

December 28, 2017

To: All

Company Mitsubishi Materials Corporation  
Representative Akira Takeuchi, President  
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Special Investigation Committee Interim Report  
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 Shindoh Co., Ltd. (“MSC”)’s and Mitsubishi Cable Industries, Ltd. (“MCI”)’s delivery of products that deviated from customer or internal specifications due to misconduct, including the rewriting of data. MCI and MSC are consolidated subsidiaries of MMC.

We would like to report that MMC’s Board of Directors received an interim report today (attached), from the Special Investigation Committee. The Special Investigation Committee plans to submit its final report at the end of February 2018.

END

Direct any questions to:

Corporate Communications Dept., General Affairs Department, Mitsubishi Materials Corporation

TEL: 03-5252-5206

General Affairs & Personnel Dept., Mitsubishi Shindoh Co., Ltd.

TEL: 03-6629-5850

Corporate Administration & Personnel Sec., Administrative Division, Mitsubishi Cable Industries, Ltd.

TEL: 03-3216-1551

December 28, 2017

Special Investigation Committee

Chairperson Mariko Tokuno

## Interim Report

## 1. Background

Mitsubishi Materials Corporation (“**MMC**”) discovered that certain products produced and sold by MMC’s subsidiaries in the past, including Mitsubishi Shindoh Co., Ltd. (“**MSC**”) and Mitsubishi Cable Industries, Ltd. (“**MCI**”), were shipped that deviated from customer or internal specifications (“**Non-Conforming Products**”) due to the rewriting of inspection records data and other misconduct (“**Misconduct**”) (“this Matter”). Determining that it is necessary to immediately confirm safety, MMC, MSC and MCI made a public announcement concerning this Matter on November 23, 2017.

In order to achieve the purpose set forth in 2.1) below relating to this Matter, a special investigation committee (“**Committee**”) was established according to a resolution by MMC’s Board of Directors on December 1, 2017, with the majority of the Committee consisting of outside directors and an outside expert. MMC’s Board of Directors granted the Committee the authority, among other things, to conduct the investigation set forth in 2. below.

The Committee received an investigation report dated December 27, 2017 from the MSC Investigation Committee (Attachment 1), an interim investigation report dated December 27, 2017 from the MCI Investigation Committee (Attachment 2) and a report titled “Restructuring Measures of the Governance Framework for Quality Control in the MMC Group ” from MMC (Attachment 3). The Committee is therefore submitting an interim report with its opinions to MMC’s Board of Directors.

## 2. Purpose of the Committee, Committee Members and Operational Guidelines

## 1) Purpose

The purpose of the Committee (“**Committee’s Purpose**”) is, among other things, to conduct the investigation described below relating to this Matter, appropriately assess the facts, causes and effects of this Matter and formulate measures for the MMC group as a whole, including preventive measures.

- ① Issues at MSC
- ② Issues at MCI
- ③ MMC’s group governance system with respect to quality control, etc.
- ④ Other issues related to this Matter as determined to be necessary by the Committee

## 2) Committee Members

Chairperson Mariko Tokuno

MMC

Outside Director

Member	Hiroshi Watanabe	MMC		Outside Director
Member	Kazuaki Takenaka	Japan Association	Management	Executive Vice President
Member	Naoki Ono	MMC		Director, Executive Vice President
Member	Jun Nagano	MMC		General Manager, Legal Dept., Corporate Strategy Div.

### 3) Operational Guidelines

- ① MMC's Board of Directors granted the Committee authority for the purpose set forth in 1).
- ② When determined necessary in light of the Committee's Purpose, the Committee may expand the scope of the investigation set forth in 1); and, in addition, the Committee may engage experts when determined to be necessary.
- ③ In order to efficiently and effectively proceed with the investigation, the Committee will conduct the investigation by positioning the already established MSC Investigation Committee and MCI Investigation Committee under its supervision.
- ④ In order to achieve the purpose of the Committee, MMC's Board of Directors will have all executives, employees and other individuals belonging to the MMC group, including MMC, MSC and MCI, provide full cooperation to the Committee's investigation (including experts engaged by the Committee).
- ⑤ The Committee will submit reports to MMC's Board of Directors meetings attended by all of the outside directors. In addition to regular progress reports to MMC's Board of Directors, the Committee will submit a final report at the conclusion of the investigation.

### 3. Status of Activities

#### 1) Status of Committee Activities

December 4 (Monday)	3:30 PM to 5:35 PM	1 <sup>st</sup> Committee meeting
December 8 (Friday)	1:00 PM to 4:30 PM	Presentation on quality governance from MMC quality-related departments (Internal Audit Dept., Quality Management Dept., CSR Dept. of the General Affairs Dept.)
December 12 (Tuesday)	3:30 PM to 5:44 PM	2 <sup>nd</sup> Committee meeting
December 20 (Wednesday)	3:28 PM to 5:52 PM	3 <sup>rd</sup> Committee meeting
December 25 (Monday)	1:59 PM to 3:32 PM	4 <sup>th</sup> Committee meeting
December 26 (Tuesday)	10:13 AM to 11:20 AM	5 <sup>th</sup> Committee meeting

(Note) Aside from the activities listed above, the following inspections were conducted.

MCI Minoshima Works (December 9: Tokuno (Chairperson), Watanabe, Takenaka and Ono (Committee members))

MSC Wakamatsu Plant (December 11: Takenaka (Committee member); December 13: Watanabe (Committee member))

2) Appointment of the Chairperson

During the 1<sup>st</sup> Committee meeting, Committee Member Tokuno was elected as chairperson by the Committee from among its members.

4. Status of Investigation of the Issues at MSC

In order to efficiently and reasonably proceed with the investigation relating to MSC, the Committee conducted the investigation by positioning the MSC Investigation Committee, which was established by MSC on November 17, 2017, under the Committee's supervision as of December 1. The MSC Investigation Committee has entrusted outside counsel with its investigation.

1) Outline of the MSC Investigation Committee

① Date of establishment

November 17, 2017

② Committee members

Chairperson	Isao Iwano	Director & Vice President
Member	Masaji Sato	Corporate Auditor
Member	Katsuhiko Matsumoto	Corporate Auditor
Member	Takashi Shibuya	Attorney (Nishimura & Asahi)

③ Outside counsel

Nishimura & Asahi

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

① Investigate the facts relating to the details and the circumstances leading to the discovery of this Matter at the Wakamatsu Plant

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

③ Recommend preventive measures based on the analysis described in ② above

3) Investigation Report

The Committee received an investigation report dated December 27 from the MSC Investigation Committee ("**MSC's Investigation Report**") (Attachment 1).

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

In order to efficiently and reasonably proceed with the investigation relating to 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
Member	Hirokazu Kuzushita	Corporate Auditor
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 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) Interim Investigation Report

The Committee received an interim investigation report dated December 27 from the MCI Investigation Committee ("**MCI's Interim Report**") that mainly contains the facts relating to the Misconduct found as of December 22 (Attachment 2).

## 6. Current Opinions of the Committee

### 1) With respect to MSC

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

① Insufficient awareness of compliance with specifications

② Possibility that increased market share in late-entry businesses was prioritized over

considerations of whether MSC was able to produce the products

- ③ Simple reliance on the Misconduct that had been committed in the past
- ④ Avoidance of losses resulting from non-conformances in product inspections
- ⑤ Audit procedures being reduced to a formality

All of these points must be assessed as issues where basic elements of production operations were neglected. As a result, it must be said that the continued shipment of products that deviated from customer specifications was a betrayal of the trust that customers and other stakeholders placed in MSC and MSC's products.

The Misconduct was committed more or less openly at the Wakamatsu Plant over many years. With respect to this situation, it must be said that the successive generations of individuals in managerial positions who knew about the Misconduct and who were in a position to correct it, particularly the individuals who held the position of Quality Assurance Department General Manager at the Wakamatsu Plant during the period when the Misconduct was occurring, have substantial responsibility. The Committee believes it necessary to considerably punish the individuals who occupied these positions in the past and are currently still involved in management at MSC.

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

## 2) With respect to MCI

Since MCI's Interim Report contains very serious details, the Committee believes that the MCI Investigation Committee's final investigation report should incorporate a thorough investigation of the causes and preventive measures based on the results of such investigation.

The Committee will make all of its recommendations after receiving the final investigation report from the MCI Investigation Committee.

## 3) With respect to Restructuring Measures of the Governance Framework for Quality Control in the MMC Group

The Committee has received a report from MMC that the Board of Directors will make decisions in a meeting on December 28, 2017, on the quality governance restructuring measures ("**Restructuring Measures**") for the Mitsubishi Materials Group described in Attachment 3, which were formulated by the task force addressing the Mitsubishi Materials Group's quality issues and other matters<sup>(Note)</sup>, based on the reports by both companies' investigation committees and the Committee's discussions.

The Committee has determined that the Restructuring Measures are appropriate at this stage and that the Restructuring Measures should be implemented after working out the specifics as soon as possible.

(Note) Task force addressing the Mitsubishi Materials Group's quality issues and other matters

A task force established by resolution of the Corporate Strategy Committee on October 30, 2017 for addressing the Misconduct, re-investigation of quality issues and other incidents of compliance violations, and the issues discovered as a result of such re-investigation

Task force leader	Executive Vice President Ono
Deputy leaders	Senior Managing Executive Officer Suzuki, Senior Managing Executive Officer Shibano, Managing Executive Officer Shibata
Members	Corporate Strategy Dept. and Legal Dept. of Corporate Strategy Div. General Affairs Dept. and Internal Audit Dept. of General Administration Div. Quality Management Dept. of Technology Div.
Administrative office	Corporate Strategy Dept. of Corporate Strategy Div.

#### 7. Future Plans

After receiving the final investigation report from the MCI Investigation Committee, the Committee will submit a final report to MMC's Board of Directors with all of the Committee's final opinions.

END

Attachment 1

December 27, 2017

To: Mitsubishi Materials Corporation  
Special Investigation Committee

Mitsubishi Shindoh Co., Ltd.  
Isao Iwano  
Investigation Committee Chairman

(Report) Submission of Investigation Report

We requested Nishimura & Asahi to investigate and review the shipping of Non-Conforming Products by MSC's Wakamatsu Plant. We received the investigation report from Nishimura & Asahi today.

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

END



To: Investigation Committee of Mitsubishi Shindoh Co., Ltd.

December 27, 2017

**Investigation Report**  
(Shipping of Non-Conforming Products by the Wakamatsu Plant)

	Nishimura & Asahi
Attorney	Takashi Shibuya
Attorney	Ryutaro Nakayama
Attorney	Takako Misaki
Attorney	Jisuke Tomiya
Attorney	Yuto Takabayashi
Attorney	Jumpei Hotta
Attorney	Natsuki Hosoya
Attorney	Takahiro Miyazaki

This report is a report on the investigation (“**Investigation**”) that was performed by Nishimura & Asahi, commissioned by the Investigation Committee (“**MSC Investigation Committee**”) established by Mitsubishi Shindoh Co., Ltd. (“**MSC**”).

This report summarizes the results of conducting the investigation, review, etc. believed to be as appropriate as possible given the time and conditions afforded. However, there is a possibility that its conclusions, etc., will change if new facts, etc., are discovered going forward. Please also be aware that this report does not guarantee any decisions that may be made by the courts or other relevant authorities, etc.

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## **Section 1 Background leading to the Investigation and purpose of the Investigation**

On October 10, 2017, MSC initiated a voluntary internal review of MSC's quality assurance framework. As a result of this review, on October 16, MSC discovered that, for certain products produced and sold in the past by MSC's Wakamatsu Plant ("**Wakamatsu Plant**"), products had been shipped that deviated from specifications established with customers ("**Non-Conforming Products**") due to misconduct, including the rewriting of inspection records data ("**Misconduct**").

Based on a series of reports regarding the Misconduct received until October 18, 2017, the following day, on October 19, MSC's management reported to Mitsubishi Materials Corporation ("**MMC**"), MSC's parent company, that Misconduct had been found. On November 17, 2017, in light of the seriousness of the situation, MSC established the MSC Investigation Committee with the goal of investigating the underlying facts concerning the Misconduct, and identifying its causes and background circumstances. On November 23, MSC made a public announcement concerning the Misconduct.

The MSC Investigation Committee determined it necessary to perform a thorough investigation regarding the Misconduct from an objective and neutral viewpoint, and requested Nishimura & Asahi to investigate and review the matters set forth below.

- ① Investigate the underlying facts relating to the Misconduct at the Wakamatsu Plant<sup>1</sup>
- ② Investigate the underlying facts relating to the circumstances leading to the discovery of the Misconduct
- ③ Analyze the causes and background circumstances relating to the underlying facts that were discovered as a result of the investigations in ① and ② above.
- ④ Recommend measures to prevent recurrence based on the analysis in ③ above.

## **Section 2 Course of the Investigation**

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

Based on the background in Section 1 above, Nishimura & Asahi performed the investigations set forth in ① through ③ below.

- ① Detailed review and examination of relevant materials
- ② Digital forensic investigation of email data, etc., retained by relevant parties
- ③ Investigatory interviews of relevant parties

The Investigation was led by Attorney Takashi Shibuya and nine others from Nishimura & Asahi, who have no vested interest in MSC. Additionally, a professional forensic vendor was engaged to assist with the Investigation under the direction and supervision of Nishimura & Asahi.

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<sup>1</sup> During the course of the Investigation, one case of rewriting inspection records data was also found at MSC's Sambo Plant with respect to products produced and sold in the past. However, circumstances indicating that data had been rewritten were not seen on an organizational level at the Sambo Plant, and this case was recognized to be an isolated incident.

## **2 Detailed review and examination of relevant materials**

Nishimura & Asahi collected the materials that currently exist at MSC that potentially relate to the Misconduct (various procedures relating to quality control, inspection records, and materials from quality-related meetings, etc.), and performed a detailed examination and verification of their content.

## **3 Digital forensic investigation**

To the extent necessary and possible, Nishimura & Asahi secured email data stored on MSC's email server<sup>2</sup> for a total of ten MSC executives and employees potentially connected to the Misconduct. Due to the time constraints of the Investigation, Nishimura & Asahi determined to apply keyword searches to extract a reasonably limited scope of data. Thereafter, the forensic vendor mentioned in Section 1 above carried out a first-level data review of the data limited by using the aforementioned methods, and Nishimura & Asahi carried out a second-level data review.

## **4 Investigatory interviews**

In order to shed light on the underlying facts relating to the Misconduct, Nishimura & Asahi conducted investigatory interviews with a total of 46 executives and employees of MSC considered to be connected to quality control, etc., of products affected by the Misconduct. Furthermore, multiple investigatory interviews were conducted for some of the interview subjects.

## **5 Reference date for the Investigation**

The reference date for the report on this Investigation is December 22, 2017 (“**Reference Date**”). Accordingly, Section 3 and thereafter summarize the results of the Investigation that were found from November 17, 2017, when Nishimura & Asahi started the Investigation, until the Reference Date.

### **Section 3 Overview of the Wakamatsu Plant**

#### **1 The Wakamatsu Plant's business and selection of products**

The Wakamatsu Plant started operations in 1937 as a factory engaging in rolling of nonferrous metals, and is currently positioned as one of the plants associated with the Rolled Product Division of MSC, which oversees “matters relating to raw materials, production, technology, and products of copper and copper-alloy sheets, plates, and strips.”<sup>3</sup>

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<sup>2</sup> Some email data of executives and employees of MSC are stored on MMC's servers.

<sup>3</sup> In addition to the Wakamatsu Plant, the Sambo Plant is also a plant that is associated with the Rolled Product Division.

As a manufacturer of copper lead frames for semiconductors and terminal connectors for automobiles, the Wakamatsu Plant produces three types of products: “rolled copper products,”<sup>4</sup> “metallized film products”<sup>5</sup> and “contour strips”<sup>6</sup> (collectively, “**Rolled Copper and Other Products**”).

Among these products, as described in detail below, the Misconduct found was with respect to inspection records relating to “rolled copper products.”

## **2 The principal departments and segregation of operations, etc. at the Wakamatsu Plant**

### **(1) Production Department**

The Production Department oversees matters relating to production and management of rolled copper products (copper and copper-alloy sheets, plates and strips) and processed products.

The production processes managed within the Production Department are divided among five sections: the Casting & Hot-rolling Section, Rolling Section, Surface Treatment & Annealing Section, Slitting Section, and the Fabricated Products Section.

### **(2) Quality Assurance Department**

The Quality Assurance Department oversees matters relating to quality assurance and quality control. It handles matters relating to inspections and analysis of final products (“**Product Inspections**”) for quality assurance of products, etc., and matters relating to complaints regarding products, investigation and processing of returned products, etc.

The Quality Assurance Department is divided into the Quality Assurance Section and the Quality Control Section. Of these, the Quality Assurance Section conducts Product Inspections, etc. The Quality Assurance Section is divided into the Metals Inspection Team, which conducts Product Inspections, and the Analysis Team, which mainly performs composition analysis of products that are still being processed. The Quality Control Section conducts activities such as handling complaints from customers and managing specifications. The Quality Control Section is divided into the Metals Team (which handles complaints regarding rolled copper products, conducts operations relating to metal design such as managing specifications (the staff responsible for these

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<sup>4</sup> “Rolled copper products” collectively refers to products in which copper and copper alloys are processed into shapes, such as plates, strips, tubes, bars and wires. Because copper has relatively high electrical conductivity compared to other metals, rolled copper products are used in semiconductor parts, terminal connectors for automobiles, and other components.

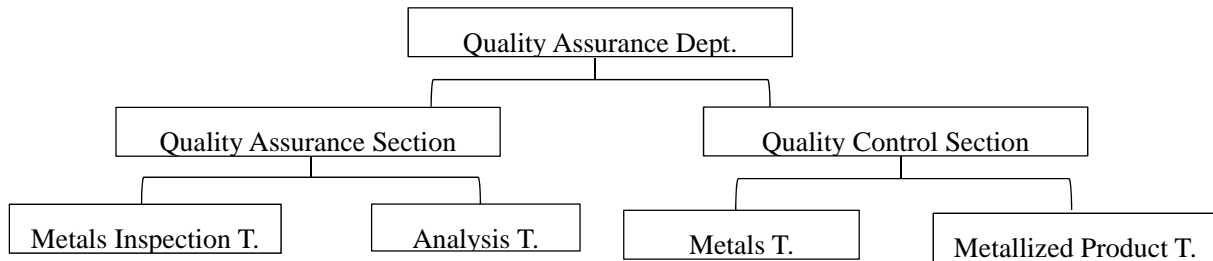
<sup>5</sup> “Metallized film products” refers to thin film that is several  $\mu\text{m}$  to several nm thick. By depositing a thin film on a base material, it is possible to impart electrical, optical, and mechanical characteristics on a material that does not originally have such characteristics. MSC produces electrical film for condensers, etc., and high-performance packaging film.

<sup>6</sup> “Contour strips” refers to irregular strips consisting of a thick portion and a thin portion, and they are used in lead frames for semiconductors (power transistors), terminals, connectors, and other components. At MSC, flat strips of rolled copper products undergo the production processes managed by the Rolling Section, Surface Treatment & Annealing Section, Slitting Section of the Production Department, and contour strips are produced when the Fabricated Products Section of the Production Department processes the flat strips further.

operations is referred to as the “**Design Staff**”), and conducts Product Inspections of contour strips), and the Metallized Film Product Team, which conducts activities such as handling complaints regarding metallized film products.

The segregation of operations in the Quality Assurance Department is set forth in the chart below.

<Chart: Segregation of Operations in the Quality Assurance Department>



### (3) Production Engineering Department

The Production Engineering Department oversees matters relating to production technology, equipment maintenance, and project initiation planning.

### (4) Production Control Department

The Production Control Department oversees matters relating to planning and coordination for production, sales, and inventory, formulating production plans, process management, delivery schedule management, outsourcing management, balancing between mass-production and order volume (adjusting supply and demand), and receipt of raw materials. The Production Control Department is divided into the Products Planning Section, which conducts activities such as production planning, and the Production Control Section, which conducts activities such as managing delivery schedules.

## 3 Operational flow from receipt of order to shipment of rolled copper products

### (1) Flow up to receipt of orders for rolled copper products

At MSC, a sales representative in the Sales Department of the Sales Headquarters engages in negotiations with customers. After receiving notification from a customer that the customer is placing an order for rolled copper products produced by the Wakamatsu Plant, or is considering placing such an order, the sales representative asks the Quality Control Section of the Quality Assurance Department at the Wakamatsu Plant to consider whether or not production is possible according to the specifications requested by the customer.

The Design Staff at the Quality Control Section conducts a review in the first instance of whether production is possible, while referring to data containing information relating to existing

specifications stored on the company’s internal systems (“**Specification Data**”). When necessary, the Design Staff asks the Production Engineering Department, the Production Department, the Production Control Department and other departments at the Wakamatsu Plant to also perform a review. Finally, based on approval from the General Manager of the Quality Assurance Department at the Wakamatsu Plant, a response is sent to the sales representative regarding whether production is possible. (See Section 5 Item 1 below for details.)

If a determination is made that production is possible at the Wakamatsu Plant, the sales representative negotiates with the customer, and if an agreement is reached regarding product specifications (including standard specifications), a specification form is exchanged.

When the order for the product is received, the Products Planning Section of the Production Control Department at the Wakamatsu Plant formulates a production plan based on an established delivery schedule, volume, and other conditions.

**(2) Flow from the start of production up to product shipment**

When the Production Control Section of the Production Control Department at the Wakamatsu Plant receives the raw materials based on the production plan, the production processes begin. The production processes are conducted by each section of the Production Department based on the production plan formulated by the Products Planning Section.

According to the general process flow, after the raw materials are melted and casted, the plate thickness is reduced by alternately repeating the processes of hot-rolling, annealing<sup>7</sup> and cold rolling,<sup>8</sup> and the plate is slit to the width designated by the customer.

The main operations managed by each section of the Production Department during the production process for rolled copper products are set forth below.<sup>9</sup>

Unit	Managed Process
Casting & Hot-rolling Section	Melting of raw materials, hot-rolling and surface cutting
Rolling Section	Cold rolling, tension leveler
Surface Treatment & Annealing Section	Plating, annealing, pickling, polishing, welding, degreasing
Slitting Section	Cutting and slitting

Internal company standards are established corresponding to the details of the process in each production process, and the operators in each section of the Production Department conduct inspections (“**Process Inspections**”) to check whether the product meets internal company standards. In Process Inspections, with respect to products that are determined to be unlikely to conform to the specifications once it becomes a finished product, scrapping or other treatment is

<sup>7</sup> Process during which the material is heated in a batch furnace and softened.

<sup>8</sup> Process during which the material softened by annealing is thinned using a rolling mill roll, etc.

<sup>9</sup> The Fabricated Products Section conducts processing after the slitter process for contour strips.



performed at an intermediate stage of the production process, without waiting for Product Inspection.

After the production process is complete, the product goes through the Product Inspections set forth in Item 4 below, and is then packaged, packed, and shipped.

#### **4 Product inspection flow for rolled copper products**

##### **(1) Overview of product inspection and personnel organization**

There are two main types of Product Inspections: “appearance and dimension inspections” (“**Appearance Inspections**”) that relate to the appearance, thickness, etc., of the product, and “inspections for mechanical and physical properties” (“**Material Inspections**”) that relate to the characteristics<sup>10</sup> of the product. Furthermore, within the Material Inspections, there are “ordinary inspections” and “special inspections.”<sup>11</sup> Which of the inspections within the Material Inspections are conducted depends on the specifications of the product.

Those who engage in product inspection of rolled copper products at the Wakamatsu Plant are all inspectors belonging to the Quality Assurance Department, Quality Assurance Section, Metals Inspection Team (“**Metals Inspection Team**”). At MSC, according to the internal company rules, those who are not appointed as inspectors after completing a certain process cannot engage in Product Inspections.<sup>12</sup> With respect to the special inspections, performing the tests takes a long time, and chemicals that are stored only in specific locations in the Wakamatsu Plant must be used. For those reasons, only certain inspectors<sup>13</sup> engage in special inspections.

There were a total of twelve inspectors in the Metals Inspection Team as of the time that the Investigation was conducted. The twelve inspectors are divided into four sub-teams with three inspectors per sub-team. The inspectors perform Product Inspections in three alternating shifts: morning, afternoon and evening (with one sub-team resting). When necessary, the unit leaders or other higher ranking members are engaged in Product Inspections.

##### **(2) Flow of Product Inspections**

###### **A Sampling and processing**

Product Inspections are performed by sampling from products for which the production process has been completed.

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<sup>10</sup> Specific examples are tensile strength, hardness, electrical conductivity, yield strength, etc.

<sup>11</sup> There are at most nine types of special inspections.

<sup>12</sup> In the Investigation, no facts were discovered indicating that those who had not been appointed as inspectors were performing inspections.

<sup>13</sup> As of the time that the Investigation was conducted, a majority of the special inspections were performed by the unit leaders of the Metals Inspection Team. Only certain inspections were performed by one inspector exclusively performing those inspections, who was not a unit leader.

The samples for Production Inspections are prepared according to the procedure set forth below. First, in the final stage of the production process, samples are taken for each master coil<sup>14</sup> for use in Appearance Inspections and Material Inspections. The samples used in Material Inspections are transferred to the inspection room where Material Inspections are performed (“**Material Inspection Room**”). Subsequently, the samples used in Material Inspections are processed into shapes appropriate for each inspection of the Material Inspections, and thereafter used in the Material Inspections.

## **B Issuance of Appearance and Dimension Inspection Charts and Material Test Reports**

As with Item A above, when sampling and processing have been completed, “Appearance and Dimension Inspection Charts,” which contain inspection items, specifications, and other information from Appearance Inspections, and “Material Test Reports,” which contain inspection items, specifications, and other information from Material Inspections, are issued.

“Appearance And Dimension Inspection Charts” are issued and distributed to the inspectors of the Metals Inspection Team after the operators of the Production Department take samples. “Material Test Reports” are issued after the inspectors who are stationed in the Material Inspection Room enter the necessary information into the system dedicated to Product Inspections at MSC (“**Inspection System**”).<sup>15</sup>

## **C Product Inspection implementation and Inspection System entry**

The inspectors perform Product Inspections for the inspection items listed in the “Appearance and Dimension Inspection Charts” and “Material Test Reports.” When the inspectors complete the Product Inspections, they hand-write the results in the “Appearance and Dimension Inspection Charts” and “Material Test Reports.”

If the results of Product Inspections conform to the specifications for all of the inspection items, the inspectors enter the results into the Inspection System. Specifically, with respect to results among the inspection items that can be quantified, the inspectors enter the values of the inspection results in the “Actual Values” field. By doing this, the values are automatically reflected in the “Report Values” field. On the other hand, with respect to results that cannot be quantified, the inspectors only enter whether the result passed or failed in the system.

Thereafter, the Inspection System is used to generate a blue inspection completion sheet<sup>16</sup> which shows that the product passed inspections, and the sheet is attached to the master coil. The product then proceeds to the packaging process.

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<sup>14</sup> For example, if three master coils are produced from one lot, each master coil is called “1 Master,” “2 Master,” “3 Master,” etc.

<sup>15</sup> The Material Test Reports contain the test items that are required according to the specifications for each product.

<sup>16</sup> When the product lot number is entered in the Inspection System, the sheet is generated with the necessary information printed on it.

## **D Issuance of test reports (mill sheets)**

If the results of the Production Inspections are passing, the administrative staff of the Quality Assurance Section issues a test report (mill sheet). The test report (mill sheet) contains the values that were entered into the “Report Values” field in the Inspection System.

### **(3) Proper operational flow when Non-Conforming Products are identified**

#### **A Preparation and submission of Corrective Action Forms for Non-Conforming Products**

If the results of Product Inspections do not conform to specifications with respect to any of the inspection items, the inspector uses the Inspection System to generate a red inspection completion sheet, which means that the product has failed the inspection, and attaches the sheet to the master coil. As a result, the product is set aside and does not proceed to the packaging process. In addition, the inspector enters only the inspection results that conformed to specifications into the Inspection System.

The inspector then enters the details of the non-conformance in a “corrective action/measures form for Non-Conforming Products (for Product Inspections)” (“**Corrective Action Form for Non-Conforming Products**”) and submits the form to the supervisor of the Metals Inspection Team (or a unit leader if the supervisor is absent).<sup>17 18</sup>

The supervisor (or unit leader) of the Metals Inspection Team checks the contents of the Corrective Action Form for Non-Conforming Products that he/she receives, stamps the approval field with his/her signature seal, and writes “Proxy” to indicate a proxy decision.<sup>19</sup>

#### **B Measures conducted for Non-Conforming Products**

The Section Managers of the Quality Assurance Department determine the details of the measures with regard to Non-Conforming Products that are written in the Corrective Action Forms for Non-Conforming Products.

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<sup>17</sup> At this time, if the non-conformance is discovered in Appearance Inspections, the inspector attaches a copy of the “Appearance and Dimension Inspection Chart” to the Corrective Action Form for Non-Conforming Products, and if the non-conformance is discovered in Material Inspections, the inspector attaches a copy of the “Material Test Report.”

<sup>18</sup> Even if the product fails the initial Product Inspections, some inspectors within the Metals Inspection Team re-conduct the inspections at their own discretion without immediately preparing a Corrective Action Form for Non-Conforming Products; and, if the product still did not conform to the specifications, they prepared and submitted a Corrective Action Form for Non-Conforming Products. Furthermore, when Corrective Action Forms for Non-Conforming Products were submitted to the supervisor (or unit leader) of the Metals Inspection Team, there were times when the supervisor (or unit leader) of the Metals Inspection Team, at his determination, instructed the inspector to first conduct additional inspection.

<sup>19</sup> At MSC, according to the internal company rules titled “Entry Form for Management of Metals/Non-Conformances” (or “Non-Conformance Management Rules” depending on the time period) (“**Non-Conformance Management Rules**”), which establish the flow for when non-conformances occur, those with decision-making authority are the Section Managers of the Quality Assurance Department. “Section Managers of the Quality Assurance Department” refers to Managers of the Quality Assurance Section and Managers of the Quality Control Section. All of those Section Managers are recognized as having decision-making authority.

First, “additional inspections” or “further additional inspections” are performed. If the product conforms to the specifications as a result, the product is determined to have passed inspections; the product moves to the same process as set forth in Items (2)C and D above, and shipment procedures are conducted.

On the other hand, if the product does not conform to the specifications even after “additional inspections” or “further additional inspections” are performed, the Section Managers of the Quality Assurance Department determine whether to scrap the product due to failing inspections, to proceed with shipment procedures after obtaining approval from the customer to ship the product as-is (“**Customer Concessions**”), or to submit a Corrective Action Form for Non-Conforming Products to the staff responsible for management at the Production Department while listing the occurrence of a non-conformance as the reason. Measures are conducted with regard to Non-Conforming Products according to decisions made by the Section Managers of the Quality Assurance Department.

#### **Section 4 Misconduct discovered as a result of the Investigation**

##### **1 Shipment of Non-Conforming Products and rewriting of inspection records data using a Point Table**

###### **(1) Circumstances of the conduct**

As described in Section 3 Item 4(3) above, if, in the Product Inspections process, a product was found to not conform with specifications, the inspector was to prepare a Corrective Action Form for Non-Conforming Products, and the Section Managers of the Quality Assurance Department, to whom the Corrective Action Form for Non-Conforming Products was submitted was to determine the processing to be conducted.

However, in the Metals Inspection Team, when products were found to not conform to specifications, inspection records data was routinely rewritten before preparing Corrective Action Forms for Non-Conforming Products after referring to a document entitled “Customer-Specific Inspection Point Table” (“**Point Table**”).

With respect to products for certain customers, the Point Table established the practice of special processing, stating that, for each specification, “when a deviation from specifications occurs in the Product Inspections, pass-fail determinations are to be made using the following special processing.” The Point Table established a procedure for each specification (after listing the customers using the specification if the same specification details were being used for multiple customers), such as “handling Non-Conforming Products according to the standard” when tensile strength does not conform to the specifications, while “round the report values to be within the specifications, and concession by the Metals Inspection Team of the Quality Assurance Department (Corrective Action Form for Non-Conforming Products/Measures not required)” when products deviated only from hardness specifications.

The Point Table was part of a document called the “Code Table,” which specifically categorized and compiled various notes, precautions, and other remarks for the process from product production to shipment. In addition to the Point Table, the “Code Table” also sets forth notes that relate to non-inspection processes, such as the use of pallets of heat treatment material in packaging. Code numbers and titles are attached to each of these notes and other remarks. The code numbers and titles are also recorded in the Specification Data, which resulted in linkages between the Specification Data and the Point Table. Therefore, with respect to specifications with a note for “rounding processing” on the Point Table (i.e., cases where rewriting the inspection records data so that the data conformed to the specifications was permitted), the fact that there were rules in the Point Table was registered in the Specification Data, and “There is an inspection point; strictly follow” was printed in the “Test Notes” field of “Material Test Reports.”

The inspectors did not use the Point Table in the initial Material Inspections, which were conducted normally. If, as a result of the tests, the specifications conformed to all of the inspection items, they moved on to procedures such as entering the inspection results into the Inspection System without using the Point Table.

However, if, as a result of the initial Material Inspections, the specifications did not conform to an inspection item, the inspectors checked if “There is an inspection point; strictly follow” was printed on the Material Test Report, referred to the Point Table if such a mark was present,<sup>20</sup> and followed the processes specified in the Point Table.

Specifically, if the Point Table specified “rounding processing” for items that did not conform with specifications, the inspectors entered the rewritten values along with the results of the initial Material Inspections in the “Material Test Reports” without performing additional inspections. In such cases, what specific values to enter to be within the specifications was left up to the discretion of the inspectors, but some inspectors have stated that they “used values that just barely met the specifications,” etc., and made statements to the effect that they used values that were just slightly above the specification minimum (or just slightly below the specification maximum).

In this way, the inspectors wrote both the values that were actually obtained as a result of the Material Inspections and the values that were rewritten to conform to the specifications in the “Material Test Reports,” and then entered the rewritten values into the Inspection System. Specifically, there was a page in the Inspection System for revising the “Report Values” that reflected the “actual measurement values” of the Mechanical Test results. On that page, the values that were rewritten to conform to the specifications were revised and entered as the “Report Values,” and “Concession” was selected in the “Pass/Fail Determination” field.<sup>21</sup>

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<sup>20</sup> A number of copies of the Point Table were available at the Material Inspection Room, and the inspectors could refer to it at any time.

<sup>21</sup> There are five options to select in the Pass/Fail Determination field: “Pass,” “Waivers,” “Defer,” “Fail” and “Defective.” The system was set up so that the inspectors were able make the selection themselves. The Inspection System for entries when the product passed inspections as described in Section 3 Item 4(2)C was set up so that the pass/fail determination was made automatically.

## **(2) Background of the creation of the Point Table and when the Misconduct began**

### **A Background of the creation of the Point Table**

According to the revision records of the Point Table, the Point Table already existed as of May 20, 1999. At the latest, the July 27, 2001 revision was found to contain notes to rewrite inspection records data when the results did not conform to the specifications.

The Point Table was documented by the Design Staff of the Quality Control Section based on a handwritten original created by then employees of the Quality Control Section, and was registered as part of the Code Table as described in Item (1) above.

After the Point Table began to be created, specifications that use the Point Table (“**Applicable Specifications**”) were added as they came in, and the number of Applicable Specifications (pages) increased. When adding Applicable Specifications to the Point Table, as when the Point Table was first created, the Design Staff of the Quality Control Section documented the handwritten originals created by the then employees of the Quality Control Section, and revision records were also created. In this way, the Design Staff simply created documentation from the handwritten originals created by other employees of the Quality Control Section. Additionally, the employees who were involved in considering the specific contents of the Point Table have already left MSC. The background of how the Point Table was created is therefore unknown.

Additionally, the Point Table was revised by overwriting a single master file. For that reason, unlike other internal company rules, older versions were not saved. However, according to the revision records, it has been confirmed that no Applicable Specifications (pages) have been added since the last revision on September 7, 2006.

With respect to Point Table’s Applicable Specifications, inspection records data that did not conform to the specifications were repeatedly rewritten, and when Applicable Specifications (pages) were added to the Point Table, it is possible that non-conformances were expected to occur to some extent for those specifications.

In addition, at least 80% of the Applicable Specifications were for products called Brass Products, and the others were metal alloy and other products. All of the products, unlike products developed independently by MSC, were general products that could also be produced by competitors.

### **B Additions of In-Scope Customers**

Even after Applicable Specifications (pages) were no longer being added to the Point Table, revisions citing specifications that were similar to the Applicable Specifications that added to the scope (“**In-Scope Customers**”) where the same Point Table would be applied continued up to June 29, 2017.

Relevant Customers were mainly added at the determination of the Design Staff of the Quality Control Section. In other words, as described in Section 5 Item 1(1) below, after receiving a “Request to Review the Possibility of Production: Response Form” from a sales representative, the

Design Staff checked whether there was a history of producing products of the same dimensions, etc. as the newly ordered product. At that time, the Design Staff also checked whether the customer that ordered the product of the same dimensions, etc. was an In-Scope Customer on the Point Table. If, as a result, the customer that ordered the product of the same dimensions, etc. was an In-Scope Customer, the Design Staff checked the relationship between that customer and the customer placing the new order. Then, if that customer and the customer placing the new order were customers with a mutually close relationship such as group companies, and if the required specifications, product applications, etc. were similar, the Design Staff proposed/requested that the Manager of the Quality Control Section add the customer placing the new order as an In-Scope Customer of the Point Table which included the customer that had previously ordered the product of the same dimensions, etc. Following this history of events, In-Scope Customers were ultimately added according to decisions by the Manager of the Quality Control Section

After the June 29, 2017 revision, there were 50 cases<sup>22</sup> registered as In-Scope Customers of the Point Table. However, there were cases where instructions were not deleted from the Point Table even when they became unnecessary, such as specifications for customers with no current transactions, or when negotiations with the customer had already resulted in the specifications matching the rules of the Point Table. From October 18, 2016 to October 17, 2017, there were fewer than ten customers for whom inspection records data were rewritten due to the Point Table actually being used.

### **(3) Awareness of individuals concerned**

When the Investigation was conducted, the inspectors of the Metals Inspection Team were aware that the Point Table existed. On the other hand, as described in Item (1) above, since the Point Table was part of the Code Table, in practice employees were rewriting inspection records data using the Point Table from the time they joined the company, so they thought of the Point Table as being “a given.” As a result, many employees made statements to the effect that awareness that this was misconduct was insufficient, with some even stating with regard to rewriting inspection records data using the Point Table that “our understanding was that there to was no issue, since we thought that this had been agreed upon with the customer.”

On the other hand, of the generations of experienced Department Manager/Section Manager class-employees of the Quality Assurance Department, there were more than a few who denied that they themselves were aware of the existence of the Point Table. However, given that the Point Table was registered as a part of the Code Table at the Wakamatsu Plant, multiple copies were available in the Material Inspection Room, and its existence was not particularly concealed, so at the very least, it is likely that the generations of Section Managers of the Quality Assurance Department who

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<sup>22</sup> The word “Customer” is used in the Point Table, and there are 50 registered customers. However, there are cases where the same company is registered as multiple customers at each plant. The 50 cases mentioned above include a number of cases where only the delivery route or specification was different, and the products were ultimately delivered to the same customer or the products took into account the specifications of the same customer.

administering product inspections could have noticed that inspection records data were being rewritten using the Point Table. Furthermore, among that generations of Section Managers of the Quality Assurance Department, there was one who admitted that he was aware of the existence of the Point Table, and stated “Sometimes I debated whether I should raise all products that did not conform with the specifications as Non-Conforming Products, without using the Point Table; I thought that if I didn’t do so, the Production Department and Engineering Production Department wouldn’t become aware of the issue, and there would be no improvement,” and “The supervisor was also reluctant to use the Point Table,” etc. In light of these facts, it can be acknowledged that there were more than a few employees in the Quality Assurance Department who viewed rewriting inspection records data using the Point Table to be a problem.

However, as described in Item (2)A above, the Point Table was revised by the Quality Control Section, and according to the distribution records of the revised versions that were created when revising the Code Table, the revised versions were only distributed to the Quality Assurance Section. Accordingly, we were unable to confirm whether there was awareness of the Point Table in units outside the Quality Assurance Department.

Furthermore, the existence of the Point Table was discovered because after an internal review was commenced on October 10, 2017, the Deputy General Manager of the Quality Assurance Department voluntarily reported it to the General Manager of the Quality Assurance Department at the Wakamatsu Plant between October 11 and 13, 2017. This was then reported to the MSC Head Office when the General Manager of the Quality Assurance Department of the Wakamatsu Plant reported to the Director and General Manager of the Technology Development Department of the Head Office on October 16; a series of reports was then given to the management of the Head Office until October 18. Accordingly, it can be acknowledged that the management of the MSC Head Office became aware of the existence of the Point Table on or after October 16, 2017.

## **2 Shipment of Non-Conforming Products and rewriting of inspection records data according to decisions by the Section Managers of the Quality Assurance Department, called “Internal Concessions”**

### **(1) Circumstances of the conduct**

Aside from the rewriting of inspection records data using the Point Table, based on the flow described in Section 3 Item 4(3) above, when the processing to be conducted for Non-Conforming Products were decided, processing was performed to rewrite inspection records data to conform with specifications without obtaining customer approval (“**Internal Concessions**”).

#### **A Discussions Following Morning Meetings**

In the Metals Inspection Team, as described in Section 3 Item 4(3) above, in cases where the



results of product inspections did not conform to the specifications for any of the inspection items,<sup>23</sup> the inspector would create a Corrective Action Form for Non-Conforming Products, and submit it to the supervisor (or unit leader) of the Metals Inspection Team.

If the supervisor (or unit leader) of the Metals Inspection Team approved the Corrective Action Form for Non-Conforming Products, the details of the non-conformance would be reported at the Morning Meeting conducted on the following day.

The Morning Meetings are meetings that are conducted in order to share information between each unit regarding the status of progress, etc. of each product being produced at the Wakamatsu Plant.<sup>24</sup> Morning Meetings are generally conducted every morning, with participation by the Plant Manager, etc. (the Plant Manager, the Deputy Plant Manager, and the Assistant to the Plant Manager) and management (officers at or above the section leader) from the Production Control Department, Production Department, Production Engineering Department, and Quality Assurance Department.<sup>25</sup> However, other employees were also allowed to freely attend the meetings,<sup>26</sup> and the Plant Manager, etc. and General Manager-level employees from the relevant units would not necessarily attend every morning.

At Morning Meetings, the supervisor (or unit leader) of the Metals Inspection Team would report on the details of Corrective Action Forms for Non-Conforming Products, but specific details on measures to be taken were not yet determined at that time.

After the Morning Meeting would conclude, some of the attendees, including the supervisor (or unit leader) of the Metals Inspection Team, would move to the Material Inspection Room, where discussions would be held regarding the measures to be taken for Non-Conforming Products, while reviewing the actual samples found to be non-conforming (discussions taking place in Material Inspection Room after the Morning Meetings are hereinafter called “**Discussions Following Morning Meetings**”).<sup>27</sup>

The attendees of the Discussions Following Morning Meetings varied based on the details of each non-conformance, etc., and were not necessarily fixed. However, up until April 2016, the General Manager of the Quality Assurance Department, Manager of the Quality Assurance

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<sup>23</sup> A Corrective Action Form for Non-Conforming Products is created in cases where the specifications are not set forth on the Point Table to begin with, or, if the specifications are set forth on the Point Table, in cases where a product does not conform with the specifications in regard to items for which “rounding processing” was not noted on the Point Table.

<sup>24</sup> The purpose of the Morning Meetings is to understand, on a daily basis, the status of production at the Wakamatsu Plant. Originally, Morning Meetings, etc. were conducted by each individual unit, and although it is unclear when Morning Meetings began to be conducted for the Wakamatsu Plant as a whole, there were multiple parties who stated that such meetings began to be conducted by executives of the time about ten years ago, if not earlier.

<sup>25</sup> In units where a section leader has not been appointed, the supervisor is the equivalent employee.

<sup>26</sup> Specifically, the Assistant Managers from the Analysis Team of the Quality Assurance Section and Metals Team of the Quality Control Section, the Senior Managers from the Production Department and Production Engineering Department, and the General Manager of the Safety & Environment Promotion Office would attend.

<sup>27</sup> There are many people in the Wakamatsu Plant who also refer to Discussions Following Morning Meetings as “Morning Meetings,” but in this report, Morning Meetings and discussions thereafter are distinguished for the sake of convenience.

Section,<sup>28</sup> and supervisor (or unit leader) of the Metals Inspection Team, etc. would attend from the Quality Assurance Department. However, after that same month, the Manager of the Quality Control Section,<sup>29</sup> and supervisor (or unit leader) of the Metals Inspection Team, etc. would attend. Employees at the Section Manager-level would also attend from the Production Department, Production Control Department, and Production Engineering Department.

Upon moving to the Material Inspection Room, the supervisor (or unit leader) of the Metals Inspection Team provide an explanation to the attendees regarding the items that did not conform to the specifications and the applications of the products in question, and would then show them past test data relating to specifications that were identical to the specifications that were not conformed to, as well as charts compiling distributions of such data. The attendees then discussed how to process the Non-Conforming Products based on those materials.<sup>30</sup>

The General/Section Manager-level employees of the Quality Assurance Department who had attended the Discussions Following Morning Meetings would ultimately make determinations regarding the content of the measures to take via discussions such as those described above, with the approval of the other attendees. The specific types of measures included disposal as scrap,<sup>31</sup> additional inspection, additional processing,<sup>32</sup> reprocessing,<sup>33</sup> concessions, etc., and the supervisor (or unit leader) of the Metals Inspection Team would enter a check mark on one of these items, which were listed in the “Inspection Determination” field of the Corrective Action Form for Non-Conforming Products, according to the content of the measures that had been determined.

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<sup>28</sup> There were times when this employee acted concurrently as the Deputy General Manager of the Quality Assurance Department.

<sup>29</sup> At the time of the Investigation, the Manager of the Quality Control Section was acting concurrently as the Deputy General Manager of the Quality Assurance Department.

<sup>30</sup> The past data was extracted from the Inspection System. At such times, the data extracted from the Inspection System was actual measurement values.

<sup>31</sup> This refers to scrapping.

<sup>32</sup> This means that when a product did not conform with the specifications, it would be reused in other products after performing additional processes, such as size changes, etc.

<sup>33</sup> This means that when a product did not conform with the specifications, it would be made to conform to the specifications of the originally planned product by performing additional processes to remove the non-conformities that had been discovered.

The main categories of concessions are as follows.<sup>34</sup>

“Inspection Determination”	Processing details
“Waive upon customer approval”	Obtained customer approval after issuing application for a concession, and waive (Customer Concessions).
“Waive upon approval by Inspection”	Cases other than the above.

Furthermore, a “Pass” field had not been provided in the “Inspection Determination” field of the Corrective Action Form for Non-Conforming Products to begin with. As a result, if, for example, a determination were made in Discussions Following Morning Meetings to perform additional inspection, and it was then confirmed as a result of the additional inspection that the product conformed with the specifications, then even though the product inspection resulted in a “Pass,” check marks were entered into the “Waive upon approval by Inspection” field due to the lack of this field.<sup>35</sup>

In addition, product inspections were performed not only for items with quantifiable results, but also for items whose results cannot be quantified, such as surface imperfections, etc. Many Corrective Action Forms for Non-Conforming Products were created for such non-conformities that had been discovered with items that had non-quantifiable results. It can be concluded, based on the Corrective Action Forms for Non-Conforming Products, that in many cases the content of measures to be taken for such non-conformities discovered for items with non-quantifiable results would be considered in Discussions Following Morning Meetings by comparing samples against samples demonstrating the acceptable limits, etc. In such cases, when decisions were made in Discussions Following Morning Meetings that there were no issues with shipping the products, they would then simply proceed to shipment procedures, without any rewriting of inspection records data. In such cases, although it is possible to interpret this as meaning that a judgment of “Pass” had been made

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<sup>34</sup> The “Inspection Determination” field contained the items “Waived upon customer approval” and “Waived upon approval by Inspection,” as well as an item called “Waived upon approval by Sales.” However, in the results of interviews with the parties concerned, with regard to under what circumstances processing would be conducted under this item, the results were that they did not know (except for one interviewee who stated that they had heard that this item was used when Sales representatives would approve shipments based on negotiations with the customer, in consideration of delivery deadlines, etc., for lots that ended up yielding smaller volumes than normal shipment volumes); on the other hand, Sales representatives stated that Sales representatives would never give instructions to ship Non-Conforming Products without obtaining customer approval. There were some Corrective Action Forms for Non-Conforming Products that had this item checked off, but in each case the determination details for non-quantifiable items had been communicated to the Sales representatives based on the results of Discussions Following Morning Meetings. In addition to these investigation results, as stated in Items (3) and (4) below, considering the fact that the Non-Conformance Management Rules specify that the Section Managers of the Quality Assurance Department are the parties who hold decision-making authority with respect to Internal Concessions, it is difficult to conclude that waivers based on approval by Sales representatives without customer approval (i.e., a different type of Internal Concessions from the “Internal Concessions based on the Discussions Following Morning Meetings” as described above) as suggested by the name of this item were conducted in practice.

<sup>35</sup> In cases where instructions were given in Discussions Following Morning Meetings to perform additional inspection, the original Corrective Action Form for Non-Conforming Products would be retained temporarily by the supervisor (or unit leader) of the Metals Inspection Team; and when processing details were later determined as a result of the additional inspection, it would be sent to the employees responsible for Management in the Production Department.

by the final Product Inspection, the item “Pass” itself had not been established on the Corrective Action Form for Non-Conforming Products to begin with, so in such cases, similarly to cases involving the rewriting of inspection records data, check marks were entered in the “Waived upon approval by Inspection” field.

In such a way, when determinations were made in Discussions Following Morning Meetings regarding the content of measures to be taken for Non-Conforming Products, the supervisor (or unit leader) of the Metals Inspection Team would hand-write the date of the determination regarding the measures, as well as content of measures themselves, onto a Corrective Action Form for Non-Conforming Products. For example, in the case of Customer Concessions, they would write “Customer Concessions approved on XX/XX;” in the case of scrapping, they would write “Rejected at Morning Meeting on XX/XX and scrapped;” furthermore, in the case of Internal Concessions, they would write “Internal Concessions at Morning Meeting on XX/XX,” etc.<sup>36</sup> The supervisor (or unit leader) of the Metals Inspection Team would then send the original Corrective Action Form for Non-Conforming Products to the employees responsible for Management in the Production Department, and copies would be circulated to the inspectors in charge of Product Inspections for the applicable Non-Conforming Products.

#### **B Processing flow for Internal Concessions**

The supervisor (or unit leader) of the Metals Inspection Team would circulate copies of the Corrective Action Form for Non-Conforming Products describing the relevant processing details to the inspectors, and the inspectors would then rewrite the figures in the “Material Test Reports” according to such processing details. At such times, the supervisor (or unit leader) of the Metals Inspection Team would sometimes give instructions to the inspectors orally regarding the specific post-rewriting numbers, but there were also times when no particular instructions were given beyond circulating the copies of the Corrective Action Form for Non-Conforming Products, and in such cases the inspectors would enter figures that conformed with the specifications into the Material Test Report at their own discretion.

The inspectors would subsequently enter the rewritten figures into the Inspection System; the method for doing so was the same as for cases where inspection records data was rewritten using the Point Table, as described in Item 1(1) above.

#### **(2) Criteria for deciding whether or not to make Internal Concessions**

Decisions regarding whether or not to make Internal Concessions were made after conversations during Discussions Following Morning Meetings, and although uniform decision-making criteria had not necessarily been established, consideration of whether or not Internal Concessions should be made were generally based on the degree of non-conformity,<sup>37</sup> and

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<sup>36</sup> “Internal Concessions” on the Corrective Action Form for Non-Conforming Products has multiple meanings as described in Item “A” above, but this instance refers only to rewriting inspection records data to appear within the specification values.

<sup>37</sup> Internal Concessions were never made in cases of significant non-conformity.

from the standpoints of whether the non-conformity was within the range of products that had been shipped in the past, (and in light of the final application of the Non-Conforming Product) whether the items considered important in terms of the product's application conformed to specifications, and whether the specifications that were not in conformance were considered important by the customer.

Furthermore, in cases where Internal Concessions were not approved in Discussions Following Morning Meetings and the determination was made to scrap, they would have to start over from the very beginning of the production process, which would lead to significant obstacles with regard to delivery deadlines. As a result, some employees have made statements to the effect that the Production Control Section (which manages delivery deadlines) and each sections of the Production Department (which would start production over in practice) would speak in favor of Internal Concessions even in cases where it could not necessarily be said that the extent of the non-conformity was minor.

### **(3) Decision-makers with respect to Internal Concessions**

According to the Non-Conformance Management Rules, the Section Managers of the Quality Assurance Department were the employees who held decision-making authority regarding processing details for Non-Conforming Products. Some employees with experience serving as Section Managers of the Quality Assurance Department have also made statements to the effect that they had made determinations regarding Internal Concessions at their own responsibility. However, in terms of the actual operations, Internal Concessions were always discussed in Discussions Following Morning Meetings, the processing details were determined by Section Managers of the Quality Assurance Department based on the results of the discussions, and it can be acknowledged that the real decision-makers for Internal Concessions were all of the attendees of the Discussions Following Morning Meetings.<sup>38</sup>

### **(4) When Internal Concessions were initiated**

It is not necessarily clear when Internal Concessions began to be made at the Wakamatsu Plant, and although some of the inspectors in the Metals Inspection Team have made statements to the effect that they think this was already being done in the 1990's, they went no further than stating that, before they realized it, Internal Concessions were being made. In addition, the inspectors who were performing Product Inspections at MSC prior to the 1990's have already retired, so no employees have testified regarding the circumstances of commencing Internal Concessions, and the period of when this began is unclear.

With regard to this point, the Non-Conformance Management Rules have been revised

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<sup>38</sup> On some Corrective Action Forms for Non-Conforming Products, "Internal Concessions" appears alongside the name of the General Manager of the Quality Assurance Department; this indicates that it was determined in the Discussions Following Morning Meetings to leave the decision to the sole discretion of the General Manager of the Quality Assurance Department, there is no change to the fact that the determination to conduct Internal Concessions was made with the approval of the participants in the discussions following Morning Meetings.

repeatedly since they were established in 1997, but the “Non-Conformance Management Rules (8th Edition)” as revised on May 22, 2001 already contained a provision to waive “when approval has been obtained from the customer or Inspection Section Manager,” and the Corrective Action Form for Non-Conforming Products from that time also contains the item “Waived upon approval by the Inspection Section” in the Inspection Determination [field]. The Non-Conformance Management Rules that were subsequently revised also contained a provision to waive “when approval has been obtained from the customer or the Section Manager of the Quality Control Group.” Moreover, the Non-Conformance Management Rules from before revisions on November 13, 2017 (as revised on August 12, 2014) contained a provision to waive “when approval has been obtained from the customer or a Section Managers of the Quality Assurance Department.”<sup>39</sup> Based on these Non-Conformance Management Rules, it is likely that Internal Concessions were being made since May 2001 or earlier.

Furthermore, although no clear records remain regarding when Discussions Following Morning Meetings were initiated, some employees have made statements to the effect that Internal Concessions were considered in the Material Inspection Room from before Morning Meetings began to be held, and that the Department and Section Managers of the Quality Assurance Department would hold discussions and make determinations regarding Internal Concessions. In addition, some employees have made statements to the effect that the General Manager and Section Managers of the Quality Assurance Department used to be the main attendees of the Discussions Following Morning Meetings, that the General Manager of the Production Department would participate occasionally, and that the relevant Section Managers of the Production Department, Production Control Department, and Production Engineering Department began to attend the meetings in August 2013, pursuant to instructions from the then Plant Manager, the Wakamatsu Plant.

#### **(5) Awareness of individuals concerned**

With regard to Internal Concessions, although there were some inspectors in the Metals Inspection Team who were aware, with respect to Product Inspections results, that determinations were being made to rewrite inspection records data through discussions, and that this was inappropriate, most have made statements to the effect that they were only doing so upon receiving instructions from the supervisor (or unit leader) of the Metals Inspection Team, and that they were either not aware that this constituted misconduct, or that they thought they had no choice so long as it was the direction of their superiors.

On the other hand, at the very least, it can be recognized that the generations of Managers and Section Managers of the Quality Assurance Department and other units, who were attending

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<sup>39</sup> According to a statement by a former General Manager of the Quality Assurance Department, with regard to the provision regarding the “Section Managers of the Quality Assurance Department,” Managers of the Quality Assurance Section had been excluded from this language in earlier versions of the provision, so it is possible that the purpose of this revision was to include such Managers of the Quality Assurance Section.

Discussions Following Morning Meetings and were themselves in a position to give instructions to make Internal Concessions to the supervisor (or unit leader) of the Metal Inspection Team, were aware that inspection records data that did not conform to specifications as a result of Product Inspections were rewritten to conform with specifications.

Indeed, some Department and Section Managers who had been attending Discussions Following Morning Meetings have made statements such as “Surface imperfections, etc. were being discussed at Discussions Following Morning Meetings,” “I didn’t know that determinations were being made to make Internal Concessions at Discussions Following Morning Meetings,” and “There were cases where decisions were made to make waivers, but I thought they were Customer Concessions,” etc. However, Corrective Action Forms for Non-Conforming Products for which Internal Concessions were made contain language stating “Morning Meeting on XX/XX; Internal Concessions” and show Mechanical Test result figures that actually did not conform to the specifications, and based on the fact that these Corrective Action Forms for Non-Conforming Products were later circulated to the Section Manager of the Production Department and the Manager of the Production Engineering Section of the Production Engineering Department, it can be acknowledged that, at the very least, the Section Managers in the Production Department and the Production Engineering Department who received those forms were aware of the facts of Internal Concessions.

Furthermore, the existence of Internal Concessions was discovered because after an internal review was commenced on October 10, 2017, the Deputy General Manager of the Quality Assurance Department voluntarily gave reported it to the General Manager of the Quality Assurance Department at the Wakamatsu Plant between October 11 and 13, 2017. It was then reported by the General Manager of the Quality Assurance Department to the Director and General Manager of the Technology Development Department at the Head Office on October 16, 2017.

### **3 Other rewriting of data in inspection records**

#### **(1) Circumstances of the conduct**

In addition to Sections 1 and 2 above, when test reports (mill sheets) were issued for certain products, inspection records data pertaining to chemical components of products (“**Component Values**”) were rewritten to conform to specifications.

A product’s Component Values are inspected as part of the Process Inspection for the “melting” process noted in Section 3 Item 3(2) above. Inspection of Component Values is different from other Process Inspections in that measurements cannot be performed outside the melted stage, so it is not conducted at the Product Inspection stage, and the results of inspections conducted as Process Inspections during the “melting” process are entered in the Inspection System as data underlying test reports (mill sheets).

To begin with, in the “melting” process, if the inspection results for the Component Values do not meet internal standards, the work of adding raw materials related to the insufficient components is to be repeated until the Component Values satisfied internal standards; only after

meeting internal standards is the process to move on to the following “casting” process.

On this point, the internal standards on Component Values are established for each product, not for each specification established with the customer; the same internal standards are used for the same product, even if the specifications are different. The relevant standards are established by the Casting & Hot-rolling Section; with regard to the setting of specifications with each customer, the specifications are set based on relevant internal standards.

However, with some customers, due to circumstances such as those described in Item (2) below, specifications that are more stringent than the internal standards were established for the Component Values, so exceptional cases occurred where the Component Values did not meet customer specifications even though they met the internal standards.

In those cases, at the stage of issuing test reports (mill sheets) as described in Section 3 Item 4(2)D above, the person performing the relevant issuance work, under the direction of a supervisor within the Quality Assurance Department, issued the test report (mill sheets) after rewriting the Component Values entered in the Inspection System to meet the specifications established with the customer.<sup>40</sup>

## **(2) Background and scope of rewriting Component Values**

As stated in Item (1) above, the specifications with each customer were originally to be established based on the internal standards of the Component Values, and they were also supposed to conform to the specifications with customers as long as they met the relevant internal standards. However, with some customers, due to requests for specifications with the same Component Values as other companies’ products that the customers had used previously, or due to changes in the specifications of the Component Values during correspondence with the customers after shipment, the specifications of the Component Values with those customers reached a state where values that were more stringent than the internal standards of MSC were established. Nevertheless, because the internal standards were not revised as these events occurred, it can be acknowledged that there were cases where products intended for these customers did not conform to the customer specifications even though they met the internal standards. It can be acknowledged that rewriting of the Component Values took place for the products for the subset of customers that set the specifications more stringently than the internal standards in this way.<sup>41</sup>

It is not necessarily clear when the rewriting of the Component Values began at Wakamatsu Plant, but the relevant party believe that it had already been taking place around 10 years ago.

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<sup>40</sup> According to the results of interviews of related personnel, people giving directions were in Department Manager/Section Manager class of the Quality Assurance Department. However, for the rewriting of the same component with the same customer, they would not ask for supervisor instructions in each instance, and only verbal reports were made on occasion.

<sup>41</sup> The inspection records from January of 2016 to December 20, 2017 also do not show rewriting of the Component Values for reasons other than the above circumstances.



## Section 5           Circumstances leading to the Misconduct

### 1           Status of review regarding whether production is possible when receiving orders

#### (1)       Review of process capability by the Quality Control Section of the Quality Assurance Department

At MSC, the Sales Department of the MSC Head Office Sales Headquarters is collectively responsible for sales functions, including for products produced at Wakamatsu Plant. As described in Section 3 Item 3(1) above, upon receiving a new order from a customer for a product to be produced at the Wakamatsu Plant, a sales representative draws up a “Request to Review the Possibility of Production: Response Form” (where the result of whether or not production is possible is undetermined), which states the specifications of the product, and sends it to the Design Staff via e-mail.

Upon receipt of the “Request to Review the Possibility of Production: Response Form” (where the result of whether or not production is possible is undetermined), the Design Staff reviews the process capability<sup>42</sup> of the Wakamatsu Plant with respect to the specifications of those products. The Design Staff first confirms whether the customer’s required specifications are within the internal standard specifications (“**MS Specifications**,” according to how they are called within the company). MS Specifications define the standard patterns of mechanical characteristics corresponding to materials and temper symbols (symbols defining hardness, tensile strength, etc.) that are considered standard internally, and mechanical characteristics are defined with a certain range for every specific material and temper symbol. Also, the Design Staff confirms whether products with similar material, shape, temper symbols, thickness, width, etc. (hereafter collectively referred to as “**Dimensions, etc.**”) to the newly ordered products had been produced in the past. In cases where the customer’s required specifications are within the MS Specifications, and products with the same Dimensions, etc. as the newly ordered products had been produced in the past (including those for other companies), the Design Staff determines that “production is possible,” and sends a “Request to Review the Possibility of Production: Response Form,” to the Sales Department, with a determined result of whether production is possible.

On the other hand, in cases of products where the customer’s required specifications do not fall within MS Specifications, or of products with Dimensions, etc. that have no prior production record even if the required specifications fall within MS Specifications, the Design Staff drafts and circulates a “Request to Review the Possibility of Production” to request review by the departments in charge of reviewing whether production is possible, namely the Production Engineering Department, Logistics / Supplies Group of the Materials Management Department, Production

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<sup>42</sup> Process capability refers to the ability to produce products at established specification limits (within the tolerance range); low process capability means that it is easy to produce Non-Conforming Products that are outside the specifications (product yield is poor).

Control Department, Production Department, and Quality Assurance Department. For general products such as brass products, the customer side already has a record of use from other companies' products, etc., and in many cases, already has the product specifications based on such records. In addition, when used for terminal connectors for automobiles, etc., there are many cases where stringent specifications are established based on their applications, and they often do not fall within MS Specifications.

When drafting a "Request to Review the Possibility of Production," after having reviewed the mechanical characteristics (recorded values) of products produced and sold in the past with similar or the same Dimensions, etc., the Design Staff also drafts materials, etc. ("**Past Record Materials**") that explain the relationship between the past records and the specifications of the newly ordered products, and circulates them together.

In the process of drafting Past Record Materials and the "Request to Review the Possibility of Production," if the customer's requested specifications clearly deviate from the Wakamatsu Plant's process capability, the Design Staff sometimes communicates this to the Sales Department at this stage, and requests negotiations with the customer. If there are changes to the customer's requested specifications as a result of the negotiations with the customer by the sales representative, the Design Staff drafts a new "Request to Review the Possibility of Production" based on the changed required specifications.

## **(2) Consideration of whether production is possible by reviewing**

The "Request to Review the Possibility of Production" is first circulated to the Production Engineering Section of the Production Engineering Department, and the results of consideration that take into account various factors such as production process, production conditions, production costs, etc. are entered on the form. Other reviewing departments each consider whether production is possible premised on the review results of the Production Engineering Section. Although it is rare for other reviewing departments to object to the review results of the Production Engineering Section, the Production Department sometimes states opinions based on the possibility of mass production and actual production operations. In addition, with regard to newly ordered products, although the Quality Assurance Department is in a position to determine whether to undergo a quality review process called "Initial Product Management" after production starts, when the Production Engineering Department and Production Department have determined that production is possible, it is extremely rare for objections to be made against that determination itself.

In this way, each reviewing department considers whether production is possible, enters the review results, and the "Request to Review the Possibility of Production" is returned to the Design Staff. Upon receiving this, based on the reviewing departments' consideration results on the "Request to Review the Possibility of Production," the Design Staff receives approval from the General Manager of the Quality Assurance Department, and enters the result of whether production is possible into the Determination field of the "Request to Review the Possibility of Production:

Response Form.” At such times, there have been cases where the reviewing departments determined that production was possible, despite there being specifications for which, in the eyes of the Design Staff, production is difficult from the compared to past production results. In such cases, the Design Staff mainly made direct inquiries to responsible personnel and Section Managers of the Production Engineering Department to confirm whether production was really possible even with such specifications, but in cases where the response was that production was possible even according to such confirmation, the determination result of whether production was possible were entered on the “Request to Review the Possibility of Production: Response Form” based on that response. The Design Staff would then send the “Request to Review the Possibility of Production” and the “Request to Review the Possibility of Production: Response Form” containing the results of consideration by each reviewing department to the Sales Department. The Sales Department, based on the content of the aforementioned response forms, would then continue negotiations with the customer.

### **(3) Factors considered when determining whether to accept orders**

During the considerations described in Item (2) above, even when MSC sometimes accepts orders of newly ordered products in consideration of various other factors, even when its process capability is low with respect to the specifications of the such products. For example, if process capability is low for a certain newly ordered product, and it is anticipated that even consulting the customer will not result in loosening the specifications, the reviewing departments take production costs, order pricing, etc. into consideration in the process of determining whether production is possible, and consider whether it would be profitable to produce the such products, even if some Non-Conforming Products are produced. On that basis, if it is determined to be profitable, the reviewing departments would sometimes determine that “production is possible.”

In recent years, in cases where process capability was low, it seems that a certain amount would first be mass produced without clearly stating a “not possible” production possibility response and without determining each of the specifications in advance based on the specification form, and then requests were made to officially establish the specifications based on the performance, etc. of those mass-produced products. However, in the 1990s, MSC looked to expand its product sales of terminal connectors for automobiles,<sup>43</sup> but since production of these products began at a later date compared to competitors, some employees have made statements to the effect that they believe that MSC had a tendency to accept orders even if the specifications were stringent.

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<sup>43</sup> The Wakamatsu Plant began production of products used in terminal connectors for automobiles starting around 1989, but this was a late entry compared to competitors. Products used in terminal connectors for automobiles were products with high value added and profitability compared to products called “electronics materials” that had historically been produced at the Wakamatsu Plant. For that reason, after that year, the Wakamatsu Plant adopted a policy aiming to increase the number of orders received for products used in terminal connectors for automobiles.

## **2 Establishment, revision, and abolishment of internal rules, etc. concerning implementation of inspections**

### **(1) Establishment and revision of Non-Conformance Management Rules**

As described in Section 3 Item 4(3) above, procedures for when Non-Conforming Products are produced at the Wakamatsu Plant are set forth in the Non-Conformance Management Rules. These rules were established in 1997, but the first edition of the rules do not currently exist at the Wakamatsu Plant, and the content of the first edition of the rules and background of their establishment are unknown.

The supervisor of standards at the Quality Control Section oversees revisions to the Non-Conformance Management Rules; that person considers the details of the revisions, and the General Manager of the Quality Assurance Department makes the final decision.<sup>44</sup> The Non-Conformance Management Rules, as detailed in Item 4 below, were also presented during audits by customers and certifying institutions. Revisions to the Non-Conformance Management Rules have almost always been performed when some form of guidance has been received via such audits, and they were performed according to such guidance; in other words, unless guidance was received from the customers and/or certifying institutions, no changes in particular were made to the content of the rules.

### **(2) Creation and revision of the Point Table**

As mentioned in Section 4 Item 1(2) above, the Point Table already existed as of May 20, 1999 according to the record of revisions, and by July 27, 2001 at the latest, it stated that “rounding processing” was permitted if measurement values did not conform to the standards. After that, although the number of specifications has not increased since September 7, 2006, revisions to include In-Scope Customers in the Point List took place until June 29, 2017.

Additions of In-Scope Customers took place based primarily according to decisions by the Design Staff, but ultimately, the In-Scope Customers were added upon receiving the approval of the Manager of the Quality Assurance Section.

## **3 Considerations and requests relating to specification changes**

### **(1) Considerations concerning process changes**

In the course of receiving orders for and mass-producing a certain product, if the required specifications of the product are stringent and the percentage of Non-Conforming Products being produced is high, the Production Engineering Section and Production Department of the

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<sup>44</sup> However, in recent years, since it has not been long since the Manager of the Quality Assurance Department assumed his position, the revisions took place according to decisions by the Manager of the Quality Control Section, who was also acting concurrently as the Deputy General Manager of the Quality Assurance Department.

Wakamatsu Plant play a central role in considering measures for improvement, and changes to the process and production requirements are considered as necessary.

In such cases, a “Process Change Application” is first submitted from on-site<sup>45</sup> to the Quality Control Section. The application is reviewed by the Production Department, Production Control Department, Production Engineering Department, and Quality Assurance Department, and approval is ultimately given by the General Manager of the Quality Assurance Department.

Whether or not customer approval for the process change is needed is determined based on the details of the process change; if there are changes to the processes listed in the process chart (QC Process Chart) submitted to the customer, then both internal approval and customer approval are required. For example, customer approval is required when changing production equipment or the order of processes, but since detailed production requirements are not listed in the QC Process Chart, customer approval is not required when making slight changes to the production conditions.

## **(2) Requests to change specifications after orders are accepted**

As described in Item 1(1) above, at the stage of reviewing whether production is possible, if it is deemed that the process capability is low with respect to the customer’s required specifications such that they cannot be met, a sales representative from the Sales Department engages in further negotiations with the customer to change the specifications.

Also, if, during mass production after having accepted an order, the percentage Non-Conforming Products being produced is high, and it cannot be resolved even with on-site improvements such as process changes, etc. such as those described in Item (1) above, there are cases where the sales representative or the Quality Control Section makes a request to the customer to change the specifications in the form of a “Specification Form Revision.”

The sales representative requests the specification changes to the customer, and if the customer agrees to the specification changes as a result of negotiations where the need to make such changes was conveyed, then the specifications are revised.

Of course, when a request is made to change the specifications, it is up to the customer to decide whether to agree to it, and responses vary depending on the customer and the details of the relevant specifications. For example, for specifications of electrical conductivity, etc., there were cases where specifications were changed via negotiations with the customer, but there were also cases where the customer did not agree to specification changes no matter how many times requests were made. Also, in around 2000, MSC made simultaneous requests to customers for changes to specifications in conjunction with changes to JIS standards.<sup>46</sup> However, most customers did not accept these specification changes, citing reason such as increases in the number of man-hours required for negotiations with the customers’ counterparties, and increases in the number of man-hours required to change processing ratios at the customers’ processing plants.

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<sup>45</sup> The organizational unit for submitting a “Process Change Application” is not limited, and any organizational unit can apply.

<sup>46</sup> Refers to changes that made Product Inspections of both “tensile strength” and “hardness” unnecessary, and “hardness,” permitted that it be a reference value.

### **(3) The relationship between specification changes and the addition of Applicable Specifications to the Point Table**

As discussed in Section 4 Item 1(2) above, Applicable Specifications in the Point Table have not been added since the last revision on September 7, 2006, and because employees who are thought to have made the decisions to add Applicable Specifications have already retired, it is not clear what kind of judgments the Applicable Specifications were added under.

However, as noted in Section 4 Item 1(2) above, the products involving Applicable Specifications were all general products that could also be produced by competitors, and as mentioned in Item (2) above. MSC made simultaneous requests to customers for changes to specifications in conjunction with changes to JIS standards, but most of these were not approved. In 1999, there were only two Applicable Specifications (pages), but that six Applicable Specifications (pages) were added in 2001 after the simultaneous request for specification changes to customers as described above, four Applicable Specifications (pages) in 2002 and three Applicable Specifications (pages) in 2003 were then added in sequence, and after that, only one Applicable Specification (page) was added in 2005 and 2006 respectively. Based on the foregoing, it is possible that MSC decided to handle the refusal of customers to accept the specification change requests by adding Applicable Specifications to the Point Table and rewriting inspection records data to be within the specifications.

## **4 Response to audits and status of implementation of internal audits**

### **(1) Status of response to audits**

In addition to the internal audits described in Item (2) below, Product Inspection by the Quality Assurance Section is subject to audits by MMC, outside certifying institutions and customers, but there is no evidence that the rewriting of inspection records data was identified during the course of any such audit.

Of these audits, the status of implementation of internal audit is as described in Item (2) below.

### **(2) Status of implementation of internal audits, etc.**

Three types of internal audits exist as follows.

- Audits by the Internal Auditing Office of the Head Office
- Audits by corporate auditors

- ISO-related audits by the MS Promotion Office (“**MS Promotion Office**”)<sup>47</sup> of the Wakamatsu Plant

The Quality Assurance Section responds directly to these internal audits. However, in audits by the Internal Auditing Office of the Head Office and audits by corporate auditors, there were never any requests to present samples of completed Corrective Action Forms for Non-Conforming Products or “Material Test Reports,” nor was there ever a request to present the Point Table, so they were never presented.

For ISO-related audits by the MS Promotion Office, samples of completed Corrective Action Forms for Non-Conforming Products and “Material Test Reports” were also subject to the audits. However, extraction of specific samples was entrusted to the Quality Assurance Section, and auditors from the MS Promotion Department never reviewed whether any rewriting of inspection records data or Internal Concessions occurred during the audits. Additionally, the Non-Conformance Management Rules were subject to audits, but no particular findings were ever made about the fact that waivers were permitted according to decisions made by the Section Managers of the Quality Assurance Department alone.

## **Section 6 Causes and background circumstances of the Misconduct**

As mentioned in Section 4 Item 1(2) above, given that the Point Table can be recognized as existing by May 20, 1999, then it should also be understood that the Misconduct had started by the same period at the latest. In this sense, in the context of the Misconduct having been committed across many years, and considering the background, etc. described in Section 5, the following circumstances can be acknowledged.

### **1 Insufficient awareness of compliance with specification forms**

As mentioned in Section 4 Item 1 above, the Point Table set forth, for example, new standards that differed from customer specification forms prioritizing compliance with some specifications such as tensile strength, etc., allowed rewriting of the inspection records data when only hardness did not conform to the specifications, while on the other hand, when requiring that a Corrective Action Form for Non-Conforming Products would be created when only tensile strength did not conform to specifications, etc. Also, in Discussions Following Morning Meetings described in Section 4 Item 2 above, after confirming the inspection items that did not conform to specifications and the applications of the relevant Non-Conforming Products, etc., determinations were made regarding which items and applications rewriting of values were to be permitted for.

At first glance, such determinations may be viewed as giving consideration to avoiding hindering the performance of the relevant products based on deep knowledge and experience regarding those products, but in fact, they stopped feeling any resistance to changing specifications

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<sup>47</sup> Specifically, audits are performed in accordance with “ISO9001” requirements obtained by Mitsubishi Shindoh on a company-wide basis.

based on the specification forms originally agreed upon with customers, based solely on one's own judgment; it is thus recognized that awareness of compliance with the customer specification forms itself was insufficient.

This can only be assessed as meaning that the Wakamatsu Plant itself, based on its rich skill and experience as a manufacturer of Rolled Copper and Other Products, considered its own judgments to be correct rather than its agreements with customers, and legitimized this. One of the MSC managements have reflected on this point, stating that there was "arrogance" among MSC.

## **2 The possibility that increasing share in late-entry business was prioritized over whether production was possible**

As discussed in Section 5 Item 1(1) above, MSC had previously established internal specifications that could be met called MS Specifications, taking into consideration process capability, etc. As noted in Section 5 Item 1(1) above, when orders for new products were received, it would first be confirmed whether or not those products fell within MS Specifications. However, even if they fell outside these specifications, whether production was possible at the Wakamatsu Plant was considered separately, and procedures were established to make it possible to accept orders with specifications that could be produced. For example, if production was difficult due to low process capability, this was communicated to the sales representative who would make a request for change in specifications to the customer.

However, around the 1990s, MSC began production of products used in terminal connectors for automobiles at a later date than its competitors, and in aiming to increase the number of orders received, it is possible that MSC tried to forcibly meet specifications requested by individual customers that exceeded MS Specifications. To begin with, in the case of products used in terminal connectors for automobiles, etc., there are many cases where stringent specifications are stipulated based on the applications of those products. It is possible that the fact that MSC accepted orders even when it was unreasonable to do so, despite there being more than a few cases where the specifications did not fall within the MS Specifications, generated a large number of products that did not conform to the specifications, and that this led to the Misconduct.

It cannot be denied that such unreasonable acceptances of orders when initiating new transactions, even in the subsequent stage of mass production, may have led to Applicable Specifications being added to the Point Table one after another, when customers did not accept requests to change the specifications.

## **3 Easily relying on Misconduct committed in the past**

As mentioned in Section 5 Item 3(3) above, after MSC made requests to customers to change specifications in conjunction with changes to JIS standards (which were rejected), it is highly likely that many Applicable Specifications (pages) were added to the Point Table, which had already been created. In addition, even after they stopped adding Applicable Specifications (pages), In-Scope Customers were easily added without further review of the appropriateness of doing so, citing reasons such as that the specifications were the same



Such determinations, under the reasons that “this had been done for a long time” and “we haven’t received any complaints in particular so far,” easily permitted the continuation of the Misconduct, and are recognized to have led to an expansion in the Misconduct. In this way, the fact that the Misconduct had continued citing reasons that there were actual examples in the past and that no problems had occurred, seems consistent with the fact that with regard to the establishment, revision, or abolition of internal rules, proactive review did not take place unless MSC received external guidance, as described in Section 5 Item 2 above.

As a result, it is possible that MSC had also lost opportunities for improving their own process capability that are necessary for reducing Non-Conforming Products. In other words, for some Product Inspection items for predetermined specifications, the Point Table permitted rewriting inspection records data so that they would conform to the specifications without creating Corrective Action Forms for Non-Conforming Products. When a Corrective Action Form for Non-Conforming Products is created, separate from determinations regarding Internal Concessions, the details of the non-conformance are disseminated to a large number of relevant employees at Morning Meetings, and the Corrective Action Form for Non-Conforming Products is circulated to each relevant section of the Production Department, who then consider improvement measures to prevent reoccurrence. However, when inspection records data were rewritten to conform to specifications using the Point Table, each individual occurrence of non-conformity that should trigger improvements were not conveyed to the relevant sections of the Production Department, so it can be acknowledged that improvement measures to prevent reoccurrence were not considered.

#### **4 Avoiding losses due to Non-Conformances in Product Inspections**

As mentioned in Section 4 Item 2(2) above, it is possible that Internal Concessions were selected more often at Discussions Following Morning Meetings due to a sense of resistance to scrapping.

To begin with, Product Inspection should be performed at the stage when a product has been completed; if the product fails the inspection at that time, this may lead to the production processes that have been carefully carried out before then, while performing Process Inspections, being for naught.

Moreover, for rolled copper products, which were subject to the Misconduct, the scale of each individual product is large compared to contour strips, etc., so if they fail any given Product Inspection, all of the master coils need to be scrapped, and there is a large loss. For that reason, it is highly likely that there was a sense of resistance to making decisions to scrap that would create such losses. In fact, some employees have made statements to the effect that there were times when Section Managers of the Production Department, who were in charge of the production processes, expressed a desire for Internal Concessions to be made at Discussions Following Morning Meetings. Also, among the employees who were in charge of Product Inspections of contour strips, there are some who have stated that, in the case of contour strips, the scale of the product was small, and the sense of resistance to scrapping was also weak.

## **5 Loss of substance of audit procedures**

As mentioned in Section 5 Item 4 above, Product Inspections by the Quality Assurance Section were subject to multiple audits. Nevertheless, no evidence of has been discovered suggesting that the rewriting of inspection records data was ever identified.

In this regard, as mentioned in Section 4 Item 2(4) above, it is clearly stated in the Non-Conformance Management Rules that products can be shipped while they are in a non-conforming state “if approval has been obtained from the customer or the Section Managers of the Quality Assurance Department.” Since the Point Table was registered in the Specification Data as a part of the Code Table, and multiple copies were available in the Material Inspection Room, its existence was not particularly concealed. In addition, with regard to determinations for Internal Concessions in Discussions Following Morning Meetings, there were entries on Corrective Action Forms for Non-Conforming Products stating “XX/XX Morning Meeting; Internal Concessions,” etc., so the fact that such determinations were made was also not particularly concealed.

It can be acknowledged that if internal audits had carefully examined the contents of rules, including the Code Table, or had reviewed individual Corrective Action Forms for Non-Conforming Products, it is highly likely that the Misconduct could have been discovered; it is thought that the audit procedures conducted heretofore have been reduced to formalities, and have not served as a substantial checking function. Furthermore, although no facts have been confirmed that demonstrate any clear attempts at concealment in responding to the audits, the fact that preparations to respond to the audits (such as extracting samples of completed Corrective Action Forms for Non-Conforming Products and “Material Test Reports,” etc.) were delegated to the units being audited is thought to be one of the factors that delayed the discovery of the Misconduct.

## **Section 7 Measures to prevent recurrence**

### **1 Ensuring thorough awareness throughout the company regarding honoring agreements with customers**

Behind the occurrence of the Misconduct lies the fact that “shipping products while maintaining the performance considered necessary for rolled copper products” was prioritized, and that the most fundamental concept for a company, namely “honoring agreements with customers”, was neglected.

All transactions are based on trust in the counterparty to keep their promises and being trusted as a counterparty, and the idea that a company “must keep promises (specifications) agreed upon with customers” is obviously a key issue not just for the Wakamatsu Plant, but for MSC as a whole.

In order to make each of the measures to prevent recurrence described below effective, all employees of MSC must first of all thoroughly ensure again that they have basic awareness of the need to “honor agreements with customers.”

## **2 Guaranteeing the system for accepting orders based on process capability, and timely discussions of revisions to specifications**

For MSC, if orders to produce products with certain specifications is accepted, it is essential to guarantee a system that is able to continuously produce such products. A system of unreasonably accepting orders that exceed the company's own process capability can result in increased losses that exceed sales such as significant decreases in yield, etc. In order to be able to reliably produce and deliver the products desired by customers, it is necessary to accurately ascertain one's own process capability, and to make sure that there is a corresponding system for receiving.

Furthermore, even when an order has already been accepted, in cases where it is discovered that the system for receiving orders cannot be guaranteed based on one's process capability due to various factors such as changes in the external environment, etc., or in cases where the possibility of such is discovered, the situation should be calmly and swiftly understood, and one should not hesitate to conduct discussions with customers regarding any necessary revisions to specifications. In order for the Wakamatsu Plant to be able to propose revisions that are persuasive in both technical and business terms without making excuses regarding differences in negotiating power with the customer, etc., the framework for having the Head Office provide support for such matters as necessary should be strengthened.

## **3 Promoting compliance and quality assurance education for the relevant staff**

As described in Section 4 Item 1(3), many on-site inspectors thought of the Point Table as being "a given," and it can be acknowledged that their awareness that Internal Concessions constituted misconduct was insufficient. It certainly cannot be denied that due to misconduct becoming routine in this way, the sense of resistance against following such practices was diminished. However, it is also a fact that, because they deviated from specification values, for figures actually measured using certain inspection methods, the report values were rewritten so that they would conform to specifications, and that products that should have been treated as non-conforming were thus able to be shipped. If there was insufficient awareness while committing such actions that they were inappropriate, then that fact alone should be considered evidence that compliance and quality assurance education was insufficient at MSC.

MSC requires employees involved in Product Inspections to possess a certain level of skill and ability that are necessary for inspections, and has conducted stringent annual appointment procedures, such as internal testing to determine whether inspectors should be appointed or retained. However, as an even bigger issue than skill or ability, it must be stated that compliance awareness was insufficient regarding a fundamental aspect of quality assurance, namely of the need to guarantee that products conform to established specifications, in that inspectors had no misgivings regarding the Misconduct because they considered it to be "a given," or "instruction by the supervisor (or unit leader) of the Metals Inspection Team."

Going forward, effective and appropriate compliance and quality assurance education must be implemented, including revisions to the content of the appointment procedures themselves, and

inspectors involved in Product Inspections must be made to cultivate strong self-awareness and pride in their work as a final backstop, so to speak, prior to shipment.

#### **4 Introduction of an inspection and data entry system that does not allow for interference due to human manipulation**

As described in Section 3 Item 4(2), the method for conducting Product Inspections at the Wakamatsu Plant involved a first step of hand-writing inspection results on Material Test Reports, and a second step of entering the figures from the Material Test Report into the Inspection System as actual measurement values; in cases such as the Misconduct, report values were additionally entered, and this framework made it easy for manual rewriting of values at every stage.

To the extent that the appropriateness of testing methods is secured, situations where inspection records data needs to be revised should never occur, and moreover, since the Misconduct occurred under such conditions, an inspection and data entry system should be introduced that does not allow for interference due to human manipulation, such as by automatically registering the values obtained as a result of Product Inspections directly.

#### **5 Implementation of substantive audits of greater depth**

As described in Section 5 Item 4, internal audits conducted heretofore by MSC did not go so far as to review actual Material Test Reports or Corrective Action Forms for Non-Conforming Products, or if they were reviewed, the selection of samples was left up to the units being audited. As described in Section 4 Item 1(1), in the case of the Misconduct, Material Test Reports contained language stating “There is an inspection point; strictly follow,” and both Material Test Reports and Corrective Action Forms for Non-Conforming Products contained language stating “Internal Concession”, and given that even the figures that did not conform with specifications were entered on these forms, it cannot be denied that if these documents had been reviewed based on determinations by the audit side, then they may have been able to discover earlier aspects of the Misconduct, namely the existence of the Point Table and Internal Concession processing.

For future audits, the current audit procedures should be inspected, and necessary revisions should be made so that audits are conducted in greater depth such as by reviewing “raw” documents that were actually filled out by inspectors, evaluating via so-called surprise document reviews by the audit side, and verifying whether any suspicious activities are taking place. In addition, in order to make such auditing possible, it is also necessary to secure the placement of the audit staff.

END

Attachment 2

December 27, 2017

To: Mitsubishi Materials Corporation  
Special Investigation Committee

Mitsubishi Cable Industries, Ltd.  
Koji Sakamoto  
Investigation Committee Chairperson

(Report) Submission of Interim Investigation Report

We 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 interim investigation report from Nishimura & Asahi dated today.

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

END

To: Investigation Committee of Mitsubishi Cable Industries, Ltd.

December 27, 2017

**Interim 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

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Attorney Toshiki Kitazumi

Attorney Eisuke Kunimoto

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Attorney Tomoyuki Kawanishi

This is an interim 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 interim 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 at the time of the final report if new facts or other details are discovered in the investigation going forward. Please also be aware that this interim 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 its parent company, Mitsubishi Materials Corporation (“**MMC**”), led MCI to discover in February 2017 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**”) 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.

This interim report mainly contains results of the investigation and review as of the reference date in Sections 2.5 below regarding the status of the framework for quality control of seal products and other products at Minoshima Works, the status of misconduct and other issues, including the Misconduct, with respect to quality control at Minoshima Works, and the facts concerning the status of MCI’s response after MMC performed the quality audit of MCI in December 2016.

With regard to the misconduct relating to quality control and the investigation and analysis of the causes and issues of the abovementioned response status, as well as the proposal of measures to prevent recurrences considering such investigation and analysis, we plan to make a final report upon further investigation, analysis and review.

## **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>1</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-

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<sup>1</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."

related committees, etc.) and performed a detailed review and verification of their content.

### **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 40 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 interim 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 52 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 interim report is December 22, 2017 ("**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>2</sup> The Administration Department, Engineering Development Department ("**Engineering Development Department**"), Production Department ("**Production Department**") and Quality Assurance Department are under Minoshima Works, 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>3</sup> Section II,<sup>4</sup> and Section III.<sup>5</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>6</sup> Production Section II,<sup>7</sup> Production Section III<sup>8</sup> and the Production Engineering Section ("**Production Engineering Section**").<sup>9</sup>

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<sup>2</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>3</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>4</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>5</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>6</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>7</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>8</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.

<sup>9</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.

The main operations of the Quality Assurance Department are 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 is the Inspection Section, which is the organizational unit in charge of inspecting the products under the responsibility of Minoshima Works, and the Quality Assurance Section (“**Quality Assurance Section**”), which is the organizational unit in charge of quality assurance of the products under the responsibility of Minoshima Works. The Inspection Section is divided into Inspection Site I (“**Inspection Site I**”)<sup>10</sup> and Inspection Site II (“**Inspection Site II**”).<sup>11</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.

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

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<sup>10</sup> Inspection Site I is 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>11</sup> Inspection Site II is 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.

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 are examined by the relevant departments, such as the Quality Assurance Department and the Production Engineering Section. Careful coordination is needed among the departments, such that mass production is 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>12</sup> is then put into molds, and the raw rubber and

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<sup>12</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.

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>13</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 (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.

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<sup>13</sup> The staff of the Inspection Section creates inspection orders based on designs, etc. created by the Engineering Development Department.

**(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>14</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 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

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<sup>14</sup> There are exceptional cases where lot inspections are performed using test pieces extracted from compounds.



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 Sec., 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 Sec. 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 Sec. Manager 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 Sec. and have applications for re-review submitted by the Production Section or the Production Management Section, etc.<sup>15</sup>

Then, the preliminary reviewers<sup>16</sup> conduct a review according to the decision standards set forth below and make a decision to (1) “use as-is,”<sup>17</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>18</sup> In advance of any decisions made, the Engineering Development Dept. 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 customer quality standards, a “use as-is” decision is not permitted.<sup>19</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.

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<sup>15</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>16</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>17</sup> Treated as equivalent to a Passing Product.

<sup>18</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 (if the product involves a contract with the Ministry of Defense).

<sup>19</sup> This rule was added when the operational guidelines were revised on July 3, 2017. No such rule existed prior to this.

(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 requested by MCI 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>20</sup> (“**Lists**”) exist at Minoshima Works. The Lists stated permitted 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 Sec. 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 Sec. 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.

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<sup>20</sup> The origins for the term “Silver Lists” is unknown.

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

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 Dept. 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 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 Sec. 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>21</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>22</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 Sec.

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.

## **C Awareness of management**

In an interview, the Assistant General Manager of the High Performance Products (Seal Products) Division (“**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 Dept., 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>23</sup>

In order to review the 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,

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<sup>21</sup> According to interviews, at that time, the files that contained the test reports were called “Silver Lists.”

<sup>22</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”).

<sup>23</sup> Further, with respect to the Non-Conforming Products that were “put on hold,” the Seal Products Division Assistant General Manager 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.

“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 Sec. will prepare a list of Silver List materials and the Engineering Development Dept., 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 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>24</sup>

Furthermore, the former Representative Director & 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 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 Assistant General Manager of the Seal Products Division said in his interview that he heard from the Former President that, when the Former President interviewed employees at Minoshima Works around 2013 in order to review the abovementioned quality complaints, 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 around 2013, and when the complaint was being addressed, the existence of the Lists was reported to the Assistant General Manager of the Seal Products Division by employees of the Inspection Section, and the 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 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.

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<sup>24</sup> In the interview, the Seal Products Division Assistant General Manager said that he does not remember whether the interactions that were recorded on the Quality Control Committee meeting minutes occurred.

## **(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>25</sup>

As noted in footnote 2 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>26</sup> to be used for all MEXCEL.<sup>27</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**

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<sup>25</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>26</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>27</sup> MEXCEL is not on the Lists.

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.

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>28</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 Sec. 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

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<sup>28</sup> The products relating to this engineering order are on the Lists.



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, 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**

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 Dept., 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>29</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>30</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.

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<sup>29</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>30</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.

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 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>31</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

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<sup>31</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 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.

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 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 of the Quality Assurance Department received a report from the Inspection Site Head 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>32</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 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

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<sup>32</sup> Refers to the Lists.

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 the former Representative Director and 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>33</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>33</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.

## Restructuring Measures of the Governance Framework for Quality Control in the MMC Group

In light of the recent series of quality issues, Mitsubishi Materials Corporation (“MMC”) will formulate measures to restructure our group’s governance framework with respect to quality control. We will propose these specific measures promptly and implement them.

In addition to considering quality control, we are also considering our group’s governance framework, which entails considering how to “promote communication within the group,” “improve the escalation of issues within the group,” “foster senior manager candidates” and other items.

### 1) Implementation of a Front Loading System for Receipt of Orders

We will aim to further expand implementing on a group-wide basis a process (a Front Loading System) for making decisions on specifications and accepting orders at the time such orders are made after having the various departments within the business, including development and design, manufacturing, inspections and sales, consider whether the order can be accepted, taking into account manufacturing capability.

The primary purpose of the Front Loading System is to prevent accepting difficult orders that exceed the company’s manufacturing capabilities. By further implementing this process, the following measures will also be necessary:

- ① Promoting communications among the departments;
- ② Understanding the imbalances of capabilities among the departments and resolving such imbalances; and
- ③ Improving imbalances in authority among the departments.

The following are examples of specific actions that we will take to promote this initiative and increase its effectiveness on an on-going basis:

- ① Regularly review production capabilities (including processes, inspections, shipping and other capabilities);
- ② Based on the results of ①, develop appropriate maintenance plans and upgrade and install new facilities and equipment; and
- ③ Assign the appropriate personnel and provide training to resolve insufficiencies in employees’ skill sets.

### 2) Strengthening the Framework and Authority of the Quality Control Department

With the Quality Management Dept. of Technology Div. taking the lead, we will establish a framework aiming at improving quality control for our entire group and will restructure the required quality control function for each business and product. In order for our group to conduct quality control in a unified and consistent manner, we are considering the following measures:

- ① Redefining the allocation of responsibility for quality control functions within each business and reflecting those changes in internal rules and regulations;
- ② Based on the above-mentioned allocation of responsibility, making organizational changes among the corporate departments, companies, business establishments and subsidiaries, as necessary;
- ③ Granting authority to the quality control departments of each business so that they can conduct appropriate inspections and quality assurance reviews;
- ④ Ensuring that the quality control departments are independent from the manufacturing

departments; and

- ⑤ Establishing a system to train personnel to become experts in quality control, and actively assigning potential candidates for senior management from each company and department to the quality control departments.

### 3) Expansion of Quality Training

We will aim to have our group employees at all levels (from the manufacturing line to management level) and all lines of work (including manufacturing, inspection and sales) understand the importance of quality and what must be done to maintain and enhance quality. We will conduct training sessions on quality awareness, including the compliance with customer contracts, the importance of the quality of the products that we provide to our customers, the need to structure the manufacturing process so as to promote quality, our pride as a manufacturing company and adherence to quality (we will use the current issues as examples in these trainings).

Additionally, in order to conduct quality training throughout our entire group, MMC will formulate guidelines on the training that should be conducted for each employee level and incorporate these guidelines into the training programs conducted for each employee level at all group companies. In doing so, we will have consistency within our group and establish a practical training system corresponding to each group company's business.

### 4) Promoting Automated Inspection Equipment

For all inspection data, from when it is obtained during the manufacturing process through the final inspections, by promoting the initiatives set forth below, we will aim to establish a system that will prevent misconduct, including the rewriting of data, and will establish a system that allows for more accurate and prompt confirmation that inspection data is consistent with customer specifications by:

- ① Automating acquisition of inspection data;
- ② Uploading inspection data into manufacturing control systems; and
- ③ Confirming that the inspection data is consistent with the applicable specifications.

These initiatives are expected to take time and will be costly to review and develop. To implement these initiatives, MMC will be required to confirm the feasibility both of automating the acquisition of inspection data from each testing device and of linking order-receiving systems with production systems so that customer specifications can be uploaded into the manufacturing control systems. We will begin implementing certain action items, on a group-wide basis, relating to these initiatives where it is feasible to do so. We will also allocate the necessary budget to implement the initiatives.

### 5) Enhancement of Quality Audits

With the Technology Division's Quality Control Department and the General Administration Division's Internal Audit Department taking the lead, we aim to establish more robust quality audits by considering and executing the measures set forth below:

- ① Improving the independence of our group's internal audit departments and strengthening their authority;
- ② Increasing internal audit staff and increasing the frequency of quality audits;
- ③ Training personnel to become experts in quality audits;
- ④ Applying audit methods for the prevention of misconduct;
- ⑤ Enhancing coordination among MMC's Internal Audit Department and the internal audit departments of our affiliates; and

⑥ Improving internal audit operations with the use of IT.

#### 6) Engagement of Outside Consultant

In order to incorporate a third-party perspective in our group's quality control, we will engage an outside consultant that is knowledgeable about and experienced in quality control on an on-going basis. The outside consultant will regularly visit business locations of MMC and its subsidiaries, and will provide guidance and advice on our group's quality control and quality assurance operations. We will avoid our group's quality control operations from becoming complacent and establish effective quality control operations.

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