results of past inspections were kept as internal record by entering symbols such as “Λ” for items that were not actually tested in order to make it possible to distinguish the fact that they were not tested.

According to interviews, the reasons why lot inspections and quality control testing were not performed for certain products include: (1) the equipment or chemicals necessary for conducting the testing were disposed, so the testing could not be performed; (2) testing for such items have been omitted from a long time ago, and the person in charge onsite was not aware of the testing methods; (3) the person in charge of inspections omitted the testing because the testing takes time; and (4) not testing such inspection items was passed-on from their predecessor.

At Minoshima Works, it seems that for certain products, some inspection items of lot inspections and quality control testing have not been tested since at least from the 1990s.

## **B Awareness of management**

At Minoshima Works, around 2013, with respect to particular products for a certain customer, it was discovered that despite the fact that all quality control testing items had not been tested for a long period of time, the test report for such products stated that all items had been tested. This led to a complaint from the customer. At that time, a review on whether similar problems were occurring for other products as well was conducted, and the person in charge of inspections gave a report to the Inspection Site Head on products where some or all inspection items were not tested. The Inspection Site Head reported this to the Manager of the Inspection Section. At that time, based on instructions from the Manager of the Inspection Section, the number of personnel responsible for lot inspections and quality control testing was increased, but otherwise, no other measures were implemented to resolve this matter.

Additionally, according to interviews, it is recognized that the Former Assistant General Manager of the Seal Products Division, who was the General Manager of Minoshima Works at the time, and the Former President, who was the General Manager of the Seal Products Division at the time, were aware that some or all of the items of quality control testing had not been tested for some products for such customer since they received a report on the complaint by such customer and instructed improvements at that time. However, it cannot be recognized that they were aware that, with respect to other products, some or all of the items for lot inspections and quality control testing were not being tested.

## **2 Inspections conducted using methods inconsistent with proper methods**

### **(1) Insufficient number of samples for dimension inspections**

As stated in Section 3.3(3)B above, inspection items that should be tested by the person in charge of inspections in the Inspection Section, along with the number of samples that should be used for sample inspections, are specified either in Customer Specifications agreed with the customer or in public standards.

However, according to interviews, there were cases in Inspection Site I and Inspection Site II where inspectors conducted inspections with a smaller sample size than the sample size that was specified in Customer Specifications agreed with the customer or in public standards at least since around 1991.

For example, for dimension inspections, despite the customer specifying that the number of samples be thirteen per one lot, dimension inspections were actually conducted on only five samples.

## **(2) Inspections conducted by inspectors who have not received internal certifications**

According to interviews, pursuant to internal rules and agreements with customers, inspections should only be conducted by certified inspectors that received internal certifications. Despite this, there were cases in Inspection Site I and Inspection Site II where inspections were conducted by inspectors that have not received internal certifications.

Even if an inspector had not yet received an internal certification, if the Site Leader determined that he had sufficient abilities, the stamp of the Site Leader or other certified inspectors was lent to such inspector, and he was made to conduct the inspection on his own and affixed a seal as a certified inspector.

## **Section 5 The Status of Response since December 2016**

Taking the interview results and relevant materials together, the following facts can be recognized regarding the status of MCI's response since December 2016.

### **1 The quality audit of MCI by MMC on December 7 and 8, 2016**

In the process of responding to the quality audit by MMC that was conducted on December 7 and 8, 2016 at Minoshima Works, it was discovered that for a certain product for a customer, despite being a Non-Conforming Product that deviated from the Specifications for dimensions stated in the drawing (identified from the dimension inspection), the product had been determined to be usable as-is through the re-review procedures without obtaining approval from the customer, and, in relation to this, test data had been rewritten to fall within Specifications (“**Re-Review Issue**”). Initially, the response to MMC regarding this quality audit was handled by the General Manager of Minoshima Works and the people who worked under him, with the Quality Assurance Department taking a central role. MCI's Internal Auditing Department was the contact point with respect to MMC.

### **2 Reporting the Re-Review Issue to management on January 25, 2017**

The results of the quality audit by MMC, including the Re-Review Issue, were officially reported by MCI's Internal Audit Department to management at the Executive Committee meeting held on January 30, 2017. However, prior to the Executive Committee meeting, the Executive Committee meeting materials were reported to management, including the Former President, at the president meeting on January 25. According to the Former President, he became aware of the matter when he saw the meeting materials.

### **3 Establishment of a task force on February 1**

On February 1, 2017, the Former President established a task force regarding the Re-Review Issue in order to review the causes of test data being rewritten at Minoshima Works. The Former President was the head of the task force, but the person who actually took the lead was the Director, Managing Executive Officer and General Manager of the High Performance Products (Seal Products) Division (“**General Manager of the Seal Products Division**”).

### **4 General Manager of Minoshima Works’ instructions on February 8**

Until February 8, the person in charge of inspections would take notes by hand of the actual measurements from dimension inspections, and discard such handwritten notes when the revised numbers were included in the official test report or the test data was entered into the system. On February 8, as a response to the Re-Review Issue, the General Manager of Minoshima Works at the time issued instructions that handwritten notes should be kept for products relating to such customer in order to avoid a situation where the actual measurement values would not remain in the records at all.

It was also decided to consider introducing a system that automatically extracts test data and enters the actual measurements into test reports.

### **5 Report on the existence of the Lists from the Inspection Site Head on February 9 and the subsequent response after February 9**

On February 9, the General Manager (at that time; hereinafter the same) of the Quality Assurance Department received a report from the Inspection Site Head (at that time; hereinafter the same) that “actually, rewriting of testing data has been done not only for the relevant customer’s products, but also for other customers’ products, and a list<sup>34</sup> exists for such purpose.” The General Manager of the Quality Assurance Department had not seen an actual copy of the Lists at that point but instructed the Inspection Site Head to summarize the number of products and material compounds where test data had been rewritten with regard to dimension inspections and Property Inspections in order to get a full picture. The General Manager of the Quality Assurance Department heard from the Inspection Site Head that the Lists were kept across multiple folders in the Inspection Section, and therefore also instructed the Inspection Site Head to combine the lists saved in each folder.

The General Manager of the Quality Assurance Department reported the details of the report from the Inspection Site Head to the General Manager of Minoshima Works at the time. In order to understand the frequency of test data rewriting using the Lists, the General Manager of Minoshima

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<sup>34</sup> Refers to the Lists.

Works at the time then instructed that it be reported each time a Specification Non-Conformance was identified from dimension inspections for the products on the Lists, and for the Inspection Section to create a list of the reported products. 31 products were reported as Specification Non-Conformances relating to dimensions by the time the Quality Improvement Project was established on May 10, 2017.

It was also decided that with respect to the products on the Lists, if Specification Non-Conformances were identified as a result of inspections, the General Manager of the Quality Assurance Department was to determine how to handle such products in consultation with the General Manager of Minoshima Works at that time. When Specification Non-Conformances were identified, the General Manager of the Quality Assurance Department had the Inspection Site Head explain the details of the Specification Non-Conformances to him. However, as long as it was within the permitted values of the Lists, the operation of shipping after rewriting test data ended up being continued as before.

## **6 Reporting the existence of the Lists to the Former President and others**

On February 22, 2017, the General Manager of the Quality Assurance Department received the Lists from the Inspection Site Head in an Excel file. The Lists that the General Manager of the Quality Assurance Department received from the Inspection Site Head were lists that the Inspection Site Head had combined for each type of inspection from the lists that the persons in charge of inspections would actually review at each inspection site. Also, at this time, the General Manager of the Quality Assurance Department also received a report from the Inspection Site Head that, with respect to dimension inspections, there were a total of 570 products on the Lists and produced during the past two years, and with respect to Property Inspections, for material compounds on the Lists, there were 132 material compounds relating to batch inspections, 17 material compounds relating to lot inspections and 95 material compounds relating to quality control testing.

The General Manager of the Quality Assurance Department reported the Lists to the Quality Control Committee at a meeting held on February 23.

Also, a little before or after such Quality Control Committee, the General Manager of the Quality Assurance Department reported the existence of the Lists to the Former President and the General Manager of the Seal Products Division.

## **7 Reporting to the Former President in early March and the subsequent response**

In early March 2017, the General Manager of Minoshima Works at the time and the General Manager of the Quality Assurance Department submitted the Lists to the General Manager of the Seal Products Division and provided an overview of the Lists. After that, the General Manager of the Seal Products Division reported the details of the above report to the Former President. At that

time, Minoshima Works was busy responding to the Re-Review Issue including confirming the effect on other products for the relevant customer, confirming past records for re-reviews relating to the products of the relevant customer and considering remedial measures for such Non-Conforming Products, etc. Therefore, the General Manager of the Seal Products Division proposed to the Former President that first, address the Re-Review Issue, and after this settles down, then conduct a review regarding the Lists. The Former President approved this proposal, and the response to the Re-Review Issue was addressed until around the end of April 2017.

## **8 Establishment of the Quality Improvement Project and the subsequent Quality Improvement Project activities**

On May 10 after the holidays in May 2017, the Quality Improvement Project was established under the direction of the Former President. According to the Former President, he established the Quality Improvement Project with the goal of reaching a “soft landing” resolution by reporting the circumstances and remedial measures to each customer in an orderly, consecutive manner and asking for their understanding after identifying the cause for the Misconduct and considering remedial measures as well as analyzing the complete picture of the Misconduct, such as when the rewriting of test data at Minoshima Works began, whether there was institutional involvement, how the Lists were managed operationally, and the extent of the deviations from Specifications. The Former President decided to select the members of the Quality Improvement Project based on those who had little relationship with Minoshima Works based on their backgrounds, etc. and appointed the General Manager of the Seal Products Division as the leader of the project. Also, since it will require technical knowledge to address the Misconduct, the General Manager of the Seal Products Division added employees from the Engineering Development Department as a member of the Quality Improvement Project.

At the first Quality Improvement Project meeting on May 16, the activities of the Quality Improvement Project were decided. Examining ways to resolve the Specification Non-Conformances relating to dimensions of the 31 products on the Lists for which Specification Non-Conformances were identified on or after February 9, 2017 was set as the current goal. According to the General Manager of the Seal Products Division who was the leader of the Quality Improvement Project, he thought that by using these 31 products as examples and finding ways to resolve these Specification Non-Conformances, it would also be possible to plan for how to address Specification Non-Conformances for other products on the Lists.

After the first meeting, at the Quality Improvement Project meetings that were held once every two weeks, with respect to the 31 products, matters such as how the designs for such products were decided, when Specification Non-Conformances for such products started and remedial measures were discussed.

Subsequently, at the Quality Improvement Project meetings, the detail of the Lists relating to Property Inspections were also reviewed. Work was also conducted to narrow down material compounds with Specification Non-Conformances by deleting material compounds that are no longer being used and compounds for which there were duplicate entries, etc.

As described above, the Quality Improvement Project, led by the General Manager of the Seal Products Division, considered remedial measures for Specifications Non-Conformances for each product on the Lists.

## **9 Reporting to the Former President on the activities of the Quality Improvement Project, the interim report by the Quality Improvement Project on October 16 and background on how shipments were stopped**

On June 20, 2017, the General Manager of the Seal Products Division provided to the Former President an overview of the 31 products for which Specification Non-Conformances for dimensions were identified on or after February 9, 2017 and the difficulty of addressing the matter, etc. The General Manager of the Seal Products Division also explained to the Former President, among other matters, that addressing this matter with each customer may be time-consuming because of, among other reasons, the strict customer specifications and the need to obtain customer consents if the molds need to be improved.

In mid-July 2017, the General Manager of the Seal Products Division told the Former President his outlook that it would take a significant amount of time before this problem will be resolved since there is an extremely large number of relevant products. The Former President gave instructions to accelerate the review of the details.

Subsequently, on October 16, 2017, the General Manager of the Seal Products Division provided an interim report on the work of the Quality Improvement Project to the Former President. He reported that, with respect to dimension inspections, to resolve the Specification Non-Conformances for the 570 products on the Lists that were produced in the past 2 years, it will be necessary to create new mold prototypes or amend molds. He also reported his outlook that it will take 3 years or more to resolve the Specification Non-Conformances for the 244 material compounds on the Lists because some require a re-examination of the material compounds, although some can be removed from the Lists by reviewing the references to public standards. In response to this, the Former President instructed the General Manager of the Seal Products Division to summarize the analysis by November 2, 2017.

On October 19, 2017, the Former President reported the content of the above interim report to an advisor who was a former President of MCI (“**Advisor**”). The Former President shared his thoughts that he planned to resolve the problem with the aforementioned “soft landing” since there were many affected customers and he believed that Minoshima Works at the time would not be able to handle this if a report was made to all affected customers at once. On the next day (October 20,

2017), the Advisor told the Former President that it would be better to stop shipments of the products on the Lists, and that he should make a report to MMC.

The Former President, thinking that if a report is made to MMC, a request for an early resolution would be made after reporting to all affected customers at once, so on the same day, he instructed the General Manager of Minoshima Works at the time to analyze the business impact if the Misconduct is reported to customers, and also instructed him to stop shipments of the products on the Lists from October 23, 2017.

On October 25, 2017, the Former President reported the Misconduct to MMC, and started reporting to customers on a consecutive manner after that.

## **10 Reasons why no decisions were made to stop shipments and notify customers after February 2017**

According to the Former President, as mentioned in 8 above, the Former President launched the Quality Improvement Project in order to clarify the causes and details of the Misconduct and consider remedial measures, report to each customer individually in an orderly, consecutive manner the circumstances and remedial measures, and reach a “soft landing” resolution. Thereafter, on October 16, 2017, when he received the interim report on the work of the Quality Improvement Project, the Former President was told that there was a significant problem concerning material compounds, that there was a large number of affected customers, and that resolving the Specification Non-Conformances would take 3 years. As the details of such report showed a significantly slower schedule than what the Former President had presumed, he became aware that the selection (sorting) of remedial measures<sup>35</sup> should be accelerated, such as not accepting orders for products that are technically difficult to handle, etc. On the other hand, the Former President stated that he believed that Minoshima Works would be unable to handle customers’ audits and individual demands, etc., and also unable to deliver products, and that it could ultimately expand to MCI being liable for damages and lead to MCI’s business failure if reports on the Misconduct were made to all affected customers at once, so he was aiming to reach a “soft landing” resolution even at that stage. As a result, after February 2017 until the Advisor told the Former President that shipments of the products of the Lists should stop and that a report should be made to MMC on October 20, 2017, there was no decision by MCI to stop shipments or notify customers, and also no decision to report to MMC.

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<sup>35</sup> According to the Former President, he expected the selection of remedial measures as stated above and collection of information for decision making for such purpose to be conducted by the Quality Improvement Project, but partly because the members consisted mainly of engineers, it ended up focusing solely on technical considerations rather than on the abovementioned work, which included business judgment. On this point, he said that he thinks he should have followed up closely on the details of the activities of the Quality Improvement Project by reading the minutes, etc.

## Section 6      The Root Causes and Background

### 1      Background

#### (1)      History of the seal business

Although the seal business is now positioned as MCI's main business, MCI is a company that originally started its operation in the cable business, and the production of O-rings for aircrafts at Minoshima Works in 1958 by applying the rubber composition technology for covered cables was the occasion for MCI to enter the seal business. In the past, MCI's main businesses were the cable business and an electronic components business such as harnesses and so forth for automobiles, while the seal business differed, for production, in both materials to be used and processes to be taken. As such, the seal business at MCI can fairly be deemed as a foreign business so to speak, which had developed independently as there were no models to follow within MCI.

The seal business, which was born under such circumstances, had been positioned internally as a small-scale business that accounted for only a little more than 10% of MCI's total companywide sales for a long period of time, and in terms of profitability, it had been in a situation where positive figures could not be achieved until around 2000. Amongst the interviewees of the Investigation, based on the historical positioning of the seal business at MCI as mentioned above, there were some who stated that the seal business was in a position "like an excess baggage" within MCI.

Perhaps in reflection of such position within the company, more than a few people, both in management and in the field, have expressed the perception that not enough investment in the equipment was made in the seal business in the past.<sup>36</sup> Also, with regard to human resources, there are some who stated that recent graduate new employees were assigned to the businesses such as the cable business and electronic components business on a priority basis.

However, the situation changed after the start of the financial crisis following the bankruptcy of Lehman Brothers in 2008. MCI went into the red and withdrew from the automobile harness business, which became unprofitable, in 2010, and further coming to a point where the cable business was sold in 2016, as a result of which the remaining seal business started to become the main business of MCI.

Along with such internal changes in its position, the seal business was situated at a tough position where on the one hand, it was expected to generate constant profit as the main business of MCI which was under a worsened financial situation, and on the other hand, due to its history, the deep-rooted cost suppression mindset was maintained such that, for example, when procuring a new measurement instrument for testing, applications were made for the purchase of a cheap model

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<sup>36</sup> However, in 2005, there were cases where, for example, clean mold process manufacturing facilities related to the seal products for semiconductor manufacturing devices were newly installed at Minoshima Works.

produced overseas.

## **(2) Closed nature of personnel at Minoshima Works**

As mentioned above in (1), given that the seal business was a foreign business within MCI, people who served important positions, such as General Managers of Minoshima Works and various departments, were often people who basically only had work experience at Minoshima Works or those people who had a long work experience at Minoshima Works. Also, key-position employees (*sogo kikanshoku*) were less likely to come from other works to Minoshima Works, and Minoshima Works had few personnel interactions with other works within MCI. Regarding the line worker employees that were hired locally at Minoshima Works, they basically never worked at other works. During interviews, there were more than a few people with experience at Minoshima Works who pointed out the closed nature of personnel at Minoshima Works, such as stating that people from other works sometimes called Minoshima Works a “village society.”<sup>37</sup>

## **(3) Positioning of quality assurance departments at Minoshima Works**

As mentioned in (1) above, by applying the rubber composition technology for covered cables, MCI started the production of O-rings for aircrafts in 1958, and later on, as they expanded the market share of aircraft-related seal products, it is undeniable that the Engineering Development Department took the primary role in the establishment of the related seal business due to the special need for technical skills for the aircraft-related seal products. Even later on, in the process of expanding the destination of the seal products to the automotive parts field, hydraulics and pneumatics field, semiconductor field and so forth, technical knowledge was imperative in order to move forward with new projects. Also, designs created by the Engineering Development Department were also the base for the production and inspection methods, and there was an interviewee who stated that there were views at Minoshima Works that “designs are everything.” Based on this background, many pointed out that the Engineering Development Department’s position was relatively strong overall at Minoshima Works.

In contrast, there were more than a few people, not just the persons related to the Quality Assurance Department but other departments as well, who stated that the Quality Assurance Department was in a weak position relative to the Engineering Development Department and the Production Department. Generally speaking, there is a tendency for the production departments to be in a relatively stronger position than the quality assurance departments in the manufacturing industry, however, there were multiple people, including those in managements, who pointed out

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<sup>37</sup> Although MCI has a whistleblower hotline (Legal & Compliance Department or Internal Auditing Department) and an external hotline (external legal counsel) as reporting and counseling hotlines for compliance, at least since 2012, there was not even a single internal reporting from Minoshima Works’ employees. These facts could be thought of as arising from the closed nature of personnel at Minoshima Works.

that this issue was especially noticeable at Minoshima Works. With the background of the positions between these departments, from the past, at Minoshima Works, the Inspection Section's role was considered to be only to identify Non-Conforming Products through inspection and the Inspection Section was not recognized as a group that should take the active role of contributing to quality improvement, so that there were more than a few people, mainly in the Quality Assurance Department, who pointed out that there was a tendency of "disrespect of inspection group," on the view that the Inspection Section did not actively contribute to the quality and performance improvements.

## **2 Analysis of the root causes**

### **(1) Insufficiency of resource allocation for the seal business (Minoshima Works)**

Given the history and background of the seal business as mentioned above in 1(1), it is pointed out that the necessary resource allocation (personnel and/or facility investments including the human resource education) has not been made for the seal business (Minoshima Works).

As a result, as stated below, it is thought that the ideals of craftsmanship did not get fostered soundly and the operation of the quality improvement cycle, which should appropriately have been done as a manufacturer, may have been inadequate. For example, under ordinary circumstances, for the purpose of quality control and improvements, the quality information, such as products' inspection results and so forth, should be reported from the quality assurance departments to the development departments and production departments, and measures to prevent the occurrence of Non-Conforming Products by making improvements in the development and production processes should be considered. However, at Minoshima Works, there were no sufficient human resources and facility investments made and, as stated above, the Inspection Section was not recognized as a group that should take an active role in quality improvement, so for a long time, there was no process of providing the quality information, such as inspection results, from the Inspection Section to the Engineering Development Department and Production Department, and it is considered that there was no sufficient collection and analysis of the quality information. Therefore, the quality improvement cycle based on the quality information feedback did not function well, and it is thought that the Engineering Development Department and Production Department could not sufficiently understand their own process capability.

Also, at Minoshima Works, based on the fact that insufficient resource allocation became the norm, it is thought that, for a long time, there was a fall into a vicious cycle: delivery of Non-Conforming Products wherein the test data were rewritten as a patch up measure for such Non-Conforming Products, failure of development and manufacture issues to surface as a result of such patch up measure (i.e., loss of opportunity to be made aware), lack of motivation for quality improvement, and further occurrence of Non-Conforming Products.

**(2) Insufficiency of the mechanism, such as DR, for the production and quality assurance departments to influence the process of product development and order intake**

As mentioned above in Section 3.3(1)A, the Engineering Development Department categorized products into three categories (A, B, and C) in the product development stage, and for the products that are labeled as Category C, DR was performed at key points from the experimental stage, and in addition, in order to verify whether mass production is possible or not, an overall DR, including by related departments, had to be conducted. However, considering the fact that it resulted in many Non-Conforming Products of which it was difficult to make improvements in dimensions and properties and became a trigger for the rewriting of test data, it is difficult to accept that the DR system in the product development steps was able to fully demonstrate its function that was contemplated at the time it was designed. In fact, during the interviews, although there were opinions that pointed out the utility of DR on one hand, there were also more than a few opinions that pointed out the operational challenges and problems.

For example, even for those products that were labeled as Category C and were mass-produced after going through overall DR process, there were occasions where Non-Conforming Products were produced after entering the mass production stage. On this point, the determination as to whether the prototype made by the Engineering Development Department could withstand the mass production, based on the business processing standards at Minoshima Works for DR, was supposed to be made upon considering the process capability index, which is based on the “important properties” at the mass production trial time in overall DR. In other words, any properties outside the scope of “important properties” were not considered, and there is a possibility that the inspection of whether the prototype can withstand the mass production or not may have been insufficient. Also, as mentioned in (1) above, it is considered that based on the business process, because the collection and analysis of quality information by the Quality Assurance Department and the Production Department were not done adequately, their reserve of knowledge was poor, and hence the Quality Assurance Department and Production Department could not provide effective feedback in overall DR, and as a result, the review became just a formality.

As shown above, it is thought that the system for the production and quality assurance departments to influence the process of product development and order intake could not function as intended at the time of the system design, and the “elaboration” in the development steps ended up being insufficient, so that even if the prototypes were within the specifications, there resulted in turn the occurrence of many Non-Conforming Products once the production began due to the production conditions being different from that of the prototype, leading to the rewriting of the test data.

**(3) Insufficiency of resource allocation for the quality assurance departments**

As shown in 1(3) above, based on the background of the Quality Assurance Department’s positioning and thoughts behind the “disrespect of inspection group” at Minoshima Works, the insufficiency of the allocation of the human and material resources for the Quality Assurance

Department at Minoshima Works has been pointed out.

As a result, first, it could be thought that the Quality Assurance Department's lineup became fragile. For example, in the past, the number of management-level employees in the Quality Assurance Department was only a few, and with regards to the key-position employees, which are supposed to take the central role, there were no more than around 20 key-position employees, including the management-level employees.<sup>38</sup>

Also, as referenced in footnote 15 above, while the Inspection Section prepares inspection orders based on designs drafted by the Engineering Development Department, there were multiple people who pointed out that there was a scarcity in human resources in the Inspection Section, such that there was a lack of people who could correctly understand the standards referenced in designs such as those who had experience in the Engineering Development Department. Also, it could be thought that there was a shortage of inspection staff at the inspection sites. For example, after the start of the financial crisis following the bankruptcy of Lehman Brothers in 2008, there was a companywide staff reduction in MCI, and as of April 2008, there were 68 part-time employees/part-time workers that belonged to the Inspection Section, but as of April 1, 2009, the number of part-time employees/part-time workers was significantly reduced to 49. After that, around 2012, sales declined significantly in the seal business, and downsizing was carried out for the purpose of cost reduction at Minoshima Works, at which time there were a total of 53 part-time employees/part-time workers in the Inspection Section as of April 1, 2012, which was significantly reduced to 40 people as of April 1, 2013. Among the interviewees who belonged to the Quality Assurance Department, some stated that at the time when the number of inspectors was being reduced, as the people on the inspection site were finding the workload excessive, there was an instruction at Minoshima Works which said "Even if you spend time to run inspections, it will not create any values, so be sure to efficiently run the inspections without spending unnecessary man-hours." Also, some pointed out that even though the number of inspection staff was reduced when sales declined as mentioned above, nothing sufficiently was done to invest in the facilities for the Inspection Section, like improvement in inspection efficiency through automation of inspection equipment. Moreover, in the past, it seems that staffing plans were made at Minoshima Works based on the increase and decrease in sales and depletion of staffing through reasons such as retirements, and the method of calculating the necessary staffing based on man-hours and scheduled production quantity was never employed, such that it is considered that the actually required number of inspection staff in the inspection process was not accurately understood.

As such, it seems that the fact that the human resource distribution in the Quality Assurance Department was insufficient became the norm, and such situation seems to have led to the vulnerability of the Quality Assurance Department as an organization. As a result, its autonomy as a quality assurance department was never established. As an example, even the inspection methods to

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<sup>38</sup> As of April 1, 2017, there were 24 key-position employees in the Quality Assurance Departments, however, in comparison, there were 39 key-position employees in the Engineering Development Department and 149 in the Production Department.

be used by them were considered and decided by the Engineering Development Department, and when there were unclear points in individual inspections such as items to be inspected, rather than reviewing designs themselves, they consulted and received instructions from the Engineering Development Department, and it is recognized that they had a tendency to rely on other departments for conducting its business. Also, it is recognized that its organizational vulnerability may have been a constraint to providing standard responses, by motivating the desire to avoid operational burden needed for standard responses, such as having to provide necessary explanations to other departments for disposal of Non-Conforming Products and having to request the customers for re-review process for concessions each time.<sup>39</sup>

The Inspection Section lacked the “stamina” to sufficiently endure the burden of the standard process, which became one of the driving forces for accelerating the inappropriate conducts (i.e., problem dodging behavior) such as rewriting test data using the Lists, rewriting of the average value data, and not conducting a portion of inspection items, rather than resolving the fundamental problems.

The fact that they do not have sufficient stamina to endure the standard process for solving problems can be seen to also have a common point at the fundamental level with the problem with its response measures even after the discovery of this matter (i.e., delay in reporting to customers and suspending shipment of Non-Conforming Products). That is to say, even just to respond to the one case of the Re-Review Issue between December 2016 and April 2017, the Quality Assurance Department was in a situation to be solely dedicated to responding to the additional audits and requests from MMC and relevant customers, investigating to determine the cause and formulating preventative measures against recurrence. Although the process that was actually taken was probably necessary from the perspective of the magnitude of the Re-Review Issue and also from the perspective of recurrence prevention and quality improvement, nevertheless, its burden on Minoshima Works and the Quality Assurance Department was quite large. When the Former President witnessed the Misconduct, he reached the conclusion that “if we reported the Misconduct to all of the relevant customers at once, Minoshima Works will not be able to handle the customers’ audits and individual requests,” and the only way to resolve is by “soft-landing,” and thus he did not discuss to move toward solutions by sharing the existence of the Misconduct with any of the directors aside from the directors in charge of the business (General Manager of the Seal Products Division) from whom he received the report, and he intended to follow such way of problem-solving and, in a way, he stubbornly insisted on such way of problem-solving. It cannot be denied that the background to such reaction was due to the perception of the reality of such lack of stamina.

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<sup>39</sup> Amongst the interviewees, some stated that when some problems arise during work, its cause was investigated and pursued, which was even termed a “search for the culprit.”

**(4) Strain on the quality assurance departments from other departments due to the chain of pressure**

Although the Engineering Development Department was in a position to feel the pressure to develop products that respond to the customers' needs regarding the specifications, it is recognized that they were also in a position to be able to request the Production Department to mass-produce the products that they developed according to the specifications they agreed with the customers. Although the Production Department received the pressure of having to manufacture according to the specifications, even with the products of which it was difficult to meet the specifications, it is recognized that they were in a position to be able to make demands to the Inspection Section such as "why did this fail the inspection, even though it was manufactured with the same mold that passed the inspection before?", "how much of an effect will there be to the product performance with this level of deviation from the standard?", and further "why can't it pass this time, even though, previously, this degree of deviation was accepted?"

In contrast to this, the Inspection Section was in a position to be left to bear the chain of pressure, and in addition to the power relationship at Minoshima Works referenced in 1(3) above, there was a tendency to rely on other business departments as mentioned in (3) above, so they could not shift the pressure from other departments, and as a result, it is thought that they took the response measure of loosening the inspection standards by setting permitted values in the Lists.

**(5) Conceited mindset of being able to control the quality**

As mentioned in Section 4.1(2)C and D, there were occasions when the Production Department and Inspection Section delivered the Non-Conforming Products as accepted products upon receiving the opinions from the Engineering Development Department that "there are no issues in its functionality."

On the premise of the Engineering Development Department providing such opinions, there were multiple Engineering Development Department employees who stated that they "thought that the Engineering Development Department could judge, based on their own experience and senses, whether there existed functional and safety issues for use as seal products as a result of such Specification Non-Conformances." Despite the fact that complying with the specifications requested by customers is an obvious thing to do as production business personnel, in the background of the Engineering Development Department making decisions like above, there was a kind of arrogance related to the quality control, that is to say, "We understand the customers' method of use of seal products sufficiently and, with regard to the effects of Specification Non-Conformances on the functionality and safety of the seal products, we do not need to get customers' judgments, because we could judge ourselves."

Also, as mentioned in Section 4.1(2)B above, there were instances where the Engineering Development Department judged that "if products strictly equivalent to the Existing Products are shipped, there would be no problems for the customer when actually using the products, even if

they do not satisfy Customer Specifications” However, it must also be said that this is also displaying the attitude of interpreting the customers’ wish in the way that is just convenient for them.

On this point, there were multiple people among the concerned individuals in the Quality Assurance Department that stated the understanding of the Quality Assurance Department as “even if the specification is not conforming, rubber-made seal products will stretch and shrink, so there is no issue functionally,” “since there were no problems, such as complaints and so forth, from customers in the past, there is no problem,” and “to be considerate to the customers, it is better to continuously ship the same products as in the past.” Also, some in the Production Department stated the Production Department’s understanding, which was that “from the perspective of the Production Department, even in a case where the Specifications are not fulfilled, we were approved by the Quality Assurance Department and Engineering Development Department about the shipment of the products, so we thought that there were no issues in terms of its functionality.” In light of that, it is considered that the Engineering Development Department’s awareness in quality control as mentioned above was shared with Minoshima Works’ other departments and became ingrained at the entire Minoshima Works.

On the other hand, the education system about the quality control was not maintained sufficiently at Minoshima Works, therefore, people suggested that there was not enough understanding among the employees at Minoshima Works on issues such as how the seal products that they were producing were being used and what kind of impact will result when there are quality issues with the products. Considering this, it can be thought that the fact that the education about the quality control was not sufficient was, in a way, a factor for a mindset of the self-righteous arrogance about the quality control to be ingrained at Minoshima Works.

Also, with the closed nature of personnel at Minoshima Works as a background, which was mentioned in 1(2) above, it is thought that such mindset of arrogance about quality control was justified as “something that senior employees had done for many years as common sense” and was left unchanged.<sup>40</sup>

Further, it is undeniable that, in the process of such inappropriate conducts prolonging and becoming permanent, an awareness of compliance with customer specifications started to be reduced and the compliance awareness, including the quality compliance, became dull.

## **(6) Low risk sensitivity in quality issues**

Nowadays, if a Specification Non-Conformance develops into a quality issue, it can have a

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<sup>40</sup> Obviously, it is recognized that some concerned individuals, including the onsite inspectors, felt the doubts and disagreements about the Misconduct, and expressed their sentiments during interviews. On the other hand, it is also true that the Misconduct had continued for many years in Minoshima Works without being raised widely through internal reporting systems. The above reference is not meant to show that there was no resistance or problem awareness in engaging in the Misconduct by each concerned individual, but rather, to consider the structural cause based on the fact that it has been continued for a long time as mentioned above.

huge impact on the company, its customers, and the society, so it is necessary to consciously respond based on the way the society will accept quality issue risks and by keeping the level of sensitivity high. Based on this perspective, looking back at MCI's responses after the Misconduct at issue surfaced, it seems that, not only just the employees that handled each individual situation, but also the management team that came to know of the Misconduct had a problem where their risk sensitivity to the quality problem was insufficient.

For example, as mentioned in Section 5.10 above, according to the Former President, he thought that "Minoshima Works would be unable to handle customers' audits and individual demands, etc., and also unable to deliver products, and that it could ultimately expand to MCI being liable for damages and lead to MCI's business failure if reports on the Misconduct were made to all affected customers at once," so he was aiming to reach a "soft-landing" resolution. However, it is clear that the situation was very serious based on the number of customers and products that were potentially affected by the Lists, the use of the products covered in the Lists, and the work necessary to confirm the safety, and considering the situation where shipment of Non-Conforming Products was still being continued, criticism is unavoidable that the timing of stepping in for each response, such as sharing information among the management team, and directors in particular, suspending delivery of Non-Conforming Products, and providing explanations to customers, was late. Even though there were reasons mentioned in (3) above as a background to such responses, it must be stated that there was a lack of sensitivity for the risk caused by delaying the response to the Misconduct, and in addition, the risk that quality issue will bring to the business.

Also, as mentioned in (5) above, at Minoshima Works, with the reduction in the consciousness for customer specifications compliance and the existence of arrogance in terms of quality control in the background, the risk sensitivity for quality issues was lowered for Minoshima Works as a whole, and it seems that things ran toward the easy direction of the maintenance and continuance of the Misconduct without sufficiently thinking about the effects to the company, its customers, and the society from the series of inappropriate conducts at issue. In other words, while inappropriate conducts such as shipment of Non-Conforming Products have been continued for many years, there was a gap in common sense between the society and Minoshima Works regarding the effects of the quality issues, and as a result of this gap widening, it is thought that the lowering of risk sensitivity towards quality issues resulted.

## **Section 7            Recurrence Prevention Plans**

### **1            Automation of the inspection system**

As mentioned in Section 4.1(1)A above, the situation surrounding the rewriting of the test data using the Lists was a system where it was possible to rewrite the test data easily; when Specification Non-Conformances were detected by the onsite inspector, the numerical value was

recorded in handwriting, and on the other hand, test reports to be submitted to customers were just prepared by recording numerical values within the specification range.

From the point of view of preventing the rewriting of test data in the system, it is necessary to automate the inspection system and eliminate the opportunity to rewrite the test data. From this perspective, as a first step, an inspection system that does not involve human manipulations, where the test data is directly reflected in test reports, should be introduced. Further, since standards of seal products are diverse and complicated, in the future, it should be considered to introduce a system that does not involve human judgment, where each inspection standard and measured result will be compared automatically, and the inspection results are automatically determined. Although these measures, as a method of compliance issue resolution, have the characteristic of treating the symptoms rather than the fundamental resolution, it should be implemented quickly as a means to take countermeasures early on, considering the occurrence of the Misconduct.

## **2 Review of quality improvement cycle and strengthening of the “elaboration” system in product development steps**

As referenced in Section 6.2(1) above, it appears that the operation of the quality improvement cycle was insufficient at Minoshima Works in the past, and as referenced in Section 6.2(2) above, the system encouraging the production and quality assurance departments to influence production development and process of order intakes, such as DR, did not fully function as intended at the time of the system design, and it appears that the “elaboration” regarding the products at the development steps might have been insufficient.

Therefore, it is necessary to review the quality improvement cycle and strengthen the “elaboration” system of the products in the development steps.

The DR system was introduced in 1995 at Minoshima Works, and there were system reforms that had been done to enhance the system, but there was no effective feedback being made from the Quality Assurance Department and Production Department to the Engineering Development Department, so overall DR in the related departments may have become what could be called a “half-hearted” effort. Going forward, the company should strive for a system to prevent the occurrence of the Non-Conforming Products beforehand by accumulating the knowledge in the newly established Quality Assurance Division and Production Department with regards to the product development steps, such as DR, and receive effective feedback from the Quality Assurance Division and Production Department and doing the “elaboration” in the development steps that cover more broad perspectives, while reviewing the quality improvement cycle so that the Quality Assurance Division and Production Department can properly run the collection and analysis of the quality information.

### **3 Sufficient resource allocation for the quality assurance departments**

As mentioned in Section 6.2(3) above, it seems that the resource allocation for the Quality Assurance Department being insufficient had become the norm, leading to the vulnerability of the Quality Assurance Department as an organization, and as a result, there arose motivation to avoid the business burden needed for the standard responses for the Non-Conforming Products and a preventing factor for conducting standard responses.

Therefore, it is necessary to remove any of the abovementioned preventing factors for standard responses by allocating sufficient resources to the Quality Assurance Division and strengthening the structure as a quality assurance department.

It is necessary to nurture the independence as a quality assurance department by reinforcing the core personnel in the Quality Assurance Division and accumulating an organizational knowledge by moving key-position employees, who are well-versed in seal products' standards, such as people who have worked in the Engineering Development Department, to the Quality Assurance Division, or bring in people from the outside. Also, an appropriate number of inspectors should be secured based on accurate understanding of the workload of currently ongoing necessary inspections. Furthermore, an automation of inspection facilities as in 1 above will, in addition to eliminating human-induced rewriting of test data, improve the efficiency of the inspections, and from the viewpoint of reducing the burden on the inspection sites, its effective application method should be carried out in sequence.

### **4 Strengthen the independence of the quality assurance departments**

As in Section 6.2(4) above, the Inspection Section stands in a position to receive the strain from a chain of pressure from the Engineering Development Department and Production Department, without being able to diverge its pressure to other departments, and that in itself seems to have led to the response of loosening the inspection standards by setting the permissible values in the Lists.

In order to avoid the strain due to a chain of pressure on the Inspection Section, there is a need to strengthen the quality assurance departments' independence by separating the quality assurance departments from Minoshima Works organizationally and taking such measures as making it an organization under the direct control of the President. To this end, as described in footnote 1 above, on February 1, 2018, the Quality Assurance Division was newly established as an organization that directly reports to the President. At the same time, the Seal Products Quality Assurance Department was established under the Quality Assurance Division, to which the functions of the former Quality Assurance Department of Minoshima Works were transferred.

In order for the quality assurance departments' independence not to be just in appearance but to let it truly demonstrate its function, the quality assurance departments should take a central

role by correcting the recognition that the quality assurance departments are not departments that should play an active role in quality improvement and not only just “not ship Non-Conforming Products” but aim for a quality control system with the goal of “not manufacturing or designing Non-Conforming Products.” On top of that, it should be considered for the quality assurance departments that became independent from the works to be a central department for quality control within MCI, performing in-depth quality audits on each works and being responsible for checking quality frauds as well.

## **5 Fostering the mindset of quality control, not just for the quality assurance departments, but also the development and production departments, and improvement of compliance awareness**

As mentioned in Section 6.2(5) above, it is thought that there was an arrogance of assuming that the quality can be controlled at Minoshima Works, such as “The impact of the Specification Non-Conformances on the seal products’ functionality and safety can be judged on our own,” and also, as a background that brought about such arrogance, it is thought that there was a dullness of the compliance awareness while the Misconduct lasted for a long time, and the insufficiency of the compliance education, which includes quality compliance. Further, such mindset was something that could be commonly seen throughout the Engineering Development Department, Production Department, and Quality Assurance Department.

Therefore, it is necessary to foster the spirit of quality control by reaffirming the basic principles of compliance with customer specifications with not only the Quality Assurance Division, but also targeting the employees of the Engineering Development Department and Production Department to improve the educational system on quality control companywide, while deepening their understanding on how the products they produce are being used and the kind of impact it will have when quality problems arise regarding the products.

In addition, by reinforcing the company-wide compliance education, further improvement in compliance awareness, which also includes quality compliance, should be planned.

## **6 Awareness makeover in the quality issues**

As referenced in Section 6.2(6) above, looking at the responses and so forth after the Misconduct surfaced, it must be stated that the risk sensitivity to the quality issues was low in the participating officials, including the management team and executives, that recognized and responded to the Misconduct.

Hence, going forward, it is essential to promote awareness reform in the quality issues at MCI. As a result of inappropriate behaviors, such as shipment of Non-Conforming Products, being continued for such a long time at Minoshima Works, it is necessary to change the “common sense”

that became ingrained in the concerned individuals. In order to do that, various problems raised by the Misconduct and its process of responses that the relevant individuals experienced should be shared and remembered as the organization's history by the management team, and upon elevating their own risk sensitivity related to the quality issues, it is necessary to move forward and continuously send messages to the employees from top-down. Also, the efforts to prevent the occurrence of the company's common sense derailing from that of the society should be promoted, such as by actively bringing in external perspectives from quality consultants and so forth.

Through these measures, it is necessary to plan continuous reform of awareness relating to the quality issues at the companywide level.

END

**Preventive Measures for the Non-Conforming Product Shipment Issue at Minoshima Works**

February 20, 2018

Mitsubishi Cable Industries, Ltd.

## 1. Introduction

We express sincere apology for the difficulties that we have caused to all concerned parties, including our customers and business contacts, in connection with certain misconduct.

A quality audit performed by Mitsubishi Materials Corporation (the “Parent Company”) led Mitsubishi Cable Industries, Ltd. (“MCI”) to become aware in its internal investigation of the fact that the inspection departments at Minoshima Works (the “Works”) were engaged in inappropriate conducts such as rewriting of measurements for dimensions and material properties of seal products and the omission of testing of certain inspection items. MCI has worked, through an internal project team, to confirm the underlying facts, identify non-conforming products and consider ways to ensure safety.

Given the limitation on the internal investigation to determine the causes and background circumstances of the present matter, on November 13, 2017, MCI established an investigation committee, including an external lawyer, with the goal of investigating the underlying facts.

Additionally, in the process of the subsequent internal investigation, MCI discovered that certain misconducts, including rewriting of data, also existed with respect to rectangular magnet wire (at MCI, the product name is “MEXCEL”).

This report summarizes (i) our preventive measures for recurrence to be undertaken based on the investigation report (“Investigation Report”) prepared by external lawyers and submitted to the investigation committee and (ii) the outcome of the internal investigation.

## 2. Occurrence Factors of Issues

Based on the contents of the Investigation Report and the outcome of our internal investigation, we classified the occurrence factors of the issues pertaining to the Works and our headquarters (“Headquarters”) respectively and compiled as follows.

### (1) Occurrence Factors at the Works

- A) Insufficient consideration of the product development, production and inspection processes when receiving orders
- B) Insufficient allocation of the human and material resources for the quality assurance departments, resulting in its organizational vulnerability
- C) Insufficient system for conducting appropriate inspections
- D) Insufficient system to ensure appropriateness of the inspection operations
- E) Lack of compliance awareness with respect to specifications and standards agreed with customers
- F) Insufficient structure for raising issues with regard to material information in the Works and resolving such issues

### (2) Occurrence Factors at the Headquarters

- A) Insufficient framework for quality control at the Headquarters
- B) Insufficient communication between the Headquarters and the Works
- C) Insufficient quality audit from an independent position

## 3. Preventive Measures for Recurrence

### **Measures at the Works**

- (1) Strengthening of front-loading (corresponding to 2. Occurrence Factors of Issues (1) A))
  - A) Establishment of a framework for discussions on an organizational basis from the design and development stage
    - Make the involvement of production departments, quality assurance departments and production administration departments from the design development stage mandatory, and also make the sales departments be involved as necessary
    - Have the quality assurance departments conduct the final inspections for the transition to the mass production process and have the General Manager of the Works make the approval
    - Review the rules and regulations (e.g. rules and regulations, statements, standards, manuals, and forms) related to the design and development in accordance with the above

- B) Establishment of a framework to understand and share the process capability
  - Establish a framework that enables understanding, analyzing and sharing of the process capability (e.g., understanding the levels of quality by utilizing a production control system and inspection data) in a timely and appropriate manner at the stages of order intake, design and development, transition to mass production and thereafter, and as a result appropriately address a lack of process capability
  
- (2) Automation of the inspection system (corresponding to 2. Occurrence Factors of Issues (1) B) and C))
  - A) Introduction of the automatic inspection system
    - With respect to product inspection data, establish a system which prevents data rewriting and other misconducts and accurately and promptly confirms the conformance of the inspection data to the specifications required by customers. In connection with the promotion of the automation, introduce necessary inspection equipment and provide necessary system support
  
- (3) Strengthening the quality assurance departments at the Works (corresponding to 2. Occurrence Factors of Issues (1) B) and D))
  - Strengthen the structures of the Quality Assurance Section and the Inspection Section in the quality assurance departments at the Works
  
  - A) Strengthening of the structure of the Quality Assurance Section
    - Review and revise the quality control-related regulations of the Works to match the company-wide quality control-related regulations, and clarify the roles, responsibilities, authorities and rules of the Quality Assurance Section
    - Increase the number of staff of the Quality Assurance Section
  
  - B) Strengthening of the structure of the Inspection Section
    - Increase the number of staff of the Inspection Section (specific number of staff to be increased will be determined in light of the introduction of inspection equipment)
    - Additionally introduce necessary equipment (e.g. automatic dimension measurement instruments) to increase inspection efficiency
    - Conduct periodic rotation of the Inspection Section members
  
  - C) Review of regulations related to product inspections
    - Review the product inspection-related regulations in order to ensure appropriate inspections. In addition to the revisions to the regulations, develop an inspection process based on

appropriate inspection items and inspection methods, and consistently hold briefing sessions for all inspectors to ensure thorough implementation of the inspection process

- (4) Enhancement of the technology and quality improvement activities (corresponding to 2. Occurrence Factors of Issues (1) A))
- In addition to the enhancement of front-loading, enhance the activities to fundamentally improve technology and quality issues, personnel development and other initiatives

### **Measures at the Headquarters**

- (5) Restructuring of the quality assurance framework (corresponding to 2. Occurrence Factors of Issues (2) A))
- A) Ensuring of independence of the quality assurance departments
- Establish the Quality Assurance Department in the Headquarters, which is to promote and oversee quality control on a company-wide basis
  - Establish a quality control framework that ensures independence from the Works and Amagasaki Works (collectively, the “Two Works”) by having their quality assurance departments directly report to the Quality Assurance Department of the Headquarters.
  - Clarify the roles of the quality assurance departments of the Headquarters and the Two Works, and assign personnel who can enable the Headquarters to effectively fulfill its role toward the Two Works in the quality assurance departments of the Headquarters and the Two Works
  - Enhance the rotation and communication of the quality control-related personnel between the Parent Company and MCI
- (6) Enhancement of governance of the manufacturing site (corresponding to 2. Occurrence Factors of Issues (1) A) and F), and (2) A) and B))
- A) Strengthening of the company-wide quality control framework
- Review the company-wide quality control-related regulations (clarification of roles, responsibilities, authorities and rules)
  - Redesign the company-wide quality management system to establish a framework that can effectively and efficiently exert a control function against the Two Works (A cycle of policy management, operation, audit, management review and improvement will be redesigned into a company-wide PDCA cycle, rather than a cycle closed within each of the Two Works)
  - Conduct monitoring of the status of compliance with the quality control regulations at the Two Works as well as their inspection data by the quality assurance departments of the Headquarters

- B) Formulate rules regarding the reporting of risk information related to quality at the Two Works
  - Restructure and integrate committees and other similar organizations related to quality, and clarify the routes, contents and responsibilities of reporting within each of the Two Works and to the quality assurance departments of the Headquarters and the Parent Company
  
- C) Confirmation of appropriateness of the quality control rules at the Two Works
  - Have the quality assurance departments of the Headquarters confirm that the rules (e.g. rules and regulations, statements, standards, manuals and forms) of each of the Two Works match the company-wide quality control rules, and issue directives to correct any inconsistency as necessary
  
- D) Review of risk management
  - Have the quality assurance departments of the Headquarters review the risk management process, including risk identification and assessment, formulation and implementation of countermeasures, progress confirmation and formulation and implementation of corrective measures, establish a specific operation method, and familiarize all employees with such process
  - Provide education aimed at improving and maintaining risk sensitivity under the initiative of the Headquarters
  
- (7) Awareness reform for quality compliance (corresponding to 2. Occurrence Factors of Issues (1) D) and E), and (2) B))
  - A) Changes in corporate culture
    - In order to change the mindset of prioritizing delivery deadlines, productivity and profits, promote awareness reform based on the code of conduct of the Mitsubishi Material Group that manifests a quality-oriented mindset
    - In order to promote employees' awareness reform, provide education and training that lead employees to understand the formulated code of conduct and the quality control rules and think for themselves how they make use of them in the course of their daily activities
  
  - B) Enhancement of compliance training by job level
    - Revise the contents of the compliance training that has been provided to date so as to raise awareness of each employee by adding this incident and its factors to the contents as a specific example

- C) Confirmation of employees' comprehension and penetration of compliance
  - Consistently conduct employee compliance awareness surveys to monitor the comprehension and penetration, and consider additional countermeasures for any organization that shows a possible lack of comprehension and penetration
  
- D) Reflection of the participation in personnel evaluation
  - Introduce a framework to proactively recognize the participation in compliance training and compliance awareness surveys, and consider measures to create a culture that places value on compliance and to reflect the degree of participation in personnel evaluation
  - Introduce a framework in which when an individual raises a question or make a report to his or her superior or via whistleblower hotline with respect to an issue that he or she has learned in the course of business, the reporter will not suffer a disadvantage but rather be positively recognized, and by doing so create a culture that encourages "speaking up"
  
- E) Encourage active communication
  - Implement personnel rotation between the Headquarters and the Two Works and within the Two Works so as to prevent entrenched personnel deployment within organizations and ensure new staff are constantly assigned, and eventually aim for the realization of (i) discovery of new issues from a new perspective and (ii) elimination of the culture of holding back in the organization.
  - Encourage active company-wide communication beyond the vertical and horizontal relationships, including relationships of departments and job titles
  
- (8) Strengthening of internal audit (corresponding to 2. Occurrence Factors of Issues (2) C))
  - A) Strengthening of quality audit
    - Conduct objective quality audit by the audit departments of the Headquarters
    - Enhance development of human resources in charge of quality audit
  
  - B) Strengthening of the audit system
    - Review the system, roles, audit items, and other similar matters of the audit departments of the Headquarters (Recheck whether the company-wide governance and check-and-balance system is working with respect to not only quality but also, among other things, safety and environment)
    - Increase the number of staff of the internal audit departments

#### 4. Other

We take it very seriously that we have caused difficulties to all concerned parties, including our customers and business contacts, in connection with our recent misconduct, and have decided that the President, General Manager of the Minoshima Works, and other Directors will voluntarily return some of their monthly remunerations by 30% for March 2018, 30% for March to May 2018, and 10% for March 2018, respectively.

Moreover, the former President will resign as director, and under the initiative of the President who assumed the office on December 1, 2017, the Company is determined to work together to resolve the present matter at an early date and implement the recurrence preventive measures so as to restore trust.

END

February 20, 2018

Mitsubishi Cable Industries, Ltd.

### Change of a Director

We hereby announce that we will effect a change of a director as of February 28, 2018, as below.

1. Contents of the change

Resignation of a director

Title	Name	Title after resignation
Director	Hiroaki Murata	Counsellor

Direct any questions to:

Corporate Administration & Personnel Section  
Administrative Division  
Mitsubishi Cable Industries, Ltd.  
TEL: 03-3216-1551

END