

This English summary of the report is translated by Hitachi Chemical Co., Ltd. from Japanese version which we released on Nov. 22nd 2018(JST). Please note the original language of the summary of the report is Japanese and in case of any discrepancies between the Japanese and English, the Japanese version shall prevail.

To: Hitachi Chemical Company, Ltd.

# **Investigation Report**

## **(Summary Version)**

November 20, 2018

Special Investigative Committee,  
Hitachi Chemical Company, Ltd.

Chairman: Akira Takeuchi

Committee Member: Hiroshi Osada

Committee Member: Junichi Ikeda

Committee Member: Takemoto Oto

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## LIST OF DEFINITIONS

Terms	Definitions
Year-2008 Investigation:	means a simultaneous investigation conducted at each Works of Hitachi Chemical in 2008 that relates to [1] non-compliance with performance testing requirements for products certified under JIS or other certification, and [2] non-compliance with performance testing agreements with customers.
Year-2008 Issues:	mean issues related to the matters covered by, or the outcome of, the Year-2008 Investigation.
Year-2008 Issues Re-inspection:	means a re-inspection that a quality assurance department at each Works was instructed to conduct after the Year-2008 Investigation.
Year-2016 Product Audit:	means a product audit conducted between April and July, 2016 that was managed by the CSR Quality Assurance Department and was performed jointly with Quality Assurance Centers of Business Headquarters, primarily for the purpose of validating conformance to ISO9001 requirements.
Year-2018 Product Compliance Audit:	means an audit performed in 2018 covering all the manufacturing locations of Hitachi Chemical for the purpose of checking Inspection Reports for data alteration or otherwise.
JIS Act:	means the Japanese Industrial Standardization Act.
Questionnaire Survey:	means a questionnaire survey conducted covering all the officers and employees of the Hitachi Chemical group, including, without limitation, its subsidiaries, that relates to the Initial Case and Similar Cases.
Questionnaire Survey Subjects:	mean all the officers and employees of the Hitachi Chemical group as covered by the Questionnaire Survey.
Similar Cases:	mean inappropriate acts as covered by the survey that are similar to the Initial Case.
Inspection Reports:	mean documents that are issued to customers and others describing inspection results and other matters.
Official Standards:	mean standards or product specifications as required by laws and regulations, or certified by official bodies.
Codes of Conduct:	means the Codes of Conduct for the Hitachi Chemical group.
Customer Specifications:	mean standards or product specifications under contracts and other agreements with customers.
Misleading Act:	means such unfair competition act as set forth in Article 2, Section 1, Item 14 of the Unfair Competition Prevention Act.

Sakuragawa Case:	means a case identified on November 14, 2008 where, among other things, with respect to automobile parts manufactured by Yamazaki Works (Sakuragawa), rejected products were shipped with inspection data altered, and trend data related to physical properties was altered.
Factory Rules:	mean such rules as set forth by each Works of Hitachi Chemical.
Self-Audit:	means an audit covering a location that is conducted by the location itself.
Company Standards:	mean standards or product specifications based on company rules and other regulations set forth internally.
Shipping Inspection:	means an inspection before shipping that is conducted after product manufacturing for quality verification.
Shin-Kobe Electric Machinery Co., Ltd.:	means Shin-Kobe Electric Machinery Co., Ltd. that dissolved in January, 2016 through a merger with its parent company Hitachi Chemical.
Information Center:	means an information center where all the officers, employees, hosted secondees, temporary workers, in-house contract workers, and other similar workers of the Hitachi Chemical group can provide to the Committee information relating to the Initial Case and Similar Cases.
Test in the Manufacturing Process:	means a test conducted in the manufacturing process of products for quality verification.
Committee:	means a special investigative committee established as of July 2, 2018 following the identification of the Initial Case that consists of external experts and other relevant parties.
Initial Case:	means a case where with respect to some of industrial lead-acid battery products manufactured by Nabari Works, shipping test methods adopted for battery capacity were different from those agreed upon with customers, and customers were given Inspection Reports showing data different from actual measured values.
Initial Case Press Release:	means a press release titled “Inappropriate Entries of Figures in Inspection Reports of Some Products among Lead-acid Batteries for Industrial Use” as published by Hitachi Chemical as of June 29, 2018.
Anti-Monopoly Act	means the Act on Prohibition of Private Monopolization and Maintenance of Fair Trade.
Hitachi Chemical:	means Hitachi Chemical Company, Ltd.
Audit:	means an audit performed for each location by the CSR Quality Assurance Department or the Quality Assurance Center at each Business Headquarters.
Investigation:	means an investigation commissioned by Hitachi Chemical to the Committee for the purposes of, and covering, [1] an investigation into the facts of the Initial Case, [2] an investigation into the existence and facts of Similar Cases, [3] the background and causal analysis of inappropriate acts, and [4] recommendations for prevention of recurrence.
Officers:	mean directors and executive officers.

\* Note that this report indicates real names of only the Officers of Hitachi Chemical.

## **Chapter 1 Summary of Investigation**

### **Section 1 Background for Establishment of Investigative Committee**

On June 13, 2018, the top management of Hitachi Chemical Company, Ltd. (hereinafter referred to as “Hitachi Chemical”) became aware of the fact (hereinafter referred to as “Initial Case”) that, for part of the Lead-acid batteries for industrial use manufactured at Nabari Works, the shipping test methods for the battery capacity were different from the ones agreed upon with the customers, and that figures different from the actual measurement data were recorded on the document (hereinafter referred to as “Inspection Report”) issued to the customers for showing the inspection results. In response, at a meeting of the Board of Directors held on June 27, 2018, it was decided that Hitachi Chemical set up a special investigative committee (hereinafter referred to as “Committee”) consisting of external experts, etc. to investigate the facts and how they happened from an objective perspective. On June 29, Hitachi Chemical published a press release titled “Inappropriate Entries of Figures in Inspection Reports of Some Products among Lead-acid Batteries for Industrial Use” (hereinafter referred to as “Initial Case Press Release”), and simultaneously announced establishment of the Committee.

On July 2, Hitachi Chemical established the Committee, and entrusted it to carry out the investigation (hereinafter referred to as “Investigation”) with the objects and scope as described in Section 2 below.

### **Section 2 Objects and Scope of Investigation**

The Committee agreed with Hitachi Chemical on the objects and scope of the investigation as follows. (The Investigation is not intended to pursue legal responsibilities of those involved in the inappropriate acts.)

- i) Clarification of facts of the Initial Case
- ii) Existence or non-existence of inappropriate acts similar to the Initial Case (determination criteria to be described in detail in Chapter 3 below (hereinafter referred to as “Similar Cases”)) and clarification of facts, if any
- iii) Analysis of backgrounds and causes of the inappropriate acts
- iv) Proposal for prevention of reoccurrences

### **Section 3 Composition of Committee and Investigation System**

Composition of the Committee is as follows:

Chairman	Akira	Takeuchi	Lawyer, Certified Fraud Examiner (Proact Law Office)
Committee Member	Hiroshi	Osada	Professor Emeritus, Tokyo Institute of Technology
Committee Member	Junichi	Ikeda	Lawyer (Nagashima Ohno & Tsunematsu)
Committee Member	Takemoto	Oto	Outside Director, Hitachi Chemical (Chairman of Audit Committee)

In carrying out the Investigation, we appointed the following persons as co-investigators under the direct control of the Committee. Apart from the Outside Director of Hitachi Chemical, the other three committee members and co-investigators have never been interested parties of Hitachi Chemical.

Toshihiro Inoue

(Associate Professor, Headquarters for Innovative Society-Academia Cooperation, University of Fukui)

<Proact Law Office>

Tetsuya Ohno, Lawyer  
(Nabari, Saitama<sup>[1]</sup>)  
Yuko Matsuba, Lawyer

Takashi Watanabe, Lawyer  
(Shimodate)

<Nagashima Ohno & Tsunematsu>

Masao Ito, Lawyer

Yoshihiko Matake, Lawyer  
(Goi)

Ayumi Fukuhara, Lawyer  
(Matsudo)

Kiyoshi Sudo, Lawyer

Takashi Itokawa, Lawyer

Masashi Chusho, Lawyer

Tomohiko Nabeshima,  
Lawyer (Yamazaki)

Yoshitaka Ezaki, Lawyer  
(Hikone)

Masaki Mizukoshi, Lawyer

Tetsuya Hara, Lawyer

Katsunori Shimazaki, Lawyer

Junya Takeuchi, Lawyer

Akinori Negishi, Lawyer

Sohei Asao, Lawyer

Yoshiro Tanimoto, Lawyer

Yosuke Konno, Lawyer

Hiroki Takano, Lawyer

Haruki Mizuno, Lawyer

Junya Shimada, Lawyer

Ryosuke Fukuhara, Lawyer

Mizuki Ogawa, Lawyer

Ryohei Koizumi, Lawyer

Midori Mizuno, Lawyer

Yukihiro Yasuda, Lawyer

<Hokuto Law Office>

Hirofumi Kurahashi, Lawyer (Chapters 6 to 8)

Keisuke Chiba, Lawyer

Kohei Takahashi,  
Lawyer

Kenji Dazai, Lawyer

Taiki Yokose, Lawyer

Yuya Suzuki, Lawyer

Shigeki Matayoshi, Lawyer

<Certified Public Accountants (CPA)>

Kenji Kawae, CPA (Chapter 5)

Kazushi Harimoto, CPA

Takamichi Doi, CPA

Osamu Kamimura, CPA

Yoshiki Kojima, CPA

Takeshi Kurokawa, CPA

Kohei Yoshida, CPA

Tomohiro Shiro, CPA

Keita Yoshida, CPA

Hideki Shoji, CPA

and 22 other CPAs

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<sup>1</sup> Co-investigators with parentheses after the name are lead co-investigators responsible for the chapter(s), Works or investigation methods shown in the parentheses. The same applies hereinafter.

<KPMG FAS Co., Ltd.>

Tomoyuki Hotta (Digital forensics)

Seiichi Yanase

Koki Yamada

Yuki Masumoto

Yuji Kawabe

Maya Hirohara

and 35 other staff members

In addition, an executive office was set up consisting of 10 officers and employees of Hitachi Chemical for the Investigation.

#### **Section 4 Measures for Ensuring Independence of Committee and Effectiveness of Investigation**

The Committee, in carrying out the Investigation, agreed with Hitachi Chemical that, as the Investigation is on quality data falsification and potentially has huge implications for the entire supply chain, the Committee will share information with Hitachi Chemical on the investigation findings in relation to the products subjected to the inappropriate acts as necessary so that Hitachi Chemical may promptly take actions for the customers and for the market, while ensuring the objectivity and neutrality of the investigation. The Committee is not a so-called third-party committee because it does not fully meet the standards stipulated in the “Guideline for Third-party Committee for Investigation of Corporate Misconducts” drawn up by the Japan Federation of Bar Associations. However, in order to ensure full independence of the Committee to determine the methods for conducting the investigation, and also in order to realize effective investigation, the Committee agreed with Hitachi Chemical as follows, in consideration of the Guideline as well as of the “Principles for Responding to Corporate Scandals” (published on February 24, 2016 by Japan Exchange Regulation).

- 1) Hitachi Chemical will provide full cooperation across the group to the Investigation of the Committee as follows:
  - Hitachi Chemical will ensure full access of the Committee to all the materials and information that Hitachi Chemical group owns as well as to any employee;
  - Hitachi Chemical will issue a business order to all the employees, etc. of Hitachi Chemical group that they should give priority to the cooperation to the Investigation of the Committee; and
  - Hitachi Chemical will set up an executive office consisting of an appropriate number of employees, etc. to assist the investigation work of the Committee, in case it makes a request to the effect.
- 2) The Committee retains the exclusive right to draw up the investigation report (including absence of obligation to disclose all or part of the investigation report to Hitachi Chemical prior to submission of the report).
- 3) The Committee may describe the circumstances in the investigation report in case Hitachi Chemical does not provide sufficient cooperation to or obstructs the Investigation of the Committee.
- 4) The Committee retains, in principle, the right to dispose of the materials, etc. that it has collected in the course of the investigation.

## **Section 5 Investigation Period**

As of July 2, 2018 when the Committee was established and the investigation commenced, it was envisaged that the Investigation would be completed by September 30, 2018. However, during the course of the investigation, it was found out that there were many Similar Cases, and accordingly the investigation period was extended to November 20, 2018, the date of preparation of the investigation report. (Refer to Section 8 below for the background to the extension of the investigation period.)

## **Section 6 Investigation Method**

The Committee, in general, carried out the Investigation by performing the examinations and surveys 1 to 6 below.

### **1 Close examination of relevant materials**

The Committee obtained various regulations and bylaws, minutes, documents of requests for management approval, contract documents, Inspection Reports, procedure manuals, specification documents, etc. by requesting Hitachi Chemical for disclosure of these materials, which the Committee then analyzed and reviewed.

### **2 Interview and on-site investigation**

The Committee carried out interviews of about 692 persons in total that were related to Hitachi Chemical group, including telephone interviews.

The Committee also carried out on-site investigations at various Works of Hitachi Chemical in relation to the Initial Case and Similar Cases for a total of 84 days<sup>[2]</sup>.

### **3 Digital forensics investigation**

The Committee selected KPMG FAS Co., Ltd. as digital forensics provider and, of the electronic data stored on 154 business PCs rented to 148 workers, who the Committee considered it necessary to investigate, and email data stored on the mail server, the Committee preserved those information pieces that it considered necessary. From the preserved electronic data, deleted files were first restored, and email messages and document files were selected, on which the Committee carried out the analysis and review. There were 3,672,173 email messages extracted (excluding duplicates), and the Committee built a database for the keyword search using Intella version 2.1.1 released by Vound Software. Of these messages, the Committee reviewed 432,716 messages in total, excluding duplicates, with the use of conditional searches (keyword searches, etc.) of messages sent or received by the 138 workers, excluding 10 working at subsidiaries, which were determined to be outside the scope of the Investigation.

Regarding the electronic data stored on the file-sharing servers at the Works, the Committee preserved 25 TBs of data that it considered necessary, and, after building the database for the keyword search as described above, carried out the analysis as required.

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<sup>2</sup> Sum of number of days spent for on-site investigation for each of the Works.

#### 4 Questionnaire survey

##### (1) Implementation policy

The Committee carried out a questionnaire survey (hereinafter referred to as “Questionnaire Survey”) for all the officers and employees of the Hitachi Chemical group companies including subsidiaries (hereinafter referred to as “Questionnaire Survey Subjects”)[<sup>3</sup>] as part of the investigation of the Initial Case and Similar Cases.

The overseas offices and subsidiaries of Hitachi Chemical, however, are outside of the scope of the Questionnaire Survey in consideration of the local legal systems and language issues.

##### (2) Implementation method and collection rate of Questionnaire Survey

The number of the Questionnaire Survey Subjects was 9,877. On July 20, 2018, a memo titled “Implementation of Questionnaire Survey for All Employees of Hitachi Chemical group (\* responses required)” was either emailed or hand-delivered to the Questionnaire Survey Subjects, asking them to respond directly to the Committee either on the dedicated web page or by dropping the survey form in the survey box placed at each of the Works by July 27, 2018. (The actual cut-off date was August 17, 2018.)

The number of respondents to the Questionnaire Survey was 9,743, representing a response rate of 98.6%.

The Committee directly opened all the response messages.

##### (3) Items on questionnaire form and responses

Items on the questionnaire form and responses are as shown on Table 1.

Table 1: Questionnaire Items and Responses

Item (summary)	Responses
Question 1: Concerning the lead-acid batteries for industrial use produced at Nabari Works, have you ever taken any inappropriate acts in terms of quality, seen or heard other employees (including officers) do so, or been asked by other employees (including officers) to do so?	Number of respondents that answered “yes”: 106
Question 2: For respondents that answered “yes” to Question 1, please write down, on the response column, specifically the type of products, the period during which the inappropriate acts were taken, and details of the inappropriate acts (test/inspection method, description on Inspection Report, etc.).	No. of respondents providing specific descriptions: 99

<sup>3</sup> Officers and employees as of July 20, 2018.

Question 3: At Hitachi Chemical group (Hitachi Chemical Company, Ltd., including subsidiaries, etc.) and with regard to products handled by the group, including products other than the lead-acid batteries for industrial use, have you ever taken any inappropriate acts in terms of quality, seen or heard other employees (including officers) do so, or been asked by other employees (including officers) to do so?	Number of respondents that answered “yes”: 346
Question 4: For respondents that answered “yes” to Question 3, please write down specifically the type of products, the period during which the inappropriate acts were taken, and details of the inappropriate acts (test/inspection method, description on Inspection Report, etc.).	No. of respondents providing specific descriptions: 343
Question 5: Concerning the inappropriate acts under investigation (use of internal testing/inspection method that is different from the one agreed upon with the customers for shipping testing/inspection adopted for battery capacity for part of lead-acid batteries for industrial use, and recording of figures different from the actual measurement data on the Inspection Report issued to the customers), what kind of factors do you think there were?	Refer to Chapter 7 Section 5 below for options and answers.
Question 6: If there are matters that you would like to report taking this opportunity or you feel uneasy about, please write down freely on the response column. If someone has instructed or suggested that you do not have to answer honestly to the questionnaire, please write down to the effect.	No. of respondents providing specific descriptions: 1,434

**(4) Responses to questionnaire results**

The results of the Questionnaire Survey are roughly classified into: 1) matters related to the Initial Case; 2) matters implying existence of Similar Cases; and 3) matters other than 1) and 2) above; and for each the Committee carried out interview surveys (including telephone surveys) with Questionnaire Survey Subjects, with whom the Committee considered it necessary to do so.

**5 Establishment of Information Center**

**(1) Establishment policy**

As part of our investigation of the Initial Case and Similar Cases, the Committee set up a desk (hereinafter referred to as “Information Center”) where all the officers, employees, hosted secondees, temporary workers, in-house contract workers, and other similar workers of the Hitachi Chemical group can provide to the Committee information relating to the Initial Case and Similar Cases. The establishment of the Information Center was posted on the Intranet both in Japan and overseas under the name of Hisashi Maruyama, Representative Executive Officer, President and Chief Executive Officer.

**(2) Method of establishing Information Center and reporting situations**

The Committee originally planned to have the Information Center opened for the period from July 20, 2018 to August 17, 2018. With the extension of the investigation period, however, the reporting period was also extended until September 30, 2018. The Committee determined that the information be provided via email or by post addressed directly to the Committee. It was also determined that the Committee will directly open all the information messages that it receives.

**(3) Review of establishment of Information Center and responses to reports**

During the period, there were four reports to the Information Center, and the Committee carried out investigation on those on which it deemed it necessary to do so.

**6 Interview with management**

The Committee carried out management interviews with all the directors and executive officers of Hitachi Chemical (hereinafter referred to as “Officers”), whose interview the Committee determined necessary, mainly in order to hear opinions on analysis of causes of the inappropriate acts and measures to prevent recurrence.

**Section 7 Validation of Performance of Products Subjected to Inappropriate Acts and Altered Testing Process**

Concerning the inappropriate acts at Nabari Works, the Committee carried out an investigation to validate the performance of the products subjected to the inappropriate acts. (For details, refer to Chapter 4 Section 2 Item 8 of Investigation Report (full text)\*.)

The Committee, in relation to the inappropriate acts at Saitama Works, carried out an investigation to validate the testing process altered after inappropriate acts were uncovered. (For details, refer to Chapter 4 Section 7 Item 3 (4) of Investigation Report (full text)\*.)

**Section 8 Implementation Situation of Investigation**

**1 Holding of Committee meetings**

The meetings of the Committee were held between July 2, 2018, the day on which it was set up, and November 20, 2018.

The meetings were held for a total of 20 times on following days:

(Year 2018)

July 5	July 13	July 21	July 28
August 1	August 10	August 17	August 24
August 31	September 5	September 12	September 20
September 27	October 2	October 11	October 18
October 25	October 30	November 9	November 15

\*The full text of the report is publicly disclosed in Japanese only.

## **2 Development of investigation that Committee carried out**

### **(1) Establishment of Committee and commencement of investigation**

In commencing the Investigation, President and CEO Hisashi Maruyama sent a message dated June 29, 2018 to all the officers and employees of Hitachi Chemical group companies that the employees must not only cooperate with the investigation of the Committee but also, taking the opportunity, strictly review conformity of the group's products with relevant standards and abidance by the laws and regulations, and, should any fact be uncovered that could be a problem, must report to the "hot line<sup>[4]</sup>" or executive officers with courage to inform the top management.

Also on July 5, 2018, President and CEO Maruyama sent a message to all the officers and employees of Hitachi Chemical group companies, saying that "it is essential to thoroughly uncover the inappropriate acts through the investigation of the Special Investigative Committee. It must be avoided by any means that misconducts not uncovered during the course of the investigation are found out after the investigation is over. We cannot expect that trust in us can be restored if we do nothing to deal with the inappropriate acts."

### **(2) Implementation of Questionnaire Survey covering officers and employees of group companies and establishment of Reporting Center**

The Committee carried out a Questionnaire Survey of all the officers and employees of Hitachi Chemical group companies excluding overseas offices and subsidiaries of Hitachi Chemical from July 20, 2018, as described in Section 6 Item 4 above. On the same day, the Committee established the Reporting Center for all the officers, employees, hosted secondees, temporary workers, in-house contract workers, and other similar workers of the Hitachi Chemical group.

During the questionnaire period, on July 25, 2018, Mr. Maruyama sent a message to all the officers and employees of Hitachi Chemical group companies that "it is possible that inappropriate acts may be uncovered for products other than lead-acid batteries for industrial use. If one is found, please report honestly without trepidation. It is of utmost importance to clean the Augean stables."

### **(3) Substantial increase in Similar Cases and exclusion of overseas offices and subsidiaries from scope of investigation**

As stated in Section 6 Item 4 (2) above, the acceptance of questionnaire forms finished on August 17, 2018. By that day, 106 persons with regard to Initial Case (Question 1) and 346 persons with regard to Similar Cases (Question 3) responded that they were aware of the inappropriate acts. At this point, the Committee recognized that there were far more Similar Cases than originally expected. The Similar Cases that the Committee became aware of were shared with Hitachi Chemical in a timely manner at each meeting of the Committee.

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<sup>4</sup> Refers to the Internal Reporting desk of Hitachi Chemical.

In response to the identification of many Similar Cases, the Committee decided to increase the number of co-investigators substantially. Also, at the meeting held on the day, the Committee decided that overseas offices and subsidiaries of Hitachi Chemical be excluded from the scope of the Investigation on the premise that Hitachi Chemical implements measures complementing objective investigation, in consideration of the local laws and regulations as well as of the necessity to present the Investigation Report within a reasonable period of time incorporating proposals for recurrence preventative measures so that Hitachi Chemical can implement such measures promptly.

**(4) Recognition of inappropriate acts after disclosure and notification to Hitachi Chemical**

The Committee recognized that, from mid-August to late August 2018 while Hitachi Chemical was explaining to customers after the press release on the Initial Case, inappropriate acts were still being taken at Nabari Works with regard to LL- and UP-series lead-acid batteries.

Accordingly, the Committee notified Hitachi Chemical to that effect, which took measures to rectify the inappropriate acts.

**(5) Exclusion of domestic subsidiaries from scope of investigation**

The Committee continued the Investigation on the Similar Cases, and in the process of the Investigation, found out that there were more Similar Cases than originally expected. After talking with Hitachi Chemical, the Committee decided at the meeting held on September 20, 2018 that the Investigation Report would be released towards the end of November, and that the domestic subsidiaries should also be excluded from the scope of the Investigation on the premise that Hitachi Chemical implements measures complementing the objective investigation, in consideration of the necessity to present the investigation report within a reasonable period of time incorporating proposals for recurrence preventative measures so that Hitachi Chemical can implement such measures promptly.

**3 Matters handed over to Hitachi Chemical**

On November 20, 2018, the Committee determined the matters not included in the Investigation Report but to be handed over to lawyers to be retained by Hitachi Chemical for responses to the Investigation, which were facts or information that the Committee found out in the process of the Investigation, on which the Committee believed it necessary for Hitachi Chemical to continue to carry out objective investigations, including cases that the Committee uncovered on or after September 20. Before the matters were handed over, measures were taken to keep anonymous the persons that reported the cases.

## **Section 9 Reservation of Limitations regarding Investigation**

The Committee carried out investigations that it deemed necessary to achieve the objectives of the Investigation described in Section 2 above. However, the Committee hereby adds that there are limitations to the Investigation mainly because: it was contracted out by Hitachi Chemical in the first place; it was not based on compulsory investigation powers but assuming voluntary cooperation of interested persons; it was constrained by time as there was an investigation period agreed with Hitachi Chemical as stated above; and it was based on relevant materials provided by Hitachi Chemical and interviews with officers and employees of Hitachi Chemical group companies and, while doubtful points or inconsistencies identified in the relevant materials or statements were carefully clarified every time one was identified, it was in principle assumed that these materials and statements were actually prepared or made by the persons shown, and that there were no more important materials not disclosed by Hitachi Chemical other than those already disclosed.

The Committee determined the facts based on the results of the Investigation carried out with the limitations described above. If there were relevant materials other than those collected by the Committee, or if the statements, etc., obtained in the interviews were proven to be factually inaccurate, the facts determined in the Investigation may have to be altered.

The Committee also adds that the cause analysis and measures for prevention of recurrences of the Committee are solely based on the investigation of Hitachi Chemical only, and that the governance issues, etc. of Hitachi Chemical group companies both in Japan and overseas are left with Hitachi Chemical to be addressed with future investigations and validations.

## **Chapter 2 Organization, Business Lines, etc. of Hitachi Chemical**

### **Section 1 History**

Hitachi Chemical was founded on October 10, 1962.

In April 1963, it took over assets of the Chemical Products Division of Hitachi, Ltd.<sup>[5]</sup>, simultaneously absorbed Hitachi Kako Co., and started business operations. In October 1970, the Company was listed on the second section of both Tokyo and Osaka stock exchanges, and in August 1971, it was moved to the first section of the stock exchanges. The Company is currently listed on the first section of Tokyo Stock Exchange<sup>[6]</sup>.

After its establishment, the Company repeatedly absorbed related companies and others in the same business sector and reorganized its organization and business lines. In recent years, in April 2014, the Company absorbed Hitachi Powdered Metals Co., Ltd. and established Matsudo Works. In January 2016, the Company absorbed Shin-Kobe Electric Machinery (meaning Shin-Kobe Electric Machinery Co., Ltd. that was absorbed in January 2016 by the then parent company Hitachi Chemical) and Shin-Kobe Techno Service Co., Ltd. and established Saitama Works, Nabari Works and Hikone Works. In April 2016, Hitachi Kasei Polymer Co., Ltd. and Hitachi Chemical Filtec Inc. were absorbed.

As of March 31, 2018, the number of employees was 22,623 on a consolidated basis and 6,480 on a parent-only basis.

### **Section 2 Group Composition and Business Lines**

As of March 31, 2018, Hitachi Chemical group (Hitachi Chemical, subsidiaries, and equity-method affiliates) consists of Hitachi Chemical, 96 subsidiaries and two equity-method affiliates, and has manufacturing, processing and sales of functional materials and advanced components and systems as its main lines of business.

The group manufactures and sells electronic materials, inorganic materials, polymer science materials and printed wiring board materials in the functional materials business field and automotive products, energy storage devices and systems and electronic components in the advanced components and systems business field.

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<sup>5</sup> Current parent company owning 51.24% of voting rights as of March 31, 2018.

<sup>6</sup> According to the Securities Report of Hitachi Chemical for the 69th business term, Hitachi Chemical was merged, in January 1968, into Hitachi Chemical, Ltd., which was founded in June 1950 and was located in Chuo-ku, Tokyo, as formal surviving company, for the purpose of changing the par value of the shares. The de-facto surviving company is said to be Hitachi Chemical Company, Ltd. that was founded in October 1962.

### Chapter 3 Determination Criteria of Inappropriate Acts

As described in Chapter 4 below, the number of inappropriate acts at Hitachi Chemical was fairly large that were subject to the Investigation. The aspects of the acts were also varied. Accordingly, the Committee determined to use as criteria of inappropriate acts: 1) violation of laws in terms of product quality and representation; 2) willful breach of contract with customers (or delivery specifications stipulated in the contract); or 3) other willful representation of false information to customers; and acts meeting one or more of the following clauses were recognized as inappropriate act.

#### 1) Violation of laws in terms of product quality and representation

Indication of information on goods in a manner that is likely to mislead the public as to the quality, content, manufacturing method, etc., or assignment, etc. of goods with such an indication is an act of unfair competition (hereinafter referred to as “Misleading Act”) stipulated in Article 2, Section 1, Item 14 of the Unfair Competition Prevention Act (Act No. 47 of May 19, 1993. Includes revisions thereafter.). The Act stipulates criminal punishment for such Misleading Acts (Article 21, Section 2, Items 1 and 5 of the Act).

The following cases may be considered as Misleading Act as indication of information in a manner that is likely to mislead the customers, etc. as to the quality, content, manufacturing method, etc. of the products<sup>[7]</sup> and may be violation of the Act that is criminally punishable.

- During designing or development or after commencement of commercial production,
    - (i) an act of omitting inspection in conformity with the standard agreed upon with the customer in a contract document or otherwise or in accordance with the product specifications (hereinafter referred to as “Customer Specifications”) and fabricating the inspection results;
    - (ii) an act of tampering the data to agree with the Customer Specifications when the inspection results do not meet them; or
    - (iii) an act of tampering the data within the Customer Specifications when the inspection results do meet them;
- coupled with the act of delivering the Inspection Report with the fabricated inspection results to the customer; or

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<sup>7</sup> The Unfair Competition Prevention Act defines, in Article 2, Section 1, Item 14, that an act of indication of information on “goods or services or in an advertisement thereof or in a document used in or a communication for a transaction involving said goods or services” in a manner that is likely to mislead the public is an act of unfair competition. The “document used in a transaction” is commonly understood to include order form, quotation, invoice, calculation sheet and receipt (see “Article-by-article Explanation of the Unfair Competition Prevention Act,” Intellectual Property Policy Office, Ministry of Economy, Trade and Industry, FY2015 revised edition, page 107). The Inspection Report and other documents, the inspection results shown on which were fabricated or falsified through inappropriate acts under investigation, are considered as “document used in a transaction.” Whether these are “indication in a manner that is likely to mislead” is determined from the viewpoint of whether it is likely to mislead customers and consumers after taking into consideration details of the indication, industry practices and other circumstances for individual, specific cases (ditto, page 109).

- An act of producing the products using manufacturing machinery that is different from one agreed upon with the customer and indicating the falsified information that the products were manufactured using the manufacturing machinery that is agreed upon with the customer.

And, although the conclusion may differ depending on the specific manner in which the transaction with the customer is executed or in which the fabrication or falsification is carried out, the act may constitute the misleading representation (as being superior) as stipulated in Article 5, Section 1 of the Act against Unjustifiable Premiums and Misleading Representations (Act No. 134 of May 15, 1962. Includes revisions thereafter) if the fabricated or falsified inspection results are shown to the general consumers in a catalog, etc. Furthermore, an act of deceiving the customer by falsifying that the quality, etc. of the product meets the Customer Specifications, having the customer misunderstand the quality, etc. of the product, and receiving the consideration for the product may constitute the criminal fraud stipulated in Article 246, Section 1 of the Penal Code (Act No. 45 of April 24, 1907. Includes revisions thereafter.)<sup>[8]</sup>.

For these reasons, the Committee determined that an act that may meet this criterion 1) was an inappropriate act.

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<sup>8</sup> If there is an agreement with the customer that only products that are compliant with a law such as the Industrial Standardization Act (Act No. 185 of June 1, 1949. Includes revisions thereafter. Hereinafter referred to as "JIS Act") or with a standard or specification based on a certification by a public institution (hereinafter referred to as "Official Standard") are to be shipped, it does not immediately create the obligation to carry out the inspection on all the products to be shipped in accordance to the Official Standard. If, however, the Inspection Report is issued to the customer stating that the inspection was carried out on the shipped products in compliance with the Official Standard and in fact the inspection was not carried out on the products in compliance with the Official Standard, the act may be construed as an Misleading Act or act of misleading representation (as being superior) as described in this criterion 1).

2) Willful breach of contract with customers (or delivery specifications stipulated in the contract)

If fabricated or falsified inspection results were shown on the Inspection Report, if an inspection expressly required in the contract with the customer or delivery specifications was not carried out intentionally and the product was shipped to the customer with such a fact kept secret, or if an inspection different from one required in the delivery specifications with the customer was carried out intentionally and the product was shipped to the customer without approval of the customer, the Committee determined that such an act was an inappropriate act, which was in breach of the contract with the customer. If an act did not breach the delivery specifications expressly but was contrary to the purport of the contract and it was a willful act, the act is deemed as wrongful as breach of express descriptions on the delivery specifications, and the Committee determined that such an act was an inappropriate act [<sup>9</sup>].

On the other hand, if the breach of the Customer Specifications of the product to be shipped to the customer could be known but was not recognized, such as when the inspection required in the Customer Specifications was not carried out because, for example, of incorrect transcription of the inspection procedures from the delivery specifications to the inspection manual, it is no more than negligent non-performance of the contract with the customer, and the Committee does not determine that such an act was an inappropriate act.

3) Other willful representation of false information to customers

If an act does not meet the criterion 1) or 2) above, but, despite the requirements in the rules set forth by the Works of Hitachi Chemical (hereinafter referred to as “Factory Rules”) that the examiner must have an examiner qualification, unqualified persons were performing the inspection and representation to the customer was that only qualified examiners were doing so, the Committee determined that such an act is an inappropriate act in consideration of the wrongfulness of the act.

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<sup>9</sup> An agreement with the customer that a product compliant with the Official Standard such as set forth in the JIS Act is to be shipped creates an obligation under the private law to ship a product in compliance with the Official Standard. A breach of this obligation may constitute an inappropriate act as described in this criterion 2).

The Committee used these determination criteria to determine inappropriate acts. The Committee provided detailed descriptions of such inappropriate acts that were considered as particularly significant in view of the impact on the victimized customer or on the supply chain, characteristics of the products subjected to the inappropriate acts (sales amount of the products, sales amount of the products subjected to the inappropriate acts, whether finished products or not, etc.), impact on the internal control of Hitachi Chemical (whether such acts were repeated systematically or not, whether the top management was involved or not, etc.), and provided summaries for other inappropriate acts (see Chapter 4 of the Investigation Report (full text)\*). The Committee included the inappropriate acts in the scope of the Investigation that took place within the past five years before the announcement of the Initial Case on June 29, 2018 (i.e., on or after June 29, 2013) due to time constraints on the Investigation.

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\*The full text of the report is publicly disclosed in Japanese only.

## Chapter 4 Findings with Regard to Inappropriate Acts

### Section 1 Overview of Inappropriate Acts

#### 1 Scope of the investigation by the Committee

The Committee began the Investigation following on from the Initial Case, i.e. improper value inputs into Inspection Reports on industrial lead-acid batteries at Nabari Works. Thus, the main scope of this Investigation was directed toward the “inappropriate acts at the Shipping Inspection”, conducted by the Quality Assurance Department at each Works.

However, in the course of this Investigation by the Committee, it was confirmed that three Works, i.e. Yamazaki, Matsudo, and Saitama did not only commit inappropriate acts for the investigation for quality assurance before shipping, after manufacturing (“Shipping Inspection”), but also “inappropriate acts at the development phase or in the development division”. However, with regard to this “inappropriate acts at the development phase or in the development division”, it was outside the goal of this initial investigation by the Committee, therefore also out of scope of the Questionnaire Survey or Information Center, and thus the Committee was unable to conduct comprehensive investigation. It is possible, however, if “inappropriate acts at Shipping Inspection” is to be recognized, “inappropriate acts at the development phase or in the development division” could also be recognized for the same products (Acceptance of orders as a result of the false input of test figures at the development phase could become a factor in the false input of the test figures at the subsequent Shipping Inspection). Therefore, Hitachi Chemical needs to conduct a comprehensive and objective investigation in the future with regard to “inappropriate acts at the development phase or in the development division”.

Also the Initial Case Press Release says “At the present time, the failure in performance leading to this incident has not yet been identified. The company considers that there is no problem with the performance and safety of the products themselves”. It is, however, only natural that stakeholders have doubts or concerns with regard to the performance of products which are subject to the inappropriate acts. Thus, the Committee conducted the “performance validation” on certain products subject to inappropriate acts at Nabari Works (See 2.8 at Chapter 4 of the investigation report (full text)\*). Also the Committee conducted a “validation of revised testing processes” with regard to “inappropriate acts at the development and design phase” found at Saitama Works (See 7.3(4) of Chapter 4 of the investigation report (full text)\*). However, further performance validation and process validation with regard to inappropriate acts at other Works was unable to be carried out by the Committee in order to submit the investigation report within a reasonable period. Therefore, Hitachi Chemical needs to conduct comprehensive and objective investigations in the future with regard to “performance validation” and “validation of revised testing processes”.

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\*The full text of the report is publicly disclosed in Japanese only.

Furthermore, with regard to the domestic subsidiaries, overseas facilities and overseas subsidiaries of Hitachi Chemical, given the significant development of Similar Cases in process of Investigation, they were excluded from this Investigation (See 8.2 (3) and (5) of Chapter 1 above). Therefore, Hitachi Chemical needs to conduct comprehensive and objective investigation in the future with regard to the domestic subsidiaries, overseas facilities and overseas subsidiaries.

The following is a table illustrating the scope of this Investigation conducted by the Committee. <sup>[10]</sup>

Table 2. Investigation scope by the Committee

	Inappropriate acts at development phase or development division	Inappropriate acts at Shipping Inspection	Performance and process validation of testing of the subject products
Nabari Works	Not conducted	Conducted	Partially conducted
Yamazaki Works	Partially conducted	Conducted	Not conducted
Goi Works	Not conducted	Conducted	Not conducted
Shimodate Works	Not conducted	Conducted	Not conducted
Matsudo Works	Partially conducted	Conducted	Not conducted
Saitama Works	Partially conducted	Conducted	Partially conducted
Hikone Works	Not conducted	Conducted	Not conducted
Domestic subsidiaries	Not conducted	Not conducted	Not conducted
Overseas facilities /subsidiaries	Not conducted	Not conducted	Not conducted

## 2 In relation to inappropriate acts by Hitachi Chemical for all products

The following figure illustrates how inappropriate acts recognized by the Committee, are spread among the entire product range handled by Hitachi Chemical. According to this, 42 products among the 127 products are subject to inappropriate acts.

<sup>10</sup> “Partially conducted” means investigation was limited to only the confirmed facts which were revealed during this Investigation process.

Figure 1. Distribution of products subject to inappropriate acts at Hitachi Chemical

Functional materials	Category	Products	No.	Nabari	Yamazaki			Goi			Shimodate			Matsudo		Saitama	Hikone	
					Yamazaki	Sakuragawa	Katsuta	Goi	Kashima	Noda	Tokushima	Shimodate	Mimemiyu	Goshomiyu	Matsudo			Katori
Semiconductor related materials	Wafer process related materials	Photosensitive insulation coatings	1															
		CMP slurries	2															
		Insulation coating	3															
		Polymides	4															
	Fabrication process related materials	Varnish for die-bonding paste(Ag paste)	5															
		Die-bonding films	6															
		High heat resistant coating materials	7															
		Photosensitive adhesive materials	8															
		Map molding support tape	9															
		Dicing film	10															
		Release sheet	11															
		Encapsulants	12															
Inorganic materials	Carbon products	Anode materials for consumer lithiumion batteries	13															
		Anode materials for medium and large sized lithiumion batteries	14															
		Brushes for electric machine	15															
		Brushes for automotive	16															
		Current collecting device	17															
		Heat conductive sheets	18															
		Carbon sliding materials	19															
		Active paste for capacitors	20															
		lubricant and release agent	21															
		Glass-like carbons	22															
		Ceramics	23															
	Other inorganic materials	High-performance alumina ceramics	24															
Low thermal expansion ceramics		25																
Polymer science materials	Chemical materials	Ink ribbons	27															
		Hardeners	28															
	UV-curable materials	Specialty acrylates	29															
		Acrylic resins	30															
	Coating resins used for paints	UV-curable release agent	31															
		Acrylic resins	32															
	Functional resins	Amino resins	33															
		Coating resins used for paints	34															
		Wavelength conversion particles	35															
		Aromatic polyester resin	36															
		Co-polymerized polyester resin for adhesive	37															
		Release agents	38															
Polyurethane resin		39																
Molding resins	Alkyl phenolic resins	40																
	Ketone resin	41																
	Shell mold resin	42																
	Molding resins	43																
Electrical insulating materials	Binder for grmdstone	44																
	Varnishes	45																
	Clothes and Tapes	46																
	Mica	47																
	Epoxy insulator	48																
	Fiber reinforced plastics for superconductor	49																
	Dry condenser bushing	50																
	Epoxy resin for electronic components molding	51																
	Void-free fiber reinforced plastics(FRP)	52																
	Adhesives	Hot melt adhesives	53															
Adhesives		54																
Functional film products	Adhesive films	55																
	Functional film products	56																
	Masking film for a plating process	57																
	Cross-linked foamed polyethylene	58																
	Inorganic dense-packed foam	59																
	Foamed polyethylene thermal insulation sleeve	60																
	Mats for emergency evacuation	61																
	RFID(Radio frequency Identification) products (contactless IC tags and cards)	62																
	Wrapping films for food	63																
	Display related materials	Anisotropic conductive films	64															
Quantum dot film		65																
Transparent insulation films		66																
Moisture resistant insulating materials for FPD(Flat Panel Display)		67																
Solder resists for COF(Chip on Film)		68																
Printed wiring boards materials	Base materials	Copper-clad laminates & Prepreg	69															
		Materials for fine patterning	70															
		Mass laminates	71															
	Process materials	Epoxy adhesive film	72															
		Insulation laminates	73															
Other functional materials	LED materials	Process materials for printed wiring boards	74															
		Photosensitive dry films for printed wiring boards	75															
	Thermal management materials	White epoxy molding compounds for reflectors	76															
	Deposited products	High thermally conductive insulation adhesive sheets	77															
Molded plastics	Small precision-molded plastics and Composite molded plastics	78																
	Aluminumdeposited film products	79																



<p>Goi Works</p>	<ul style="list-style-type: none"> <li>➤ Before the internal revelation of inappropriate acts at Works, the incumbent General Manager of Works was aware of some of those inappropriate acts regarding hardeners and specialty acrylates.</li> <li>➤ The Shipping Inspection work was shifted from the Quality Assurance Department to the Manufacturing Department, and then it was subcontracted to a consolidated subsidiary by the Manufacturing Department. Given the background of dispersion of work and responsibility of Shipping Inspection, as well as lack of manpower due to the cut in labor costs, inappropriate acts were caused and lasted for a long period.</li> <li>➤ All four sites which have different backgrounds revealed inappropriate acts.</li> </ul>
<p>Shimodate Works</p>	<ul style="list-style-type: none"> <li>➤ For example, while inappropriate acts with regard to encapsulants was somewhat systematic misconduct, discussed and started by the manager of the Development Department, the manager of the Manufacturing Department, and the manager of the Quality Assurance Department, there were other inappropriate acts, for example, concerning prepreg, which were executed by personal judgment at the site, where information was withheld at a section manager level and the practice continued without the knowledge of people at department manager levels. Thus, there was a contrast in terms of systematic misconduct and the scope of communication.</li> <li>➤ Some of the falsification with regard to encapsulants was carried out with the knowledge of the Deputy General Manager of Works and two Executive Officers at that time (the incumbent Executive Vice President is one of them).</li> <li>➤ With regard to some of the products related to inappropriate acts at Shimodate Works, all or some of the Shipping Inspection was transferred to the Manufacturing Department.</li> <li>➤ As inspections started to be conducted on the items on which Year-2008 Investigation revealed that no testing had been conducted, falsification began on some products records.</li> </ul>
<p>Matsudo Works</p>	<ul style="list-style-type: none"> <li>➤ With regard to powder metal products, “internal concession” based on the Works Rules has been conducted for a long time.</li> <li>➤ “Internal concession” was conducted in multiple departments such as the Quality Assurance Department, Powder Metal Development and Design Department, to the knowledge of some of the past General Managers of Works.</li> <li>➤ “Internal concession” was conducted on products not only at the mass production phase, but also at the development phase.</li> </ul>
<p>Saitama Works</p>	<ul style="list-style-type: none"> <li>➤ The General Manager of Works concealed from the management the inappropriate acts regarding the inspection of automotive batteries by the Quality Assurance Department after the Initial Case Press Release.</li> <li>➤ Some automotive batteries not meeting certain required specification had been shipped.</li> <li>➤ Not only inappropriate acts regarding inspection by the Quality Assurance Department, but also some inappropriate acts by the batteries development and design department at the design development phase was confirmed.</li> </ul>

Hikone Works	<ul style="list-style-type: none"><li>➤ For unit components and electronic materials, respectively, inappropriate acts of not conducting routine inspection in general were confirmed.</li><li>➤ The main motivation for these inappropriate acts were explained as lack of time for inspections and testing due to the shortage of personnel, which led to the fabrication and falsification of the inspection and testing results.</li><li>➤ People at department manager levels and more high levels were not confirmed as being involved in major inappropriate acts. It was generally seen that the supervisors were not capable of managing and supervising properly the work done by their subordinates, and there was no system or environment where their subordinates could report inappropriate acts to their supervisors.</li></ul>
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## Section 2 Nabari Works

Overview of Nabari Works	
History	<p>1982 Established as Nabari plant of Shin-Kobe Electric Machinery Co., Ltd.</p> <p>2012 Shin-Kobe Electric Machinery Co., Ltd. became a wholly owned subsidiary of Hitachi Chemical.</p> <p>2016 Shin-Kobe Electric Machinery Co., Ltd. was absorbed into Hitachi Chemical, and Nabari plant became Nabari Works.</p>
Manufactured products	Lead-acid batteries for industrial use, small stationary valve-regulated lead-acid batteries, traction batteries, and lithium-ion batteries for industrial use
Facilities and personnel <sup>[11]</sup>	<p>Book value of main facilities: 4,344 million yen</p> <p>Number of employees: 352</p>
Products affected by inappropriate acts <sup>[12]</sup>	<p>Ratio of affected products in the overall Works sales: approx. 15.0%</p> <p>Affected customers: total number approx. 434 companies</p>
Overview of inappropriate acts	
Stationary valve-regulated lead-acid batteries (excluding UP model, BA model, and small size)	<p>From 1993 until June 2018 at least, with regard to stationary valve-regulated lead-acid batteries, excluding products of UP model, BA model, and small size, the Quality Assurance Department fabricated testing results, in the following cases, as if they had performed the capacitance test despite the fact they had not and issued Inspection Reports stating that all the shipments had passed the inspection, and delivered them to customers.</p> <ul style="list-style-type: none"> <li>• Cases where there were agreements with customers that capacitance tests based on the test terms stipulated in JIS standards (JIS terms) would be conducted, and Inspection Reports stating their results would be delivered</li> <li>• Cases where no such agreements above, Inspection Reports stating the completion of a capacitance test based on the JIS terms would be delivered to the customers</li> </ul>
Flooded type lead-acid batteries (excluding BA model)	<p>From 1993 until June 2018 at least, with regard to flooded type lead-acid batteries excluding BA model products, the Quality Assurance Department fabricated testing results, in the following cases, as if they had performed the capacitance test despite the fact they had not and issued Inspection Reports stating that all the shipments had passed the inspection and delivered them to customers.</p> <ul style="list-style-type: none"> <li>• Cases where there were agreements with customers that capacitance tests based on JIS terms would be conducted, and Inspection Reports stating their results would be delivered</li> <li>• Cases where no such agreements above, Inspection Reports stating the completion of capacitance tests based on the JIS terms would be delivered to customers</li> </ul>

<sup>11</sup> Extracts from the annual securities report by Hitachi Chemical submitted on June 29th, 2018. The same applied to other Works below.

<sup>12</sup> Figures are based on data from Hitachi Chemical. The same applied to other Works below.

	<p>In 2015, with regard to flooded type lead acid batteries shipped to the customer n1 for their nuclear power station, the Quality Assurance Department falsified the capacitance testing results and issued Inspection Reports stating they had passed the test despite the fact that they had not, and delivered these to customers.</p> <p>From 2000 until August 2018 at least, with regard to flooded type lead acid batteries with catalyst plug, the Quality Assurance Department fabricated testing results stating that they performed the testing once every half year and the batteries passed despite the fact that no gas recombination efficiency testing had been performed, and Inspection Reports were issued and deliver to customers.</p>
<p>Stationary valve-regulated lead-acid battery for short-time &amp; large-current discharge use (UP model)</p>	<p>From 2008 until August 2018 at least, with regard to Stationary valve-regulated lead acid battery for short-time &amp; large-current discharge use (UP model),</p> <ol style="list-style-type: none"> <li>i. For a routine monthly capacitance test, the Quality Assurance Department used previous routine testing results in cases where no passes could be achieved within five test attempts, and fabricated testing results in order to meet the judgment criteria of capacitance tests, and false Inspection Reports were issued and delivered to customers.</li> <li>ii. For a routine monthly capacitance test, the Quality Assurance Department premeasured the voltage and internal resistance in a simplified way in order to foresee any possibilities of passing the test on samples delivered by the Manufacturing Department, and selectively extracted samples and performed the test, while it should be done on randomly extracted samples.</li> <li>iii. For a routine monthly capacitance test, the Quality Assurance Department instructed the Manufacturing Department to extract multiple samples beforehand, and performed a capacitance tests until one of them passed the test, or asked the Manufacturing Department to submit another sample to perform a capacitance test on, in cases where previous samples delivered by the Manufacturing Department had not passed the test within 5 attempts.</li> <li>iv. For capacitance tests performed in the presence of customers upon their request, the Quality Assurance Department secured samples beforehand where the routine testing results had shown to produce capacitance easily, and used these samples in the tests in the presence of customers, when the tests should have been done on randomly extracted samples.</li> </ol>

<p>Stationary valve-regulated lead-acid batteries (BA model) Flooded type lead-acid batteries (BA model)</p>	<p>From 2000 until June 2018 at least, there were cases where there were agreements with certain customers that high rate capacitance tests and low rate capacitance tests be conducted on certain BA model numbers, and Inspection Reports stating the testing results be issued. However, the Quality Assurance Department fabricated their testing results as if they had performed such tests despite the fact they had not and Inspection Reports stating that 100 percent shipments had passed the test were issued and delivered to customers.</p>
<p>Inappropriate acts which occurred after the Initial Case Press Release</p>	<p>After the Initial Case Press Release, in response to the customers' request to conduct an investigation on the Stationary valve-regulated lead-acid battery for cycle use in LL model, although part of the result of the Test in the Manufacturing Process of the said products<sup>[13]</sup> was not successful, false Inspection Reports stating a part of the said testing results were "missing data" or "unable to be detected" were issued by the Quality Assurance Department on August 8th in 2018, and delivered to customers.</p>
	<p>After the Initial Case Press Release, in response to the customers' request to conduct an investigation on the three UP model products shipped to certain customers, although the part of the results of the capacitance test was not successful, the Quality Assurance Department, on July 17th, 2018, fabricated the testing results stating that the test result was successful and false Inspection Reports were issued and delivered to the customer. Also, on August 3rd, 2018, with regard to one UP model product to be shipped to the same customer, they conducted testing with different inspection terms from those agreed for the capacitance test with the customer, and Inspection Reports stating such testing results were issued and delivered to the customer.</p>
<p>Other inappropriate acts: 0 in total</p>	
<p><b>Characteristics of inappropriate acts at Nabari Works</b></p>	
<ul style="list-style-type: none"> <li>➤ Past General Manager of the Works were aware of inappropriate acts. They include a General Manager of the Works who later took a post of President of Shin-Kobe Electric Machinery Co., Ltd.</li> <li>➤ Among the products subject to inappropriate acts are nuclear QA projects (orders of lead-acid batteries for use in safety system within a nuclear power station).</li> <li>➤ Another case of inappropriate acts occurred after the Initial Case Press Release on June 29th, 2018.</li> </ul>	

<sup>13</sup> Referring to a test conducted in the manufacturing process of products for quality verification ("Test in the Manufacturing Process")

### Section 3 Yamazaki Works

Overview of Yamazaki Works	
History	<p>1944 Completion of new varnish plant, part of the Paint Unit of Hitachi plant which is part of Hitachi, Ltd. (currently Yamazaki Works).</p> <p>1952 Became Hitachi Insulating Materials Works of Hitachi, Ltd, independent from Hitachi Plant.</p> <p>1963 Separated from Hitachi, Ltd., and established as Yamazaki Plant of Hitachi Chemical Co., Ltd.</p> <p>1965 Sakuragawa Plant (currently Sakuragawa Site) was established.</p> <p>1968 Ishigami Branch Plant (later the name changed to Katsuta Branch Plant, which is currently Katsuta Site) was established.</p> <p>1990 Kashima Plant (currently Kashima Site of Goi Works) was established.</p> <p>1994 Sakuragawa Plant was integrated into Yamazaki Plant.</p> <p>1995 Katsuta Branch Plant was integrated into Yamazaki Plant.</p> <p>1999 Yamazaki Plant changed its name to Yamazaki Works.</p> <p>2000 Kashima Plant was integrated into Yamazaki Works.</p> <p>2010 Kashima Plant was integrated into Goi Works.</p>
Related sites and manufacturing products	<p>Yamazaki Site: Semiconductor related materials, Process materials</p> <p>Katsuta Site: Semiconductor related materials, Ceramics products</p> <p>Sakuragawa Site: Carbon products</p>
Facilities and personnel	<p>Book value of main facilities: 21,821 million yen</p> <p>Number of employees: 971</p>
Products affected by inappropriate acts	<p>Ratio of affected products in the overall Works sales: approx. 7.6%</p> <p>Affected customers: total number approx. 60 companies</p>
Overview of inappropriate acts	
CMP slurries (Katsuta Site)	<p>Since November 2007 at least, with regard to certain inspection items (pH, conductivity, viscosity, impurity content (Na), particle size, refractive index, and concentration of a non-volatile content (NV)) prescribed in delivery specifications with certain customers to be conducted, if they did not meet the control values specified with the said customers even though Customer Specifications were met, based on decisions made by a Senior Engineer and Staff Engineer in the Quality Assurance Department or decisions based on discussions between a Senior Engineer and Senior Researcher or Staff Engineer and Staff Researcher in the Quality Assurance Department, Manufacturing Department, and development department, the said control values were falsified, and false Inspection Reports stating testing results that satisfied the control values were issued and delivered to the customers.</p>
	<p>Since August 2010 at least, with regard to the impurity content (Na) prescribed as certified values or Customer Specifications in delivery specifications with certain customers, when the actual measured values met the certified values or Customer Specifications, falsified Inspection Reports containing certain values that differed from the measured values were issued and delivered to the customers.</p>

	<p>With regard to particle sizes, specified to be subject to testing in delivery specifications with certain customers, as the particle size distribution equipment (old particle size distribution equipment) or testing equipment was out of order around March 18th, 2014 and March 24th onward, the testing was conducted by other particle size distribution equipment (alternative particle size distribution equipment) which was made by a different manufacturer and has more accurate measurements producing values different from actual values of the old particle size distribution equipment. When testing results showed values within a certain scope set by the Quality Assurance Department, the figures were falsified to match the internal control based on the values of the old particle size distribution equipment, and such Inspection Reports were issued and were delivered to the customers.</p>
<p>Varnish for die-bonding paste (Ag paste) (Yamazaki Site)</p>	<p>Approximately from October 1998 until July 2018, with regard to varnish, material of Ag paste which is a kind of die-bonding paste, delivered to certain customers, although it was specified in delivery specifications with customers to conduct testing on inspection items such as ash, specific gravity, or impurities (Cl), in practice no such testing was conducted, and fabricated Inspection Reports stating as if such inspection had been performed, were issued, and delivered to the customers.</p>
<p>Die-bonding films (Yamazaki Site)</p>	<p>Approximately from June 2015 until July 2018, despite the fact that the no testing was conducted on those inspection items such as die shear strength, peel strength, and flow volume, false Inspection Reports stating as if testing was conducted, were issued and delivered to customers.</p>
<p>Other inappropriate acts: 10 in total</p>	
<p>Characteristics of inappropriate acts at Yamazaki Works</p>	
<ul style="list-style-type: none"> <li>➤ Some of the past General Manager of Works were aware of some of inappropriate acts regarding CMP slurries.</li> <li>➤ An incumbent Executive Officer was involved in inappropriate acts at the prototype phase for some CMP slurries products as a member of the development department in 2008.</li> </ul>	

## Section 4 Goi Works

Overview of Goi Works	
History	<p>1968 Started operations as petrochemicals department of Yamazaki Plant (currently Yamazaki Works).</p> <p>1971 Became Goi Branch Plant of Yamazaki Plant.</p> <p>1973 Separated from Yamazaki Plant and became independent Goi Plant (changed the name as Goi Works in 1999).</p> <p>2010 Kashima Plant was incorporated into Goi Works.</p> <p>2016 Since Hitachi Kasei Polymer Co., Ltd. was absorbed into Hitachi Chemical, Noda Plant and Tokushima Plant which were branch plants of Hitachi Kasei Polymer were incorporated into Goi Works.</p>
Related sites and manufacturing products	<p>Goi Site: Acrylic resins and other coating materials for electronic equipment products and electronic components such as semiconductors, etc.</p> <p>Kashima Site: Acrylic resins and other Coating resins used for paints, Materials for printed wiring boards, etc.</p> <p>Noda Site: Adhesives, etc.</p> <p>Tokushima Site: Polyester resin, Polyurethane resin, etc.</p>
Facilities and personnel	<p>Book value of main facilities: 10,246 million yen</p> <p>Number of employees: 520</p>
Products affected by inappropriate acts	<p>Ratio of affected products in the overall Works sales: approx. 51.1%</p> <p>Affected customers: total number approx. 557 companies</p>
Overview of inappropriate acts	
Die-bonding films (Goi Site)	<p>Since September 2012 at least, with regard to some products of Die-bonding films, although it was not an agreement with customers, a responsible person for Shipping Inspection had to acquire a qualification as an inspector according to factory rules at Goi Works. However, a person who does not have such inspector qualification conducted visual inspection. Also around in June 2017, although the certification of the said inspector qualification regarding visual inspection was not conducted, a list of certified inspectors who were not certified was prepared by the Quality Assurance Department and presented to customers.</p>
Hardeners (Goi Site)	<p>Since April 2005 at least, with regard to Hardeners, although it was specified in delivery specifications with customers that 100% testing be conducted on certain shipping inspection items (viscosity, specific gravity, neutralization equivalent, and free acids), in practice the said testing was only conducted around 1 out of 5 lots, and with regard to those lots on which testing was not conducted, figures were fabricated in order to meet Customer Specifications as if testing had been conducted, and false Inspection Reports were issued and delivered to customers.</p>

Specialty acrylates (Goi Site)	<ul style="list-style-type: none"> <li>• Since April 2005 at least, with regard to Specialty acrylates, although it was specified in delivery specifications with customers that 100% testing be conducted on certain shipping inspection items (viscosity, specific gravity, acid values, waters and volatiles), in practice the said testing was only conducted around 1 out of 5 lots, and with regard to those lots on which no testing was conducted, figures were fabricated in order to meet Customer Specifications as if testing had been conducted, and false Inspection Reports were issued and delivered to customers.</li> <li>• Since 1998 at least, with regard to the above products, although no testing was conducted on ash, fixed testing results were fabricated and recorded within a scope of meeting Customer Specifications as if the said testing had been conducted, and Inspection Reports based on the said records were issued and delivered to customers.</li> </ul>
Release agents (Tokushima Site)	Since 2005 at least, with regard to peel force, an inspection item, of one product among Release agents products, if actual values were below Customer Specifications, comparison was made between the said actual values and the past accepted actual values, and if the said actual values were equal to those of the past accepted lots, the said actual values were falsified, and Inspection Reports stating figures around the lower limit of the specification as testing results were issued and delivered to customers.
Co-polymerized polyester resin for adhesive (Tokushima Site)	Since 2002 at least, with regard to CPR, an testing item, of two product type of Co-polymerized polyester resin for adhesive, although Inspection Reports should state actual values, if the actual values did not meet Customer Specifications, the said actual values were falsified, and Inspection Reports stating the upper limit or lower limit of the specification were issued and delivered to customers.
Other inappropriate acts: 24 in total [ <sup>14</sup> ]	
Characteristics of inappropriate acts at Goi Works	
<ul style="list-style-type: none"> <li>➤ Before the internal revelation of inappropriate acts at Works, the incumbent General Manager of Works were aware of some of those inappropriate acts regarding Hardeners and Specialty acrylates.</li> <li>➤ The Shipping Inspection work was shifted from the Quality Assurance Department to the Manufacturing Department, and then it was subcontracted to a consolidated subsidiary by the Manufacturing Department. Given the background of dispersion of work and responsibility of Shipping Inspection, as well as lack of manpower due to the cut in labor costs, inappropriate acts were caused and lasted for a long period.</li> <li>➤ All four sites which have different backgrounds revealed inappropriate acts.</li> </ul>	

<sup>14</sup> In principle, it is classified according to types of products and inappropriate acts. When similar conduct was revealed over multiple similar type of products, in some cases it was treated as one case of inappropriate acts. For details, see 4.3 of Chapter 4 onward of the investigation report (full text\*).

\*The full text of the report is publicly disclosed in Japanese only.

## Section 5 Shimodate Works

Overview of Shimodate Works	
History	<p>1958 (Shimodate) Established as Shimodate branch plant of Hitachi Insulating Materials Works of Hitachi, Ltd.</p> <p>1963 (Shimodate) Spun off from Hitachi, Ltd., to become Shimodate plant of Hitachi Chemical.</p> <p>1974 (Goshomiya) Goshomiya branch plant of Shimodate plant started operations.</p> <p>1980 (Goshomiya) Molded Synthetic Resin Products Division to become independent as Shimodate second plant.</p> <p>1986 (Minamiyuki) Minami Yuki plant was established.</p> <p>1999 (Shimodate) Changed its name to Shimodate Works. (Goshomiya) Changed its name to Goshomiya Works.</p> <p>2010 (Shimodate) Goshomiya Works was integrated into Shimodate Works.</p>
Related sites and manufactured products	<p>Shimodate Site: Printed wiring boards materials (prepreg, copper-clad laminates), polymer science materials (modeling resins), etc.</p> <p>Goshomiya Site: Printed wiring boards materials (prepreg, copper-clad laminates), electronic materials (films for display touch panels, functional film products), etc.</p> <p>Minamiyuki Site: Electronic materials (encapsulants)</p>
Facilities and personnel	<p>Book value of main facilities: 23,234 million yen</p> <p>Number of employees: 1,666</p>
Products affected by inappropriate acts	<p>Ratio of affected products in the overall Works sales: approx. 23.7%</p> <p>Affected customers: total number approx. 512 companies</p>

Overview of inappropriate acts	
Prepreg (Shimodate Site and Goshomiya Site)	<p>Since November 2008 at least, with regard to some prepreg manufactured at Goshomiya Site, although it was specified in delivery specifications with customers that testing of volatile substances be conducted according to JIS standards or IPC standards, in practice no testing of volatile substances was conducted, and by referring to the results figures in previous Inspection Reports, figures were fabricated in order to meet Customer Specifications as if the said testing had been conducted, and false Inspection Reports were issued and delivered to customers.</p>
	<ul style="list-style-type: none"> <li>• Since 1994 at least, with regard to some prepreg manufactured at Goshomiya Site, although it was specified in delivery specifications with customers that testing on resin flows be conducted according to JIS standards or IPC standards, in practice a different testing method (an testing method unique to Hitachi Chemical) was conducted, and by referring to the results figures in previous Inspection Reports, figures were fabricated in order to meet Customer Specifications as if the said testing had been conducted, and false Inspection Reports were issued and delivered to customers.</li> <li>• Since 1994 at least, with regard to some prepreg manufactured at Goshomiya Site, although it was specified in delivery specifications with customers that testing of gel time be conducted according to IPC standards, values were fabricated in a way deducting 15 seconds or 30 seconds from the measured values of testing conducted according to JIS standards, and false Inspection Reports stating them as testing results according to IPC standards were issued and delivered to customers.</li> <li>• Since April 1993 at least, with regard to some prepreg manufactured at Shimodate Site and Goshomiya Site, although it was specified in delivery specifications with customers that testing of resinous substances be conducted according to JIS standards or actual measurement methods, in practice testing was conducted by calculating testing results using fixed values of IPC standards, and Inspection Reports stating such measured values were issued and delivered to customers.</li> </ul>
	<p>Since 1994 at least, with regard to some prepreg manufactured at Goshomiya Site, although testing results did not meet the Company Standards<sup>[15]</sup>, if responsible workers for such Tests in Manufacturing Process made judgment that such deviation from standards were minor, and then test results were falsified and recorded in order to meet the standards, and false Inspection Reports based on these falsified test results were issued and delivered to customers.</p>

<sup>15</sup> Referring to standards or product specifications based on company rules and other regulations set forth internally (“Company Standards”).

Copper-clad laminates (Shimodate Site and Goshomiya Site)	<p>Since June 1993 at least, with regard to some copper-clad laminates, although it was specified in delivery specifications with customers that performance testing of each lot be conducted, in practice no such testing was conducted, and with regard to coating-cloth lots, which are intermediate products, and to lots which use the same copper foil and pressing machines for processing, only one lot (original lot) was tested, while inspections of other lots (small lots) were skipped, and false Inspection Reports, including those stating the results relating to the original lots as also to the small lots, were issued and delivered to the customers.</p>
	<ul style="list-style-type: none"> <li>• Since June 1993 at least, with regard to some copper-clad laminates, although it was specified in delivery specifications with customers that peel strength testing of copper foils be conducted according to JIS standards or IPC standards, in practice a different testing method (an testing method unique to Hitachi Chemical) was used, and Inspection Reports stating such testing results were issued and delivered to customers.</li> <li>• Since May 2007 at least, with regard to some copper-clad laminates, although it was specified in delivery specifications with customers that resistance to soldering heat testing be conducted according to JIS standards or IPC standards, in practice a different testing method (an inspection method unique to Hitachi Chemical) was used, and Inspection Reports stating such testing results were issued and delivered to customers.</li> </ul>
Encapsulants (Minamiyuki Site)	<p>Although Shipping Inspection was conducted based on inspection items in delivery specifications with customers, in practice pre-programmed certain mathematical formula was used and false Inspection Reports stating the fabricated testing results were issued and delivered to customers.</p>
	<p>Although Shipping Inspection was conducted based on inspection items in delivery specifications with customers, if testing results did not meet Customer Specifications, false Inspection Reports stating falsified figures in order to meet Customer Specifications were issued and delivered to customers.</p>
	<p>With regard to inspection items in delivery specifications with customers, no Shipping Inspection was conducted, and based on the testing results of raw materials supplied by raw material makers, testing results on the said inspection items were fabricated, and false Inspection Reports were issued and delivered to customers.</p>
	<p>With regard to inspection items in delivery specifications with customers, no Shipping Inspection was conducted, and false Inspection Reports stating falsified testing results on inspection items in delivery specifications, based on measured values of different inspection items, were issued and delivered to customers.</p>

Molding resins (Shimodate Site)	Since October 2008, with regard to some molding resins, if the testing results did not meet the Company Standards regarding inspection items in delivery specifications with customers, those figures in testing results were falsified in order to meet Company Standards, or testing results were falsified to meet the acceptance criterion, and false Inspection Reports were issued and delivered to customers.
Anisotropic conductive films (Goshomiya Site)	From around June 2017 until July 3, 2018, with regard to some anisotropic conductive films delivered to certain customers, a responsible inspector in the Manufacturing Department did not conduct testing on tack strength which was specified in delivery specifications with customers, and false Inspection Reports with fabricated testing results based on previous actual measured values were issued and delivered to customers.
Functional film products (Goshomiya Site)	<ul style="list-style-type: none"> <li>• From around 2005 until June 2018, with regard to some functional film products delivered to certain customers, if testing results of adhesive force did not meet Customer Specifications, false Inspection Reports stating testing results falsified by a responsible inspector in the Manufacturing Department in order to meet the Customer Specifications were issued and delivered to customers.</li> <li>• At least from around 2005 until around 2014, with regard to some functional film products delivered to certain customers, although it was specified in delivery specifications with customers that testing of adhesive force should take place at least 48 hours after the manufacturing, in practice testing was conducted by a responsible inspector in the Manufacturing Department soon after 24 hours in order to place priority on business efficiency, and thus Inspection Reports stating such testing results were issued and delivered to customers.</li> </ul>
Other inappropriate acts: 7 in total	

#### Characteristics of inappropriate acts at Shimodate Works

- For example, while inappropriate acts with regard to encapsulants was somewhat systematic misconduct, discussed and started by the development manager, manufacturing manager, and quality assurance manager, there were other inappropriate acts, for example, concerning prepreg, which were executed by personal judgment at the site, where information was withheld at a section chief level and the practice continued without the knowledge of people at manager levels. Thus, there was a contrast in terms of systematic misconduct and the scope of communication.
- Some of the falsification with regard to encapsulants was carried out with the knowledge of the deputy general manager of Works and two Executive Officers at that time (the incumbent Vice President is one of them).
- With regard to some of the products related to inappropriate acts at Shimodate Works, all or some of the Shipping Inspection was transferred to the Manufacturing Department.
- As inspections started to be conducted on the items on which Year-2008 Investigation revealed that no testing had been conducted, falsification began on some products records.

## Section 6 Matsudo Works

Overview of Matsudo Works	
History	<p>1960 Established as Matsudo plant of Hitachi Kako Co., Ltd. (At that time).</p> <p>1963 Absorbed into Hitachi Chemical Co., Ltd.</p> <p>1968 Spun off from powder metal products division, and became Matsudo plant of Hitachi Powdered Metals Co., Ltd.</p> <p>1985 Katori plant (currently Katori Site) was established.</p> <p>2014 Absorbed into Hitachi Chemical, and became current Matsudo Works.</p>
Related sites and manufactured products	<p>Matsudo Site: Powder metal products (machine components and bearings)</p> <p>Katori Site: Powder metal products (machine components), ink ribbons, and chemicals</p>
Facilities and personnel	<p>Book value of main facilities: 11,093 million yen</p> <p>Number of employees: 717</p>
Products affected by inappropriate acts	<p>Ratio of affected products in the overall Works sales: approx. 11.0%</p> <p>Affected customers: total number approx. 63 companies</p>
Overview of inappropriate acts	
Powder metal products in general (Matsudo Site and Katori Site)	<p>Since 1970s, with regard to powder metal products (including development phase products (prototype)) which did not meet Customer Specifications at Shipping Inspection, by following Factory Rules at Matsudo Works, officers above certain levels at the Quality Assurance Department decided to ship those products which did not meet Customer Specifications (internal concession), and further if Inspection Reports were requested by customers, false Inspection Reports stating falsified figures in order to meet Customer Specifications were delivered.</p>
Mechanical fuses (Matsudo Site)	<ul style="list-style-type: none"> <li>• Since around March 2005, with regard to some mechanical fuses delivered to certain customers, when the actual measured values of limiter breaking strength—one of the inspection items included in the advance evaluation to be conducted on the basis of agreements with customers—did not meet Customer Specifications, engineers in the Quality Assurance Department replaced samples subject to advance evaluation for submission to the customers with products from different lots manufactured previously, and they recorded the measured values of those lots, which met Customer Specifications, in the advance-evaluation request forms, and delivered them to the customers.</li> <li>• Since around December 2006, with regard to some mechanical fuses delivered to certain customers, an engineer in the Quality Assurance Department fabricated actual values of limiter breaking strength in the advance evaluation, using preprogrammed certain mathematic formula, then stated these values in the advance evaluation request forms, and delivered these to customers.</li> </ul>

	<ul style="list-style-type: none"> <li>Since around February 2004, with regard to some mechanical fuses delivered to certain customers, a worker at Matsudo Manufacturing Unit did not conduct measurement of limiter partial molding split density, which was an inspection item in the advance evaluation, and instead fabricated the actual values and stated them in the advance evaluation request forms and delivered to customers.</li> </ul>
Soft magnetic materials (Matsudo Site)	With regard to some soft magnetic materials delivered to certain customers, when actual values of glossy surface ratio or joint surface ratio did not meet Customer Specifications, Inspection Reports stating fabricated figures in order to meet Customer Specifications were issued by an inspector at the Quality Assurance Department and delivered to customers (Falsification of glossy surface ratio started from November 2013 at least, and falsification of joint surface ratio started from May 2012 at least).
Anode materials for consumer lithiumion batteries (Katori Site)	Since around February 2014, with regard to some anode materials for consumer lithiumion batteries delivered to certain customers, researchers at the Energy Storage and Tribology Materials R&D department did not conduct testing on inspection items such as oxygen content, nitrogen content, and total dissolved metallic impurity level, and false Inspection Reports stating fabricated figures were issued and delivered to customers.
Other inappropriate acts: 7 in total	
<b>Characteristics of inappropriate acts at Matsudo Works</b>	
<ul style="list-style-type: none"> <li>➤ With regard to powder metal products, “internal concession” based on the Works Rules has been conducted for a long time.</li> <li>➤ “Internal concession” was conducted in multiple departments such as the Quality Assurance Department, Powder Metal Development &amp; Design Department, to the knowledge of some of the past General manager of Works.</li> <li>➤ “Internal concession” was conducted on products not only at the mass production phase, but also at the development phase.</li> </ul>	

## Section 7 Saitama Works

Overview of Saitama Works	
History	<p>1962 Established as Saitama plant of Nippon Storage Battery MFG. Co., Ltd. (At that time).</p> <p>1967 Tokyo plant of Nippon Storage Battery MFG. Co., Ltd. was completely transferred to Saitama plant.</p> <p>1969 Became Saitama plant of Shin-Kobe Electric Machinery Co., Ltd. through the merger of Nippon Storage Battery MFG. Co., Ltd. and Kobe Electric Machinery Co., Ltd.</p> <p>2016 Absorbed into Hitachi Chemical, and became current Saitama Works.</p>
Manufactured products	Automotive batteries, electric power storage systems, DC power supply equipment, AC uninterruptible power supply, electric golf carts
Facilities and personnel	<p>Book value of main facilities: 4,216 million yen</p> <p>Number of employees: 402</p>
Products affected by inappropriate acts	<p>Ratio of affected products in the overall Works revenues: approx. 36.4%</p> <p>Affected customers: total number approx. 669 companies [<sup>16</sup>]</p>
Overview of inappropriate acts	
Automotive batteries	<p>At a time of design development of automotive batteries, certain inspection items (5-hour rate capacity, RC, high rate discharge characteristics duration, high rate discharge characteristics voltage, CCA, charge acceptance, and idling stop life; the items subject to inspection differed according to customer and product) did not meet specifications required by customers. However, since around 2005 at least, specification charts and other documents stating specification required by customers, even if they knew they failed to meet specification, have been delivered and approved by customers. Also with regard to testing at the design development phase, testing results were fabricated or falsified in order to meet specifications required by customers, and false test reports were issued and delivered to customers.</p>

<sup>16</sup> Aggregation was conducted according to the recommended usage period of the affected products.

	At least from around 1990 until September 2018, with regard to typical inspection items (5-hour rate capacity, RC, high rate discharge characteristics duration, high rate discharge characteristics voltage, CCA, and charge acceptance; the items subject to inspection differed according to customer and product) in delivery specifications with customers, both testing at the initial goods delivery and periodic testing were not conducted. Also when Inspection Reports were requested by customers, testing results were fabricated as if testing had been conducted, and false Inspection Reports stating the acceptance, were issued and delivered to customers.
Power supply equipment	At least from around 1991 until September 2018, with regard to rectifiers which constitute power supply equipment, although no testing was conducted on output constant voltage characteristic in cases where input (AC) frequency was set at rated value +5% and rated value -5%, testing results were fabricated and false Inspection Reports stating falsified results were delivered to customers.
Other inappropriate acts: 0 in total	
<b>Characteristics of inappropriate acts at Saitama Works</b>	
<ul style="list-style-type: none"> <li>➤ The General Manager of Works concealed from the management the inappropriate acts regarding the inspection of automotive batteries by Quality Assurance Department after the initial case press release.</li> <li>➤ Some automotive batteries not meeting certain required specification had been shipped.</li> <li>➤ Not only inappropriate acts regarding inspection by the Quality Assurance Department, but also some inappropriate acts by the Battery Development and Design Department at the design development phase was confirmed.</li> </ul>	

## Section 8 Hikone Works

Overview of Hikone Works	
History	<p>1962 Established as Hikone plant of Kobe Denki Seisakusho</p> <p>1969 Kobe Denki Seisakusho and Nippon Storage Battery MFG. Co., Ltd. were merged to form Shin-Kobe Electric Machinery Co., Ltd.</p> <p>2012 Shin-Kobe Electric Machinery Co., Ltd. became a wholly owned subsidiary of Hitachi Chemical)</p> <p>2016 Shin-Kobe Electric Machinery Co., Ltd. was absorbed into Hitachi Chemical, and Hikone plant became Hikone Works.</p>
Manufactured products	<p>Unit components (plastic gears, precision molding products, composite molded plastics, and sheet-formed products)</p> <p>Electronic materials (prepreg, copper-clad laminates, aluminum base PWB material, insulation laminates, mass laminates, etc.</p>
Facilities and personnel	<p>Book value of main facilities: 3,653 million yen</p> <p>Number of employees: 252</p>
Products affected by inappropriate acts	<p>Ratio of affected products in the overall Works revenues: approx. 75.6%</p> <p>Affected customers: total number approx. 78 companies</p>
Overview of inappropriate acts	
Precision molding products (impeller)	<p>During part of the period from at least around 2012 until around June 2018, in terms of one type of impeller produced at Hikone Works, although no testing was conducted on curing time and viscosity of molding materials of impeller which were required by agreements with certain customers, production history charts were prepared with fabricated test results as if the testing had been conducted, and delivered to those customers.</p>

Copper-clad laminates	<ul style="list-style-type: none"> <li>• From at least around 2002 until July 2018, with regard to copper-clad laminates products in general, although some of Shipping Inspection were not conducted on inspection items such as peeling strength, resistance to soldering heat, resistance to flame, insulation resistance and air heat resistance, which were required in delivery specifications with customers, those products were shipped, and further, in cases where the delivery of Inspection Reports was requested by customers, false Inspection Reports stating fabricated figures or falsified testing results, as if inspection had been conducted, were issued and delivered to customers.</li> <li>• From around October 2014 until around June 2016, as well as from around May 2017 until July 2018, with regard to some products of CEL series of copper-clad laminates, when testing results did not meet Customer Specifications on peeling strength—one of inspection items included in the Shipping Inspection to be conducted on the basis of delivery specifications with customers, figures were falsified and false Inspection Reports stating fabricated figures as testing results in order to meet Customer Specifications were issued and delivered to customers.</li> </ul>
Insulation laminates	<ul style="list-style-type: none"> <li>• From November 2012 until July 2018, with regard to some products of insulation laminates, although inspection items such as insulation resistance, heat resistance, specific gravity, and resistance to flame, were required to be included in Shipping Inspection and Inspection Reports on the basis of delivery specifications with customers, in practice no Shipping Inspection was conducted, and false Inspection Reports stating fabricated figures or testing results as if inspection had been conducted were issued and delivered to customers.</li> <li>• From at least around 2003 until July 2018, with regard to some products of insulation laminates, although inspection items such as insulation resistance, heat resistance, specific gravity, and resistance to flame were not required to be included in Shipping Inspection and Inspection Reports on the basis of delivery specifications with customers, false Inspection Reports stating fabricated figures or results as testing results were issued and delivered to customers.</li> </ul>

<p>Mass laminates</p>	<ul style="list-style-type: none"> <li>• From at least around May 2005 until October 2018, there were some instances where Shipping Inspections, set out by delivery specifications with customers, were not conducted at the frequency agreed with customers, and although no Shipping Inspection was conducted in such cases, false Inspection Reports stating fabricated figures or testing results as if inspection had been performed, were issued and delivered to customers.</li> <li>• From at least around July 2015 until July 2018, with regard to mass laminates, when testing results on shipping inspection items set out in delivery specifications with customers did not meet Customer Specifications, testing results were falsified and false Inspection Reports stating figures in order to meet Customer Specifications were issued and delivered to customers.</li> <li>• From around 1998 until around April 2017, when test results at a Test in Manufacturing Process did not meet Customer Specifications, false Inspection Reports stating falsified figures by excluding figures outside Customer Specifications were issued and delivered to customers.</li> </ul>
<p>Other inappropriate acts: 11 in total</p>	
<p><b>Characteristics of inappropriate acts at Hikone Works</b></p>	
<ul style="list-style-type: none"> <li>➤ For unit components and electronic materials, respectively, inappropriate acts of not conducting routine inspection in general were confirmed.</li> <li>➤ The main motivation for these inappropriate acts were explained as lack of time for inspections and testing due to the shortage of personnel, which led to the fabrication and falsification of the inspection and testing results.</li> <li>➤ Senior management was not confirmed as being involved in major inappropriate acts. It was generally seen that the senior managers were not capable of managing and supervising properly the work done by their subordinates, and there was no system or environment where their subordinates could report inappropriate acts to their managers.</li> </ul>	

## Chapter 5 Company’s Internal Control System

### Section 1 Rules and Regulations of Hitachi Chemical Co., Ltd.

#### 1 Classification of rules and regulations of Hitachi Chemical Co., Ltd.

Internal rules and regulations of Hitachi Chemical Co., Ltd., stipulated in “Regulations and Management Rules” [17] and its annexed table (1) “Content of Rules and Regulations, and Person Authorized to Plan, Establish, Amend, Abolish, and Promulgate the Internal Rules” are broadly classified according to the scope of the application as “Company-wide Rule” and “Factory Rule.”

As shown in Table 3, in “Company Rule” in “Company-wide Rules,” the general meeting of shareholders is defined as the person authorized to establish, amend and abolish the articles of incorporation, the board of directors is defined as the one to do the Rules of the Board of Directors and the Rules of Share Handling while president and CEO is defined as the one to do all other Company Rules. General Managers of responsible departments are defined as the ones to do the Hitachi Chemical Industrial Standards (C.I.S), the Corporate Business Standards (C.B.S), and the Departmental Rules which stipulate “Authorities to be delegated to the General Managers of responsible departments.”

In “Factory Rules”, general manager of factories are defined as persons authorized to establish, amend and abolish the most part of “Factory Rules” and the Hitachi Chemical Industrial Standards (C.I.S) and the Corporate Business Standards (C.B.S), however, in “operations, procedures, and standards for principal business for which related department and section of Works are responsible” of “Factory Rules,” the Managers of responsible departments of the factories are defined as the ones to do the regulations.

Table 3 Classification of rules and regulations of Hitachi Chemical Co., Ltd.

Classification according to the scope of the application	Classification	Description	Person authorized to amend and abolish the rule
Company-wide Rules	Company Rules	Articles of Incorporation	General Meeting of Shareholders
		Rules of the Board of Directors, Rules of Share Handling	Board of Directors
		All other corporate rules and regulations except the above (Basic Rules, Organizational Rules, HR Rules, and Business Management Rules)	President and CEO
	Departmental Rules	Regulations of basic-business-related authorities to be delegated to the General Managers of responsible departments, and their operations, procedures, and standards	General Manager of responsible department
	Hitachi Chemical Industrial Standards (C.I.S)	Standards to define form, size, and quality of products, materials and equipment	
	Corporate Business Standards (C.B.S)	Standards to define form, size, and quality of supplies and papers	

<sup>17</sup> Regulations and Management Rules, stipulating that president and CEO has authority to establish the rules, were established in April 1, 1963, and have never been amended since. According to persons concerned who undertook the interview surveys, even though there has been no inconsistency that may negatively affect business practice, some rules do not reflect the actual procedures. An example is the Article 16 which stipulates that “the person who plans to establish, amend and abolish the Company-wide Rules shall require approval of the General Manager of the Administration Department.” As the matter of stands, such person confers with the General Manager of Corporate Business Strategy Headquarters in charge of Legal Group

Factory Rules	Factory Regulations	Most of the Basic Rules, Organizational Rules, HR Rules, and Business Management Rules	General Manager of factories
		Operations, procedures, and standards for principal business for which related department and section of Works are responsible	General Manager of responsible department of Works
	Hitachi Chemical Industrial Standards (C.I.S)	Standards to define form, size, and quality of products, materials and equipment	General Manager of factories
	Corporate Business Standards (C.B.S)	Standards to define form, size, and quality of supplies and papers	

## 2 Summary

Rules and regulations of Hitachi Chemical Co., Ltd. are classified into two levels: Company-wide level and Factories level. As mentioned above, “Regulations and Management Rules” dealing with persons authorized to establish the rules have never been amended since its establishment in 1963, and inconsistencies have been found between the rules and the actual procedures in some areas.

Rules for Factories are established by individual factories and Sites. Hitachi Chemical as a whole has never conducted organizationally traversing check on introduction of and conformity to these rules. In addition, no department/section has ever checked consistency of them. [18] Rules relating to quality assurance are put in place by individual Factories and Sites to meet the requirements of ISO/IATF for which Factories and Sites have individually acquired the certificates. Accordingly, the intention of Hitachi Chemical headquarters may not be accurately reflected in respective “Factories Rules” in a timely manner in case that the headquarters need to develop advanced quality management system or amend company-wide rules and regulations.

In recent years, Hitachi Chemical has promoted a restructuring of organization through, for example, M&A of subsidiaries of Shin-Kobe Electric Machinery Co., Ltd. and other companies. Such subsidiaries seem to have followed the conventional rules and regulations even after merger. If Hitachi Chemical reviews the rules and regulations to prevent reoccurrence of inappropriate acts found in the Investigation, we consider that Hitachi Chemical shall also review authorities to establish rules and regulations at each level, and rebuild an organizational structure to ensure consistency among Company-wide Rules, Factory Rules and Factory Regulations, taking into account the current organizational structure.

<sup>18</sup> In case that Hitachi Chemical’s company-wide rules and regulations for quality assurance are amended, General Manager of CSR Quality Assurance Department requests each factories of necessary amendments or development of Factory Rules in accordance with the amendment, however, he/she has not checked if amendments or development were made as requested.

## Section 2 Organization Relating to Quality Assurance

### 1 Outline

Assignment of duties and responsible units relating to quality assurance is shown in Table 4. This table shows an example in Nabari Works.

Table 4. Duties assigned (in Nabari Works)

Headquarters	Responsible Unit	Duties assigned
Production Strategy Office	Production Integration Division Nabari Works Production Integration Division	1. Quality assurance in business units of Nabari Works
Energy Storage Business Headquarters	Quality Assurance Center	1. Handling quality assurance for batteries and related equipment 2. Handling regular audits related to nuclear power and quality and adopt new products 3. Promoting quality assurance activities including improvement of quality, activities for reducing defects and handling of Product Safety & Product Liability related laws and regulations
Corporate Business Strategy Headquarters	Quality Assurance Group CSR Quality Assurance Department	1. Contact point to handle inquiries about quality assurance from outside 2. Promoting activities to prevent Product Liability related accidents 3. Analyzing change in products quality in Hitachi Chemical Group and promoting improvement activities
Risk Management Center	Compliance & BCM Group	1. Promoting and ensuring compliance management of Hitachi Chemical Group 2. Promoting measures to oppose antisocial forces 3. Promoting measures against risks and crisis management 4. Maintaining information security
Risk Management Center	Auditing Office	1. Auditing Hitachi Chemical Group and providing proposals and supports for basic business improvement in Hitachi Chemical Group 2. Promoting internal control

No other provisions for assignment of duties and responsible units relating to quality assurance was found [19]. It is likely that authority and responsibility for quality assurance are not clearly allocated.

The interview surveys conducted by the Committee reveal that the Auditing Office does not directly audit quality of the products, but delegates it to CSR Quality Assurance Department which re-consigns it to Quality Assurance Center. So actually, Quality Assurance Center is in charge of auditing quality assurance of all products of Hitachi Chemical.

If such “multi-layered” commission is actually done, it means that the duties disregarding the assignment of responsibilities have been commissioned without necessary approval. In general, any delegating party is required to monitor the party to whom the auditing is delegated. It may, however, be gathered from the interviews that no such monitoring had been performed between the Auditing Office and CSR Quality Assurance Department or Quality Assurance Center.

It is possible that every level of the company places little importance on ensuring quality assurance. One reason for this seems to be the fact that Hitachi Chemical has not clarified where the authority and responsibility lie in terms of quality assurance.

## 2 Summary

Issues involved with the company’s authorization and responsibility relating to quality assurance in terms of design of internal control system are:

- Auditing Office is a subordinate unit of Risk Management Center and does not act under the direct control of President, which also is directed by the Audit Committee. In general, companies with nominating committee, etc. are required to make their audit committee and audit office closely coordinated to audit the condition of maintenance and operation of internal control. Hitachi Chemical, however, cannot be regarded to establish a system to make a close coordination in light of rules and regulations. This is partly because the actual audit activities are not clearly stated, which leads to ambiguity of duties and responsibilities assigned.
- Head of Risk Management Center holds the post of the head of Audit Office concurrently. Therefore, it is not assumed that Audit Office audits Risk Management Center and subordinating Compliance & BCM Group.
- Duties of Quality Assurance Department are not within the scope of monitoring performed by Audit Office.
- Of the Quality Assurance Department in a Works, the level of skills required of certain posts (general managers, chief engineers and expert engineers) in the field are not clearly defined. The system in which superiors supervise the execution of duties by subordinates is imperfect: superiors of engineers do not supervise the inspectors. The company lacks training to help employees acquire knowledge of products and inspections.
- As for rotation of HR in Quality Assurance Department, back office personnel [20] are sometimes transferred from R&D or manufacturing departments, however, rarely to other departments. This tendency may prevent personnel of other departments in the Works from understanding duties of quality assurance.

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<sup>19</sup> In the Investigation, we found that “Table 4. Duties assigned” is all that describes duties assigned relating to quality assurance and no rules and regulations stipulates authority and responsibility of each unit. In order to clarify where the responsibility and authority lie, we performed some interview surveys.

<sup>20</sup> Personnel who does not directly perform inspections: general managers, chief engineers, expert engineers, engineers, and planners

- Very vague chain of command for quality assurance among units of Business Headquarters confuses matters to be reported, results in lacking appropriate coordination.

### **Section 3 Company-wide Investigations for Quality Management**

#### **1 Year-2016 Product Audit**

CSR Quality Assurance Department, as the key role, jointly performed product audits from April to July 2016 (hereinafter referred to as “**Year-2016 Product Audit**”) with Quality Assurance Centers of Business Headquarters, primarily for the purpose of validating conformance to ISO 9001 requirements. According to the auditor of CSR Quality Assurance Department who implemented the Year-2016 Product Audit, another purpose of the audit was transmission of the auditor’s knowledge and experience of product audits to his/her subordinates, considering the auditor’s soon-to-come retirement and no appointment of his/her successor. Before the audit, the auditor had asked for approval of General Manager of CSR Quality Assurance Department and had been approved.

Works and Sites to audit were Nabari Works, Saitama Works, Hikone Works, Matsudo Works, and Noda and Tokushima Sites of Goi Works which had not undertaken product audits by 2014.

Prior to the audit, the auditor of CSR Quality Assurance Department prepared check lists of product audits, and directed each location subject to the audit to conduct Self-Audits [21] in accordance with the lists.

In response, from April to May 2016, the person in charge of each Works selected products to audit, conducted Self-Audits in a way of random sampling of products from respective arbitrary models. Then, he/she reported the results to CSR Quality Assurance Department.

After Self-Audit, one personnel each, appointed as the auditor, from CSR Quality Assurance Department and Quality Assurance Center of each Business Headquarters jointly conducted the one-day Audit[22] from May to July 2016. The quantity of products selected by each Works differs among Works, and only one or two sample(s) to audit was selected from arbitrary models of relevant products. In every Works, the auditors selected products and also samples for the Audit.

The Year 2016 Product Audit focused the auditor’s auditing documents submitted by Works. No original data nor workplace production processes was audited.

After completion of the Self-Audit and the Audit, the auditors from CSR Quality Assurance Department and Quality Assurance Center of each Business Headquarters said to direct, via the audit report and email, each Works to address defects identified during Self-Audit and non-compliance identified during the Audit. No follow-up for Works corrective actions, however, had been conducted by the auditors. The auditors believed they could judge that no serious defects nor non-compliance was identified with the results of the Year-2016 Product Audit. As a consequence, they said to report to the Executive Officer of CSR Quality Assurance Department that no serious issue was identified.

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<sup>21</sup>An audit covering a location that is conducted by the location itself. (hereinafter referred to as “**Self-Audit**”)

<sup>22</sup>An audit performed for each location by the CSR Quality Assurance Department or the Quality Assurance Center of each Business Headquarters. (hereinafter referred to as the “**Audit**”)

## 2 Year-2018 Product Compliance Audit

On December 4, 2017, in response to the successive occurrence of inappropriate cases of quality control, Japan Business Federation issued a statement titled “Response to Quality Control Irregularities” to its member companies and organizations, and called on them to conduct investigations of inappropriate acts and frauds regarding quality control on their own initiative including their related companies and affiliated group companies. The time limit for such investigations was not specified.

In response, the company president called on all manufacturing locations to conduct products compliance audits (hereinafter referred to as “**Year-2018 Product Compliance Audit**”) to check if data of Inspection Reports were falsified or not. CSR Quality Assurance Department, as the key role, was appointed to conduct the audit, however consigned the actual performance of the audit to Quality Assurance Center of every Business Headquarters.

The auditor of CSR Quality Assurance Department prepared check lists of products compliance audits beforehand, and directed the auditor of Quality Assurance Center of every Business Headquarters to conduct the Self-Audit and the Audit in accordance with the lists. The auditor of CSR Quality Assurance Department also called on to (1) investigate if data of arbitrary item number or lot were falsified or not after sampling; and (2) check if there were waivers (products), and shall also sample and investigate such lot of waivers, if appropriate. However, no detailed method of sampling and number of required samples were specified. It was planned that the time limits of the Self-Audit for products of domestic manufacturing locations were the end of January 2018, and of the Audit, the end of March 2018. Those for products of overseas manufacturing locations were the end of March 2018 and the end of September 2018, respectively. In reality, implementation of part of the Audit for overseas manufacturing locations have been left pending.

In response, the person in charge of each domestic Works conducted the Self-Audit of the products specified by the auditor from December 2017 to January 2018, and reported the results to respective auditor.

After Self-Audit, one to three personnel(s) each, appointed as the auditor, from CSR Quality Assurance Department and Quality Assurance Center of each Business Headquarters jointly conducted the one-day Audit from February to March 2018. The quantity of products selected by each Works differs among Works, and only one or two sample(s) to audit was selected from arbitrary models of relevant products. In every Works, the auditors selected products and also samples to audit. There were some cases where samples identical to those selected for the Self-Audit were selected to the Audit. Year-2018 Product Compliance Audit also focused the auditor’s auditing documents submitted by Works. No inappropriate act was identified nor reported to CSR Quality Assurance Department.

Lastly, summarizing the results of product compliance audits, CSR Quality Assurance Department reported that no issue was found at the Executive Officers’ Meeting held on May 11, 2018.

### **3 Summary**

CSR Quality Assurance Department, as the key role, performed the Year-2016 Product Audit and the Year-2018 Product Compliance Audit, however, no detailed method of selecting samples to audit was specified, except the stipulation that lot(s) of waivers shall be sampled, if applicable. Normally an auditor shall select samples to audit, however, some samples selected for the Audit were found to be identical to those selected for the Self-Audit. Actually, such samples were selected by the person in charge of each Works subject to the Audit. As number of required samples was not specified, only one or two sample(s) was selected per each product, which was insufficient quantity for sampling. No original data, including test data, was always audited.

Limited number of staff and time spared for conducting audits for each location subject to the audit is considered to be another cause of performing inadequate audits.

## **Section 4 Internal Reporting System**

### **1 Outline**

Internal Reporting System of Hitachi Chemical started its operation in November 2004. Rules and regulations which give a basis of the system is the Internal Reporting Rules.

Persons who can report are employees of Hitachi Chemical (including contract/temporary/fixed-term employees, part-timers and casual staff), contract workers from an agency working in Hitachi Chemical, employees of group companies, and contract workers from an agency working in the group companies at the time of reporting (Article 2 of the Internal Reporting Rules).

Compliance & BCM Group of Risk Management Center serves as internal and external recipient of informants' reports: "Contact Point of Internal Hot Line" and "Contact Point of External Hot Line" (Article 5 of said Rules. The Article stipulates that the reporting site is "CSR Office," which represents current Compliance & BCM Group of Risk Management Center). Hitachi Chemical outsources external consultation services to an external law firm.

Informants can report to internal consultation services through the exclusive page of HC-NET, post mail, direct lines, in-house mail, and email; and to external services through email and post mail.

### **2 Summary**

The company's Internal Reporting System conforms to the Internal Reporting Rules which stipulate the framework of Internal Reporting System, protection of informants, confidentiality obligation of the recipient of informants' reports, and obligation of officers and employees to cooperate for investigations.

Using various channels, the company is working toward widespread recognition of two points of contact: Internal Hot Line and External Hot Line. Even though the system had been introduced, the inappropriate acts, which were found in the Investigation, had gone unnoticed. With reference to the results of the interview surveys, we found that one reason why the inappropriate act had been left unnoticed was the employees' insufficient trust in the Internal Reporting System and its operation: the employees misunderstand that the system mainly covers harassment; they have little expectation that a notification resolves issues; in fear that the privacy of the informant is not protected and treated unfairly for the notification, many of them are discouraged from notifying.

## Chapter 6 Inappropriate Acts Revealed in 2008 and Status of Responses

### Section 1 Facts and Development of Inappropriate Acts Revealed in 2008

- 1 On August 21, 2008, Chairman Tetsuo Odashiro of the Audit Committee (at the time; hereinafter in this chapter, titles are those at the time unless otherwise stated) referred to a recent case at another company in which required items in Shipping Inspections had been omitted and inspection data had been fabricated, which that company said had been discovered through internal “self-inspections.” He instructed the Quality Assurance Office at the Headquarters (currently the CSR Quality Assurance Dept.) to ascertain whether anything similar had occurred at Hitachi Chemical. The Quality Assurance Office then instructed the managers of quality assurance department at all works to investigate whether there had been instances of (1) non-compliance with performance testing requirements for products certified under JIS or other certification, and (2) non-compliance with performance testing agreements with customers. (Hereinafter, issues identified in those investigative results are referred to as the “Year-2008 Issues.”)

Hitachi Chemical’s domestic works at the time were the Yamazaki, Goi, Shimodate and Goshomiya Works.

- 2 Later, results of self-inspections/self-assessments and follow-up investigations were integrated and, after an Executive Officers’ Meeting on September 22 had ended, the general manager of the Quality Assurance Office reported to those present on the investigative results below. Attendees on that day were Kazuyuki Tanaka, Vice President and Executive Officer; Kazuyoshi Tsunoda, Vice President and Executive Officer; Hiroki Sashima, Executive Officer; Yoshihiro Nomura, Executive Officer; Naoki Teramoto, Executive Officer; Shigeru Hayashida, Executive Officer, and General Manager of the Quality Assurance Section.

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|---|
| <ol style="list-style-type: none"><li>1) There was no non-compliance with performance testing requirements for products certified under JIS or other certification.</li><li>2) There were 33 instances of non-compliance with agreements with customers, broken down as follows (as of September 22):<ol style="list-style-type: none"><li>(1) Data reported but inspections not conducted: 21</li><li>(2) Data reported based on inspections of substitutes: 6</li><li>(3) Testing was of a decreased number (N) of samples, etc.: 6 [23]</li></ol>Total: 33</li></ol> |
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<sup>23</sup> This means that testing was less than was agreed with customers.

Business Sector	Products (No. of non-compliance cases)
Total in Advanced Performance Materials	9 products (13 cases)
Total in Automotive Products	-
Total in Electronic Materials	9 products (12 cases)
Total in Electronic Components Business Sector	7 products (8 cases)
Total in the entire company	25 products (33 cases)

When the above-mentioned attendees were told of the above results, they responded to the general manager of the Quality Assurance Office mainly with the following points:

- 1) Sectors that could effect corrections (inspections, changes to specifications) would start promptly.
  - 2) Sectors requiring great amounts of resources for correction would reconsider in the manner below.
    - (1) Consider internally whether or not delivery specifications could be changed or negotiate with customers
    - (2) Check proper resources (clarify deadlines)
    - (3) Start with possible inspections (inspectors to be, in principle, obtained internally)
  - 3) Consider whether measurements would be performed by borrowing inspection equipment or out-sourcing
- 3 On October 7, 2008, when the results in item 2 above were reported to President and CEO Yasuji Nagase (hereinafter referred to as “President Nagase”), he responded mainly with the following points:
- 1) Reporting without conducting the inspections is inexcusable.
  - 2) In order to prevent recurrence, investigate the two items below in all 33 cases.
    - (1) What was the real cause and why did they lie?
    - (2) Talk to the parties and find out who (real names) instructed what. The evil must be rooted out as soon as possible. Investigate these within one or two weeks.
  - 3) These cases are not “inappropriate acts”; they are crimes against customers. Fix our bad culture, straighten ourselves, and stop cheating.
  - 4) In doing corrections, when negotiating with customers, be careful about, for example, how to ask them.
- 4 On October 21, 2008, President Nagase received a report on how it happened, who gave instructions, etc. – new results of investigations since the report in item 3 above (as of this time, no new inappropriate acts were revealed) – and responded mainly with the following points:

1) Re-inspect non-compliant items

- (1) Cannot believe these things were continued from predecessors so easily. Not the work of quality assurance.
- (2) Show with evidence that re-inspection for whether or not there were other non-compliance items than the 33 cases was actually done.
- (3) Eliminate bad culture, and make certain all parties follow the rules.
- (4) “Placing priority on dealing with quality issues,” which was stated as a cause, was the correct judgment, but it was a mistake that rules were not revised to prevent non-compliance.

2) Measures [24]

- (1) Increasing the number of inspectors permanently cannot be approved because there has not been actual inconvenience to customers.
- (2) Properly carry out negotiations for revising specifications, etc.
- (3) For individual measures, follow up on each one by deciding responsible persons and deadlines.

5 Thereafter, apart from investigations of the Year-2008 Issues, on November 14, 2008, a customer visited a plant at the Sakuragawa Site of the Yamazaki Works to audit automotive products manufactured there. Shipment of rejected products after fabrication of inspection results and fabrication of trend data related to physical properties, etc. were then discovered (hereinafter referred to as the “**Sakuragawa Case**”).

In that case, an internal investigative committee was formed, and in February 2009 an investigative report including cause and preventive measures, etc. was presented at an Executive Officers’ Meeting. In the same month, the company administered disciplinary punishment to three employees involved in the Sakuragawa Case.

6 The Sakuragawa Case had not been included in the results of the self-inspections/self-assessments and investigations by works in the wake of the Year-2008 Issues – throwing into question the credibility of those earlier investigations by the works. Based on an instruction from President Nagase, on November 17, 2008, instructions to re-inspect were given once more to the Quality Assurance Department at each works (hereinafter referred to as the “Year-2008 Issue Re-inspection”). The results of the Year-2008 Issue Re-inspection were issued on December 19, 2008, and it was reported that no new inappropriate acts had been found.

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<sup>24</sup> Regarding this point, President Nagase responded to the Committee: “As it was a time when continuation of the company itself was threatened due to the Lehman Shock, the intention was to not approve an increase of people. It was never the intention to not increase people in disregard of the needs of quality assurance.”

7 The details of the Sakuragawa Case were presented at meetings of the Board of Directors, the Executive Officers and the Audit Committee, and recorded in the minutes of each. In contrast, no mention of the Year-2008 Issues is found in minutes of meetings of the Board of Directors, Executive Officers or the Audit Committee. Given this, there is no indication that the Year-2008 Issues were discussed at, or reported to, those bodies at that time. Similarly, there is no indication that punishment of officers or employees, including those with supervisory responsibility, was considered, and, in fact, no punishment was administered.

8 As for the Sakuragawa Case, later, based on the investigative report by the internal investigative committee, measures to prevent recurrence, including implementing compliance education and reviewing working processes, were taken. Meanwhile, as for the Year-2008 Issues, as preventive measures, starting in 2009, “product audits” were implemented by quality assurance department in each works.

In an internal announcement when product audits were conducted in January 2009, as seen below, only scandals involving foods and industrial products of another companies were cited as the motivation for introducing the product audit system, and no information at all on the Year-2008 Issues was included [25].

1. “Do you observe agreements with customers?” (extract from CSR News of Jan. 2009)

- Recently there have been many scandals, including data falsification on the quality of foods and industrial products. Some companies have been forced to exit the market. On this occasion, please check whether any misconduct is occurring at your workplace, and whether “Basics and Ethics” are being adhered to.
- Specifically, are performance tests agreed with customers faithfully implemented? Are there no changes to test conditions or test frequency? Are these matters regularly checked by product audits, etc.?
- Obviously, in discussions on standards before agreeing on delivery specifications with customers, a responsible person must monitor that standard values are decided with an understanding of process capabilities. After mass production is launched, such agreed items must be observed.

## **Section 2 State of Response to Year-2008 Issues and Evaluation**

1 On the Year-2008 Issues, as seen above, President Nagase demonstrated a strict attitude with remarks such as, “These cases are not ‘inappropriate acts’; they are crimes against customers,” and, “Fix our bad culture, straighten ourselves, and stop cheating!” He also said, “In doing corrections, when negotiating with customers, be careful about, for example, how to ask them,” and, “Properly carry out negotiations for revising specifications, etc.” President Nagase gave these instructions obviously assuming negotiation with customers as a method of correction.

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<sup>25</sup> The launch of “product audits” was positioned as a means to prevent recurrence in the wake of the Year-2008 Issues. If so, it is not natural that there was no mention at all of the Year-2008 Issues. It could be considered that, at that time, the company tried to hide the occurrence of the Year-2008 Issues internally also. As to this, however, investigations have led the Committee *not* to conclude that there was an intention to conceal.

Nevertheless, to the Committee, although the incidents revealed by investigations into the Year-2008 Issues involved the specific conduct of issuing, etc., false Inspection Reports to customers, President Nagase said to the effect that he never gave an instruction to tell customers that Shipping Inspections, etc., were not conducted, and *then* to deal with the situation.

At the time, no other Officers gave such an instruction, either. Explaining his reason for not instructing those in his charge to disclose the fact of inappropriate acts to customers, Vice President and Executive Officer Tsunoda, who was involved in dealing with the Year-2008 Issues as General Manager of the Advanced Performance Materials Business Sector, said, “I was concerned about overreaction as a result of immediately conveying the actual facts to customers. I think I instructed my subordinates to tell customers together with a solution.” Executive Officer Hiroki Sashima, who was involved in dealing with the Year-2008 Issues at that time as General Manager of the Electronic Components Business Sector, said, “I have no memory that officers discussed whether the company should convey to customers the fact that no inspections had been conducted”; “I did not instruct not conveying the fact to customers”; “I have no memory of instructing my subordinates to tell customers the fact”; “There must have been a feeling at the time that telling the fact would turn into something big.”

As seen above, after revelation of the Year-2008 Issues, instructions to immediately disclose the inappropriate acts to customers were not given by any member of management. In fact, the fact of inappropriate acts revealed in the Year-2008 Issues was never explained to customers. Later, however, they were dealt with in the manner of doing the inspections that had not been done, and more.

As has been stated above, as a result of measures being taken without explaining the fact of inappropriate acts to customers, new inappropriate acts began in the case of encapsulants at the Minamiyuki Site of the Shimodate Works. There arose gaps between fabricated inspection results and measured values after actual inspections were implemented, which company employees could not explain to customers. Employees then began a course of inappropriate acts in a new manner of altering inspection results [26]. Accordingly, it is recognized that not explaining the fact of inappropriate acts to customers in the process of dealing with the Year-2008 Issues was a cause of the new inappropriate acts.

- 2 The Sakuragawa Case was revealed at almost the same time as the Year-2008 Issues, for which an internal investigative committee was established and persons involved in the case were punished disciplinarily. Unlike the Sakuragawa Case, in the case of the Year-2008 Issues, there were not even discussions on punishment for participants. Information on the case was shared among almost no one other than those who became involved in the investigations in the Quality Assurance Department in the Works, and those in the Quality Assurance Center at the Hitachi Chemical Head Office. Consequently, in examinations by the Committee, there were many officers and employees who said they remembered the Sakuragawa Case as a critical matter, while, in the case of the Year-2008 Issues, most officers and employees said they had no memory even that there had existed such occurrences.

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<sup>26</sup> For details, please refer to 6 (4) a, “Fifth,” Chapter 4 of the Investigative Report (full text)\*

\*The full text of the report is publicly disclosed in Japanese only.

Additionally, at almost the same time, Hitachi Chemical was given a cease and desist order and more by the Japan Fair Trade Commission for unreasonable restraint of trade (cartel) prohibited under the Act on Prohibition of Private Monopolization and Maintenance of Fair Trade (Act No. 54 of April 14, 1947, including revisions thereafter) (hereinafter referred to as the “Anti-Monopoly Act”). Following this, the company has continually taken measures to prevent recurrence, including compliance education. No compliance education has been implemented for inappropriate acts revealed in the Year-2008 Issues.

As can be seen above, at Hitachi Chemical, the Year-2008 Issues have never been taken as an opportunity to prevent similar instances. Even after the Year-2008 Issues were revealed, the risk of inappropriate acts during inspections was never recognized by Hitachi Chemical as a critical threat to doing business.

- 3 As to the reason the Year-2008 Issues were not treated in the company at the time as a major issue, as shown in item 2 above, President Nagase spoke to the Committee to the following effect.

“On July 24, 2008, there was an on-site inspection of Hitachi Chemical by the Japan Fair Trade Commission for suspicion of violating the Anti-Monopoly Act (cartel) in sales of cross-linked foamed polyethylene sheets, and the company was occupied taking action on that matter. In addition, the Lehman Shock occurred in September 2008 and the company had to take company-wide action to deal with the business challenges resulting from it.” According to President Nagase, due in part to those circumstances, although he did not consider them a minor incident, he thought the Year-2008 Issues were not something on which the president himself had to take specific action, given that there were other critical issues.

Regarding President Nagase’s remarks in 2008 that “there has not been actual inconvenience to customers,” he and Vice President and Executive Officer Tsunoda said in the examination by the Committee that such remarks came from recognition that there had been no claims from customers about product defects and there were no problems with actual product performance. At Hitachi Chemical, the Sakuragawa Case was a case revealed by a customer’s evaluation that there was a problem with product performance, and it was understood at the company that it was a case causing customers actually to be troubled. In contrast, the Year-2008 Issues were recognized as *not* resulting in such failure of performance. That difference in recognition between the two cases is deemed by the Committee to have been the reason for the difference in handling them.

#### 4 Conclusion

In 2007, the year prior to the Year-2008 Issues, a lot of so-called food frauds related to places of origin, materials and expiration dates for meats, vegetables, confectionaries, fast food, etc., were revealed, and the public was keenly interested in fraud issues. (The 2007 “*kanji* of the year” was “deception.”)

At the time, although people were extremely concerned about dishonesty in terms of quality of food and other consumer products, no conspicuous cases of fraud or other quality-related dishonesty involved in Shipping Inspections for industrial products for business use had been revealed. It seems that the management of Hitachi Chemical at the time lacked sensitivity to the need to disclose the Year-2008 Issues to the public.

The Year-2008 Issues, however, involved conduct whereby false information was provided to customers. Once this was internally recognized, whether or not it was disclosed to the public, it was consistent with reason, even in the circumstances of 2008, that the fact be told to customers and an explanation given. Believing that because there had been no customer complaints, the products had no problems, and therefore no explanation was needed, was easy, loose thinking. It ignored what the quality assurance operation was supposed to be, and/or arose from “overconfidence” in quality.

Moreover, as has been described above, management determined very quickly that the Year-2008 Issues had caused no inconvenience to customers without talking with customers about whether they were experiencing quality issues. It tried to bring the matter to an end internally without explaining the dishonesty to the customers. This kind of response at that time was nothing but irresponsible. Management came to its conclusion that there were no defects in the final products without any grounds, slighting the customers in respect of a violation of contract, justified insofar as there was no inconvenience in regard to the final products – an attitude that could be called “complacent” when it came to quality.

As has been described above, management’s response to the Year-2008 Issues not only contributed directly to new inappropriate acts, for example, in sales of encapsulants at the Minamiyuki Site of the Shimodate Works, but disseminated the wrong message internally: that because no claims had been made by customers, the easy determination was that there were no problems with the final products. This ignores the nature of quality assurance operations and generates acceptance of slighting customers and ignoring compliance, even in the violation of a contract, if there are no defects in the final products.

Also, information on the Year-2008 Issues was not fully shared within the company as being a major concern, and the case was closed without implementing fundamental measures, including proper punishment of involved parties. This is considered the reason that an opportunity to sufficiently examine inappropriate acts, which might have existed at that time, was lost.

The Year-2008 Issues were not used as a lesson for preventing recurrence, and memories of the incident faded away and it has been forgotten.

In this respect, how the Year-2008 Issues were dealt with is considered by the Committee to be one of the major factors causing a series of inappropriate actions, which the Committee certified, to occur and to have continued.

## Chapter 7 Cause Analysis

In Chapter 1, paragraph 1.1 of the “Hitachi Chemical Group Codes of Conduct” (hereinafter referred to as the “Codes of Conduct”)[<sup>27</sup>], Hitachi Chemical gives first priority to the “provision of safe, high-quality products and services.” In particular, it states at the opening that the Group shall ensure that the quality of its products can meet customers’ needs.

However, the various types of inappropriate acts identified through the Investigation revealed that the Codes of Conduct became a mere formality. In Hitachi Chemical, quality assurance procedures are conducted in a manner that downplays the importance of agreement with customers and undervalues the attitude towards meeting the needs of stakeholders who trust the quality of its products. This tendency is evident when we look at its disrespect for delivery specifications, neglect of required inspections, and fabrication and falsification of Inspection Reports.

A major factor that apparently caused this is considered to be its company-wide organizational culture, which is characterized by: 1) overconfidence in, wishful thinking about, and disrespect for, the quality; 2) lack of accountability in view of the relevant supply chain; and 3) a tendency to obey or pretend to obey requests and pressures from customers (see Section 1 below).

Such company-wide organizational culture has led to issues such as a “lack of quality awareness on shop floor (Section 2),” “lack of effective quality assurance systems in place (Section 3),” and “inadequate systems to prevent and detect inappropriate presentations (Section 4).” These issues are considered to have caused, in combination with each other, numerous and long-continued inappropriate acts. The following paragraphs describe the details.

### Section 1 Company-wide Organizational Culture

Many of the inappropriate acts detected by the Committee through the Investigation were conducted on the shop floor, including Works-based quality assurance department. However, it should be first made clear that the below-mentioned corporate-wide organizational culture was the root and underlying cause of these inappropriate acts, which have been committed at all the Works of Hitachi Chemical, over such a long period of time, for such a large number of products.

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<sup>27</sup> The version of the Hitachi Chemical Group Codes of Conduct referred to in this Chapter is the one prior to the version revised on June 19, 2018. This is for the reason that the previous version covers most of the period during which the inappropriate acts were committed and repeated.

## **1 Overconfidence in, wishful thinking about, and disrespect for, the quality**

(1) As stated in Chapter 6 above, as a result of an internal investigation conducted in 2008 under the leadership of the Chairman of the Audit Committee, Hitachi Chemical found that inspection results had been fabricated and falsified in a multiple number of Works in violation of agreements with customers. However, for the reason that no complaints were received from customers, the then-management team determined that there were no issues with the quality itself. They did not give any instructions to disclose the inappropriate acts to customers. Rather, they allowed their staff to deal with the incident within the organization. Furthermore, at that time (2008), no information was provided about the inappropriate acts to share it throughout the Company, no recurrence prevention measures were implemented on an organizational basis, and no disciplinary actions against executives with oversight responsibility were considered, let alone actually undertaken. As a result, Hitachi Chemical failed to learn lessons from the incident occurred in 2008 and pass on the lessons to newer generations. Moreover, such a response made by the then-management team led to the groundless idea that “no complaints from customers mean no defects in finished products.” Such overconfidence in, and wishful thinking about, the quality disseminated false and misleading messages within the Company.

(2) In fact, many of the individuals interviewed by the Committee stated that they were confident in the performance of Hitachi Chemical products. They had a tendency to justify their inappropriate acts based on the notion that no performance-related inconvenience would be caused to their customers, even if the Shipping Inspection was not conducted in a proper manner. Such overconfidence in quality is deemed to be increased by a wishful thinking about the quality that, unless there are extraordinary circumstances, customers are unlikely to find issues in their own products, as a large portion of Hitachi Chemical products is not used as finished products but used for the production of other products. Such an attitude demonstrates not only a noncompliance with the purpose of quality assurance, which is to assure that the quality of shipped products meets customer specifications, but also disrespect for the quality itself and the fact that Hitachi Chemical's Codes of Conduct has become a semblance.

(3) Some quality assurance department personnel say that many of the properties subject to the Shipping Inspection do not directly relate to the safety, expressing a disrespect for non-safety-related properties. However, it is needless to say that, if a certain type of quality is agreed with a customer or expected by end users, it is subject to the quality assurance, albeit it does not directly relates to the safety.

For example, storage batteries are used as an emergency power supply. If they do not deliver necessary capacity in the case of emergency, the power supply does not work as expected and a danger may be posed to human safety. Likewise, powder metal products (manufactured in the Matsudo Works) and impellers (manufactured in the Hikone Works) are used as automotive parts. If they are shipped without meeting Customer Specifications, they may exert a negative impact on end products (automobiles). It is an underestimation of the quality assurance roles to leap into a conclusion that there are no safety issues, without taking into account end-product applications or performing adequate safety testing.

We consider that such overconfidence in, wishful thinking about, and disrespect for, the quality had been entrenched in the company-wide organizational culture.

## **2 Lack of accountability in view of the relevant supply chain**

(1) Principle 6<sup>[28]</sup> of Japan Exchange Regulation's "Principles for Preventing Corporate Scandals" states: "Be accountable in view of the relevant supply chain." The Explanation 6-1 describes that: 1) it is highly fruitful for companies to be fully aware of their roles across the supply chain—a span that extends all the way to the end customer; and 2) by recognizing their roles as relevant parties within their supply chains and fulfilling their roles accordingly, companies can better mitigate the negative impact that escalating scandals and conflicting responsibility arrangements can have on corporate value. As supply chains become increasingly multilayered and internationalized, companies are required to play more roles than those associated with direct business partners. It is most important for a company to fully understand the roles it should play in, and keep an eye on, the whole system of supply chain. Companies should have a perspective that the ultimate purpose of quality assurance is not only to meet their direct customers' needs but to assume responsibility, as a member of a supply chain, for end users in the downstream and other stakeholders who trust their products' quality.

(2) However, Works-based quality assurance departments failed to understand and recognize quality assurance roles they were supposed to play in the supply chain. They were only concerned about how they could handle complaints received from their direct customers and lacked the will to improve the quality by providing improvement proposals and other feedback to the design and manufacturing divisions in order to provide end customers with higher-quality products. These quality assurance departments were required to select actions they should take to fulfill their accountabilities not only for the closest customers but end users in the downstream of the supply chain, as well as stakeholders who trusted the quality of their products.

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<sup>28</sup> In a technical sense, Principle 6 deals with quality issues caused by business partners. However, the viewpoint described in the Explanation 6-1, which is referred to herein, is relevant to the analysis of the incident.

(3) In Hitachi Chemical, there was a lack of accountability in view of the relevant supply chain not only in the quality assurance division but also in the sales, development, and manufacturing divisions. They also lacked a sense of obligation to provide their customers with facts and figures obtained from inspections without making any alterations. For example, after this incident was discovered, an inappropriate act occurred at the Nabari Works in connection with valve-regulated lead-acid batteries for cycle applications (LL type). It was caused when the sales division learned from the Inspection Report that some batteries failed to pass the Shipping Inspection. They strongly urged the quality assurance department to show a “logic,” saying that they could not provide a convincing explanation to their customers. The quality assurance department responded to this by issuing a false Inspection Report. In the Saitama Works, the development division prepared and issued a false test results report about automotive batteries and determined that the batteries were ready for commercial production, knowing that the development-phase products were unable to meet customer specifications. This incident was caused by the division’s recognition that they must meet customer specifications and the duration of high-rate discharge characteristics would not have a significant impact on the battery as a whole. As to powder metal products, the development division was involved in the internal concession process by providing its opinion about whether the concession would cause functionality issues. It is undeniable that both quality assurance department and other divisions had a disrespectful attitude towards end customers, and such an attitude has been served as the background cause for the diverse inappropriate acts being committed for a long period of time.

Such a lack of perspective, in which quality assurance is considered to be a responsibility for the supply chain viewpoint, seems to have fostered the company-wide organizational culture.

### **3 Tendency to obey or pretend to obey requests and pressures from customers**

(1) Looking at the multiple number of inappropriate acts revealed by the Investigation, Hitachi Chemical chose to yield to demands for and pressure on unachievable specifications or control values agreed on with customers rather than directly tackling with them, for the fear of competitors depriving them of customers' orders. As a result, the Company falsified inspection results and committed other inappropriate acts to disguise its failure to meet specifications or control values agreed on with customers and pretend as if such specifications or values were achieved. Likewise, it committed inappropriate acts including the falsification of inspection results, neglecting the need to negotiate a revision of existing specifications or control values with its customers. This was because of its pessimistic idea that its customers' procurement departments did not necessarily have an extensive technical knowledge and therefore were unlikely to accept its revision proposal. For example, it was unable to resist a volume customer's request to deliver functional film products with certain property values close to the upper specification limit at the Shimodate Works. Consequently, it had a number of products exceeding the upper specification limit and falsified inspection results to disguise the non-conformance. In the Saitama Works, some staff members who were engaged in the inappropriate acts associated with automotive batteries stated that they committed such acts as they thought they had no power to change specifications required by automotive manufacturers and therefore they had no choice but to do what the manufacturers said. Other staff members said that the reason for their inability to tell the truth to their customers was not due to a motive of cheating them but the hardship they experienced in dealing with customers. The Yamazaki Works' inappropriate acts associated with CMP slurries were caused by the rigid control values that were set with customers in excess of the Works' process capabilities. The rigidity of these values led to the frequent occurrence of non-conforming products and caused the falsification of inspection results.

(2) Some quality assurance department staff said that the motive for the inappropriate acts was the pressure to meet deadlines agreed on with customers. Such a time pressure prevented them from conducting inspections as agreed with customers and taking necessary measures in the case of inspection results deviating from specifications. Their strict adherence to the delivery deadlines is illustrated by the following statements by staff members: 1) They did not want to cause inconvenience to their customers by reworking non-conforming products deviating from specifications and forcing them to change their production schedule (powder metal products in general at the Matsudo Works); 2) They prioritized deadlines rather than time-consuming third-party inspections (anode materials for consumer lithiumion batteries at the Matsudo Works); and 3) They were hesitant to stop imminent shipments of products with a short delivery time by revealing deviations of inspection results from specifications (copper-clad laminates at the Hikone Works). At the same time, it should be remembered that they tend to justify their inappropriate acts by referring to the pressure they felt when trying to meet delivery deadlines.

(3) On the other hand, multiple inappropriate acts were committed by those who pretended to give in to customers' demand, while secretly thinking that the deviations would not have any impact on the actual performance of the product, or customers would never find deviations unless they were defective products. Accepting customers' unrealistic request is an act far from a genuine customer-oriented attitude; rather, it should be seen as a betrayal of customer trust.

In the past, Hitachi Chemical received an administrative punishment due to its involvement in cartel activities (violation of the Anti-Monopoly Act). Reflecting on this, the Company has taken recurrence prevention measures to comply with the Anti-Monopoly Act. On the other hand, it avoided confrontation with customers and failed to respond to their requests and pressures by using orthodox approaches (e.g., efforts to improve its proposal-making capabilities and the level of business competitiveness). Rather, it pretended to obey customers while secretly betraying them. Such an attitude resulted in employees engaging in both cartel activities and the falsification of inspection data. In that sense, these cartel and falsification activities have the same root cause. Another possible remote cause of this series of inappropriate acts may be the failure to take countermeasures against the fundamental management issue of how to respond to demands and pressures from customers during the process of finding the cause of past cartel activities.

Such a tendency to obey or pretend to obey requests and pressures from customers fostered its company-wide organizational culture.

#### **4 Brief summary**

The aforementioned company-wide organizational culture led to the issues described in and after Section 2, and these issues collectively caused numerous and long-standing inappropriate acts.

#### **Section 2 Lack of Quality Awareness on Shop Floor**

Item (2) of Paragraph 2.3 "Relationships with Customers" of Hitachi Chemical Codes of Conduct states as follows: "We will communicate with customers sincerely, address defects and customer complaints quickly and in good faith, and strive to determine causes in order to eliminate them and prevent recurrence." However, the inappropriate acts revealed by the Investigation indicate that: 1) There was a lack of awareness of the importance of roles to be played by the quality assurance division, which are ought to contribute not only to customer relations but to the identification of defect causes and recurrence prevention; 2) Such a lack of awareness significantly paralyzed their normative consciousness; and 3) Quality assurance departments ceased to play their original roles and made easy concessions to requests from other departments and divisions. These factors are considered to have caused the inappropriate acts discussed herein.

## **1 Misunderstanding of Quality Assurance Departments' roles**

Originally, quality assurance departments are responsible for checking products' quality by conducting inspections in a proper manner within the Works they are assigned to, and performing quality control activities (operation and supervision of daily control systems within the Works) as a process subsequent to the designing and manufacturing, ensuring the quality of products to be offered to customers. They are originally supposed to respond to complaints by: 1) accurately identifying and analyzing quality issues found by customers through communications with customers and fact-finding surveys; and 2) providing the results to design and manufacturing departments, which are primarily responsible for taking corrective measures, as feedback and supporting their corrective efforts, thereby promoting quality control activities.

However, quality assurance departments placed their priority on the quick handling of customer complaints, straying away from their original purpose of conducting proper inspections and performing quality control activities. One employee said, "Basically, quality assurance departments need only limited manpower if there are no defective products." Consequently, quality assurance departments engaged in activities that violate or deviate from their original roles, including the adoption of improper inspection approaches, fabricating and falsifying Inspection Report data, and implementation of corrective measures on an arbitrary basis.

## **2 Paralyzation of cross-divisional normative consciousness**

One of the direct reasons for the inappropriate acts having been continued for a long time at each Works and taken over by a number of persons in charge without any criticism is the significant paralyzation of norm consciousness among quality assurance staff and their low level of psychological resistance against violations of laws, internal regulations, or agreements with customers (delivery specifications). These situations are attributable to the organization-wide misunderstanding of the quality assurance division's roles, as described under paragraph 1 above.

During the Investigation, we interviewed some staff members in charge of inspection (inspectors). Some inspectors said that they felt guilty about their involvement in the daily fabrication and falsification of inspection results and were very reluctant to continue their inspection duties. On the other hand, multiple inspectors said that, when they took over their position from their predecessors, they were taught to fabricate inspection results as one of their regular duties, and that they didn't recognize it was a misconduct.

Moreover, multiple Works' managers (including managers of quality assurance departments) were involved in the inappropriate acts, indicating that the paralyzation of norm consciousness was prevalent even in the Works' senior management.

Sometimes they tried to correct inappropriate acts. However, such an attempt was done by concealing previous acts, without notifying the fact to relevant customers. For example, in August 2016, it was determined internally that the inappropriate acts related to the falsification of CMP slurry inspection results, which occurred at the Yamazaki Works, should be corrected. However, no report was made to the customers for the reason that reporting past falsifications would cause unnecessary confusion and inconvenience to customers, and the correction efforts were never completed.

As mentioned above, in Hitachi Chemical, various divisions ranging from sales and development to manufacturing, have been involved in inappropriate acts related to the falsification of inspection results, etc. In these cases, it is clear to a certain extent that the quality assurance divisions were forced to follow decisions made under the leadership of the sales, development, and manufacturing divisions. That is, the true issue lay in the lack of normative consciousness in the sales, development, and manufacturing divisions.

It cannot be denied that such a lack of sufficient norm consciousness in relevant divisions prevented the issue from being solved fundamentally.

### **3 Concessions to other divisions by Quality Assurance Departments**

Being designed to perform quality control activities, the quality assurance departments are responsible and accountable for the inspection results. Even if the inspection results are not acceptable to other divisions, they should seek understanding of such results from other divisions by offering as thorough explanations as possible based on the facts and data.

However, in reality, as demonstrated by the occurrence of inappropriate acts at the Nabari Works after the reveal of the Initial Case, it was sometimes the case that the quality assurance departments made easy concessions to apparently inappropriate requests from other divisions by abdicating their accountability for the inspection results. Indeed, in these cases, the problem lay in other divisions as they played a leadership role in making apparently inappropriate requests. However, the quality assurance departments are also blameworthy for their lack of awareness about their original quality assurance roles, as well as their lack of willingness to accept the responsibility for inspection results.

## **Section 3 Lack of Effective Quality Assurance Systems in Place**

In Chapter 1, paragraph 1.1 (3) of its Codes of Conduct, Hitachi Chemical declares that it will design and implement an effective quality management system to offer products and services with a high level of quality and safety. However, in reality, it has failed to effectively deal with: 1. Deficiencies in the design of organizations that assume quality assurance responsibilities; 2. Lack of grounds and background reasons for delivery specifications, rules, and management standards; and 3. Lack of sufficient human resources and facilities. This failure is considered to be a cause of the inappropriate acts.

### **1 Deficiencies in design of organizations that assume quality assurance responsibilities**

#### **(1) Absence of a grand design**

As mentioned above, Hitachi Chemical has declared in its Codes of Conduct that it will implement an effective quality management system. However, in reality, it has failed to draw a complete grand design on how the Company develops an effective quality assurance system.

In Hitachi Chemical, quality assurance responsibilities are assumed by the CSR Quality Assurance Department at the Corporate Business Strategy Headquarters level, Quality Assurance Centers at the Business Headquarters level, and quality assurance departments at the each Works level. However, their roles and responsibilities are unclear because, as mentioned above, there is no clear separation of quality assurance duties to be performed by respective units in Hitachi Chemical. In addition, they are not provided with human resources and authority they deserve for their roles and responsibilities, and the relationship among these Departments and Centers remains ambiguous. They were indifferent about what quality assurance roles and responsibilities should be assumed by their own Department or Center, and most of them were characterized by an irresponsible attitude.

First, among duties of the quality assurance departments, Shipping Inspections are performed by the quality assurance department or other divisions, depending on the Works. In other words, the scope of duties assigned to the quality assurance department differs from Works to Works. The Quality Assurance Centers have individuals who were transferred from a Works-based quality assurance department to perform quality assurance activities in cooperation with the Works' quality assurance department through the QA patrol, etc. These individuals are also responsible for identifying inappropriate acts as part of product audit, although it has not been confirmed whether they possess independence and expertise required for an auditor, which indicates inconsistency in the roles the Quality Assurance Centers should play in the quality assurance system. Furthermore, while the CSR Quality Assurance Department assumes the role of supervising quality assurance activities at the corporate level, members of the Department said, "It is not a role of our Department to go down to the shop floor and find issues by ourselves," "There was no reporting relationship between our Department and the Quality Assurance Centers," and "Basically, we do not give instructions to a Works-based quality assurance department." These statements illustrate that the CSR Quality Assurance Department does not understand the roles it should play in Hitachi Chemical's quality assurance system as a whole or makes light of them. In fact, the Department did not play any role to correct inappropriate acts, as it removed the quality assurance departments from the scope of audit while knowing that they committed such acts in the product audits, and did not report audit results to responsible members of the board.

This made it unclear who are responsible for the quality assurance duties.

As mentioned above, Hitachi Chemical lacks a grand design that shows how the Company should achieve its quality assurance goals. Such a lack of a grand design has not only prevented the Company from defining roles to be assumed by quality assurance-related units and allocating authority and financial and human resources necessary to perform such roles, but also demotivated individuals who belong to respective units to engage in quality assurance. As a result, quality assurance staff continued to follow existing approaches and devoted themselves to the handling of complaints at hand from day to day. On the other hand, the quality assurance duties became mere formality, and the staff repeatedly issued improper Inspection Reports without being equipped with adequate inspection facilities.

The Company's failure to draw a grand design for the quality assurance is ultimately attributable to the aforementioned company-wide organizational culture, in which the management team, who are in a position to draw a grand design, underestimated the importance of quality and paid little attention to quality assurance.

**(2) Lack of independence and supervision over Shipping Inspection duties**

The Shipping Inspection is performed by a Works-based quality assurance department. It is the last resort to ensure the product quality promised to customers. In other words, the quality assurance department is originally expected to perform a Shipping Inspection with a strong sense of mission not to make any alterations to objective results of the Inspection, even if it may lead to a delayed product shipment resulting in a customer complaint. Accordingly, when performing the Shipping Inspection, quality assurance departments must be completely independent from the intentions of sales and manufacturing divisions and be strictly separated from their organizations.

However, Hitachi Chemical has an organizational structure that prevents quality assurance departments from achieving their independence in performing the Shipping Inspections. That is, at the Shimodate Works and a part of Goi Works, some inspection duties were transferred from the quality assurance department to the manufacturing department and assigned to inspectors who belonged to the manufacturing department. However, these inspectors were not supervised by a member of the quality assurance department to ensure the independence of the Shipping Inspection duties. At the Goi Works, the inspection duties were transferred to the manufacturing department and then outsourced to a consolidated subsidiary, making it more difficult for the quality assurance department to exercise control. The Shimodate Works has a prescribed workflow for some inspection items, which contains both an in-process testing and a Shipping Inspection by the quality assurance department. However, in reality, the quality assurance department issued Inspection Reports using the results of the mid-manufacturing inspection performed by the manufacturing department. Given this, the quality assurance department was far from independent in its performance of the Shipping Inspection duties. One inspector said that, after the transfer of the inspection duties to the manufacturing division, it became difficult to urge manufacturing section members of the same manufacturing division to suspend a shipment of non-conforming products, compared to the days when the inspection duties were performed by the quality assurance department.

As mentioned above, the Company has an organizational design or business practice that provides no clear functional division between the manufacturing divisions and the quality assurance divisions, jeopardizing the independence of the quality assurance divisions. We consider that such a design or practice has led to the occurrence of the inappropriate acts.

### **(3) Inefficiency of cross-divisional quality assurance activities**

A product's quality is defined by the quality required by customers (sales), design quality (design), manufacturing quality (manufacturing), storage quality (quality assurance), inspection quality (quality assurance), shipment quality (production control), and installation/service quality (service). While most of these qualities are achieved by respective Works, they are poorly motivated to improve product quality by improving these qualities en masse. Accordingly, they are not very eager to engage in cross-divisional activities to improve product quality, or activities to find comprehensive solutions for quality issues emerged within their own Works. The backdrop to this is the inefficient design of organizations that engage in the Works' cross-divisional quality assurance, including the Works' policy on how to achieve its quality assurance goals.

In addition, due to the Company's organizational structure, each Works, manufacturing divisions, and quality assurance divisions are supervised by the Production Integration Division, while design development divisions are supervised by the R&D Headquarters. This makes each Works' head unable to lead business innovation and improvement initiatives by the design divisions, even in cases where an issue is found within the design divisions. Such a lack of leadership exerts a negative effect on the solution of cross-divisional quality issues and improvement activities within the Works. This is also attributable to the ambiguous design of the quality assurance organizations, including the policy on how to achieve cross-divisional quality assurance goals.

### **(4) Weak audit and management mechanisms for quality assurance**

The CSR Quality Assurance Department played a leadership role in the Year-2016 Product Audit and the Year-2018 Product Compliance Audit. However, as described above, these audits were not effectively performed. The CSR Quality Assurance Department had expertise neither in the products to be audited, which was necessary to perform an audit, nor in the audit assignment. The Department had the Quality Assurance Center conduct these audits, but the Center was not sufficiently independent from auditee divisions as all members of the Center were those who had been transferred from the auditee divisions. Moreover, in the Year-2016 Product Audit, the CSR Quality Assurance Department did not have neutrality and objectivity necessary to conduct an audit. This is evident from the fact that, despite part of the inappropriate acts having been reported to its head, the Department neither included these acts in the scope of audit nor issued an audit report. Incidentally, in its product audit, the CSR Quality Assurance Department omitted the product quality verification (performance verification), which was the original purpose of the product audit, and conducted a system audit only for specific types of products. This limited scope of audit, which was almost equal to that of an ISO 9001-based internal audit, made it difficult to detect inappropriate acts.

Original data output from inspection devices, etc. must be managed and stored properly as underlying data for quality control activities. However, most of the inspection devices did not have a mechanism for mechanically storing original data. This led to careless record-keeping practices under which original data was not stored, discarded or deleted, or stored in an unverifiable state. That is, the Department did not have a system that can be employed to examine any fabrication or falsification of original data retrospectively, resulting in it being unable to check inappropriate acts efficiently. This allowed flourishing of Inspection Report fabrications and falsifications.

Such a weak original data management system not only encouraged commitment and concealing of inappropriate acts but provided and created more opportunities to commit inappropriate acts discussed herein.

#### **(5) Extremely long-term personnel assignment**

Most members of a Works' quality assurance department are staying in their current position for a long time, as such personnel are reshuffled at a low frequency. This demotivates them to make improvements to existing ways of work, creating a tendency among them to solve issues within the Works even if an inappropriate act is detected, and not to report to the outside party (Hitachi Chemical's Head Office). In addition, at the Yamazaki Works, for instance, one employee occupies a position of inspecting a specific product for as long as 20 years during which the inappropriate acts were committed. This means that a personnel reshuffle takes place very infrequently in the quality assurance departments.

The Initial Case was revealed when a newly-appointed General Manager of the Works, who is not from former Shin-Kobe Electric Machinery Co., Ltd., received a report about the incident from the head of the quality assurance department and submitted the report to Hitachi Chemical's Head Office. The head of the quality assurance department was the person who was transferred from a location outside the Nabari Works and began to disseminate (although in a limited manner) information to various parties. If such personnel changes did not take place, it is likely that the inappropriate acts identified in the Investigation had been concealed and held within each Works.

As mentioned above, we identified an issue of extremely long-time assignment at each Works, which has prevented divisions' business improvement efforts and the reporting of risk information to Hitachi Chemical's Head Office.

## **2 Lack of grounds and background reasons for delivery specifications, rules, and management standards**

It seems that each Works has a workplace environment in which work processes are performed unthinkingly, in a manner as set by predecessors, and the grounds and background reasons for delivery specifications, rules, and management standards are unclear (lack of the “Know Why” mentality). This is evident, in terms of the relationship with the inappropriate acts revealed in the Investigation, when we look at delivery specifications and inspection standards set forth for the in-process testing.

A delivery specification is an important contract document constituting an agreement with a customer, any violation of which will result in the party being liable to the customer for default. It is the development division who is to reach an agreement with customers about the delivery specifications and assume responsibilities for the specifications issued and delivered as agreed. Delivery specifications issued by the development division describe in detail required product property specifications. However, there is particular ambiguity in the description of matters concerning inspection contents and the Inspection Report.

For example, Industrial Battery R&D Department of R&D Headquarters which is located in the Nabari Works’ is responsible for issuing delivery specifications. However, there is no evidence that the Department fully examined whether the Inspection Reports (including inspection contents) were described in enough detail and whether the inspection was feasible for the Nabari Works. In this sense, the Department has very little consciousness not only about the description of the delivery specifications but also about their positioning. The Nabari Works has a process in which the quality assurance and other departments, who are to actually perform duties in accordance with the delivery specifications, agree on the delivery specifications’ contents with customers and issue specifications to the customers. However, systems associated with the process did not work efficiently. Such a situation resulted in ambiguous agreements with customers and unachievable delivery specifications being agreed on with customers, which may serve as a cause for inappropriate acts.

These Works were undermotivated to undertake quality assurance and quality improvement efforts based on scientific and technical grounds.

## **3 Lack of sufficient human resources and facilities**

We identified that, in Hitachi Chemical’s Works, the quality assurance divisions and manufacturing divisions were not equipped with sufficient human resources and facilities necessary for the inspection. This is one of the direct factors that caused a number of inappropriate acts. These quality assurance departments and the General Managers of Works failed to undertake efficient measures to remedy such insufficiency of human resources and facilities. Moreover, there was a complete lack of understanding and consciousness among the management teams about the need for investing in the Shipping Inspection duties.

In the case of the Nabari Works, for example, one of the causes of the inappropriate acts was that the Works had no human resources and facilities necessary for performing inspections described in the Inspection Report. Likewise, in the Hikone Works, inspectors were appointed to a managerial position and assigned to managerial duties. As a result, due to the lack of sufficient man-hours,

they discontinued undertaking inspections. Some personnel of the Goi Works stated that no consideration was given to the need to increase the number of inspectors due to fears of possible cost increase. In the Goi Works, the quality assurance department's budget is subject to the product group-based profit and loss management. For this reason, less budget was allocated by the quality assurance department to less-profitable or poorly-selling product groups. As described above, in Hitachi Chemical, there was a lack of sufficient human resources and facilities at its Works-based quality assurance divisions. On the other hand, however, the quality assurance departments did not urge their General Manager of Works' and management team to provide them with sufficient human resources and facilities. For example, the Nabari Works tried to remedy the inappropriate acts, but its lack of necessary and sufficient human resources and facilities was not solved for long time, as the quality assurance department was not bold enough to urge the provision of more resources and facilities even if its past inappropriate acts were discovered.

The cause lies not only in the quality assurance departments but in the negligence and self-protection of past and current heads of Works, who knew the need of enhancements but neglected efforts to solve the distress of the quality assurance departments.

#### **Section 4 Inadequate Systems to Prevent and Detect Inappropriate Presentations**

In Chapter 1, paragraph 1.2 (5) of its Codes of Conduct, Hitachi Chemical declares, "We will avoid improper expressions and use fair and appropriate representations and expressions in accordance with social justice and public order and good morals."

However, its Works violated these Codes of Conduct by committing inappropriate acts for a long period of time as revealed in the Investigation, in which they provided its customers with Inspection Reports that contained false facts. We consider that it was one of the causes of these inappropriate acts that Hitachi Chemical failed to prevent, discover, and remedy these inappropriate presentation practices. The paragraphs below provide specific details.

##### **1 Deficiencies in systems to control risks associated with inappropriate presentations**

Following a disclosure of a data fabrication/falsification incident by a company in the autumn of 2017, Japan Business Federation issued an alert to its member companies to this specific type of fraud. In 2015 and 2016, issues related to the product quality, etc. were disclosed by other companies and made headlines. Hitachi Chemical should have learned lessons from these cases and developed systems to identify, prevent, or detect the risk of this type of fraud (fabrication and falsification of inspection data). Furthermore, as mentioned above, Hitachi Chemical learned in 2008 that a number of acts similar to the inappropriate acts revealed in the Investigation had occurred in the Company.

However, despite these opportunities, Hitachi Chemical did not fully recognize the risk of inappropriate acts, including fabrication and falsification of inspection data, being committed within its organization. As a result, the Company has not been very successful in developing an effective system to control risks associated with such acts, and failed to prevent these inappropriate acts from continuously being committed.

## **2 Failure of Year-2018 Product Compliance Audit**

Hitachi Chemical conducted the Year-2018 Product Compliance Audit in response to the request from Japan Business Federation, which was made following a series of misconduct regarding quality control occurred in Japanese companies. However, Hitachi Chemical unthinkingly assigned the audit to each Business Headquarters' Quality Assurance Center. Considering the quality of the audit approach (e.g., the selection of samples was sometimes left to auditees, the audit was conducted within a very short period of time using an extremely small number of samples, original data was not necessarily confirmed, etc.), it is doubtful whether the Company was aware of the risk that quality assurance-related inappropriate acts (like those identified in the Investigation) might occur in its organization.

It is considered that such inefficiency of a quality assurance-related audit also served as a cause for the successive occurrence of inappropriate acts.

## **3 Deficiencies in operation of internal reporting system**

In response to the questionnaire conducted by the Committee, a number of inappropriate acts were reported by officers and employees of Hitachi Chemical and its domestic consolidated subsidiaries.

As part of its compliance program, Hitachi Chemical implemented an internal reporting system, expecting that any compliance violations would be escalated to the management team through the internal reporting system and examined for correction. However, in response to our question about reasons for not using the internal reporting system to report the inappropriate acts revealed by the Investigation, one employee answered, "I wondered whether my anonymity would be guaranteed, so I was worried if I used the internal reporting system, I might suffer disadvantages." Another employee said, "I thought the internal reporting system was designed for those who suffer from harassment and the like." These statements show that the internal reporting system had been neither sufficiently recognized among employees nor fully trusted by them in terms of its operation. As a consequence, no inappropriate acts were escalated to the management team through the system or corrected as a result of such escalation.

It is considered that such deficiencies in the operation of internal reporting system also contributed to the continuous occurrence of the inappropriate acts.

## **Section 5 Questionnaire Survey Results**

In the process of the Investigation, the Committee sent a questionnaire about the factors of inappropriate acts uncovered in the Nabari Works, to officers and employees of Hitachi Chemical and its domestic consolidated subsidiaries in a manner described in Chapter 1, Section 6-4 hereof. As a result, 42,361 gross responses were received from 9,743 respondents on the following questions. These responses were used to analyze the said causes.<sup>[29]</sup> The breakdown is shown below.

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<sup>29</sup> Please note that the questionnaire's response alternatives were set before the inappropriate acts at the development phase or in the development division were found.

[Questions (Question 5)]

Please check (✓) applicable box (es).

(Check all that apply.)

What factors do you think caused these inappropriate acts (the fact that internal testing/inspection method was adopted for some types of industrial-use lead-acid batteries instead of shipping testing/inspection method agreed with customers concerning battery capacity, and that Inspection Reports were submitted to customers with data different from that actually measured)?

[Response]

No.	Alternatives	Number of checks	Percentage
Company-wide organizational culture		19,567	46.2%
1	It was considered inappropriate acts would not influence products' performance or cause troubles to customers.	3,843	9.1%
2	Priority was placed on profitability and cost reduction instead of the quality of quality assurance procedures (e.g., testing and inspection).	3,793	9.0%
3	It was unable to reject customers' requests for quality specifications and delivery time even if they were unattainable.	2,947	7.0%
4	The Works failed to share issues faced by its quality assurance division due to lack of communication among employees and divisions.	2,819	6.7%
5	The quality assurance division was unable to turn down requests and pressure received from the sales division concerning quality specifications and delivery time.	1,862	4.4%
6	The quality assurance division was unable to turn down requests and pressure received from the manufacturing division concerning quality performance and compliance with delivery deadlines.	1,753	4.1%
7	The manufacturing division connived at the falsification of testing/inspection results by the quality assurance division.	1,748	4.1%
8	Members of the quality assurance division had lower morale as they had lower expectation and evaluation from the Works compared to the manufacturing division.	802	1.9%
Quality consciousness on the shop floor		4,248	10.0%
9	There was only a limited awareness of quality assurance compliance due to a lack of employee education on quality assurance.	3,088	7.3%
10	Customers accepted falsified Inspection Report data without question as their receiving inspection was insufficient.	1,160	2.7%
Lack of effective quality assurance systems in place		5,943	14.0%
11	Due to a lack of sufficient human resources, the quality assurance division was unable to take sufficient time for testing and inspection.	2,817	6.6%
12	Due to a lack of sufficient facilities, the quality assurance division was unable to perform testing and inspection adequately.	1,701	4.0%
13	Due to a lack of sufficient employee training on quality assurance, quality assurance staff had only limited skills.	1,425	3.4%

Inadequate systems to prevent and detect inappropriate presentations		9,966	23.5%
14	Internal systems were too weak to prevent test/inspection results from being tampered.	2,479	5.9%
15	Other divisions were unable to detect the falsifications as the quality assurance division performed the testing/inspection process in a black box.	2,305	5.4%
16	Due to the infrequency of personnel change in the quality assurance division, fraudulent activities were continued by experienced personnel and remained uncorrected.	1,923	4.5%
17	Internal auditors failed to detect falsifications committed by the quality assurance division as the audit was conducted only superficially due to a lack of independence and shortage of time.	1,855	4.4%
18	Internal auditors were too underskilled to detect inappropriate acts committed by the quality assurance division.	1,404	3.3%
Others		2,637	6.2%
19	Don't know	2,196	5.2%
20	Other factors	441	1.0%
		42,361	100%

The results of the questionnaire above and individual opinions show that Hitachi Chemical's employees consider the issue, which occurred within the Company, as an issue to be faced in a company-wide manner rather than by the quality assurance department only.

The following is an individual opinion we received. It is only an opinion, but seems to point out the fundamental cause of the numerous inappropriate acts that occurred in Hitachi Chemical. We therefore would like to present the opinion at the end of the cause analysis.

“I think they are not fully aware that customers pay money to purchase our products. We should always look at things from a consumer's perspective and regain the pride as a ‘manufacturer and provider’ of products of values to customers. I think this applies not only to the quality assurance divisions but to the manufacturing and development divisions [sic].”

## **Chapter 8 Recommendation for Prevention of Recurrence**

### **Section 1 Reform of Company-wide Organizational Culture**

#### **1 Reforming mindset of awareness for product quality and leadership of the management**

The recently-revealed series of inappropriate acts was given rise to by the organizational culture that spread over the entire company and can be summarized as “overconfidence in, wishful thinking about, and disrespect for, the quality.” Such company-wide organizational culture was generated by no one but the past management members of Hitachi Chemical.

The management, first of all, should admit in good faith that their past words and actions reflected the “overconfidence in, wishful thinking about, and disrespect for, the quality” and that the way of thinking that spread over the entire organization to consider that “there exists no issue to note in the product quality so long as no claims are made from the customers” is wrongful (even if it conflicts with the agreement reached with the customers). And how such an organizational culture was generated should be thoroughly examined to sum up the past mistakes.

Further, the reform of mindset toward product quality should be prosecuted under the strong leadership of the management. During the process of such a reform, the employees may have to face the sales decreasing due to loss of orders, the profits being curtailed due to the increased cost or other unfavorable circumstances which will make it difficult for the employees to decide which direction to go. Even in such phases, the management should firmly maintain its attitude and continue to send their message that they will resolutely carry out the mindset reform toward product quality, exerting leadership all the way for accomplishment of the mindset reform.

#### **2 Awareness of accountability in view of the relevant supply chain**

As was already emphasized in Chapter 7, Section 1-2, Hitachi Chemical should be aware of its responsibility for the product quality owed to the entire supply chain: not only the direct customers but also the final customers at the downstream of the supply chain, or the stakeholders who put their trust on the quality of the products of the company.

The responsibility for the product quality includes “accountability” regarding the information concerning the product quality such as the results of the inspections. While it is needless to say that no false representation may be made, it is essential that the information concerning the product quality is properly communicated to the stakeholders comprising the supply chain, even if it is unfavorable information, to ensure thereby the management’s accountability toward the supply chain.

In order to ensure the management’s accountability, there must be objective data and scientific basis to serve as the underlying material to support the explanations they give. Accordingly, it is also necessary to preserve those data and basis in a condition that allows verification on a later day (traceability).

### **3 Establishment of sound relationship with customers**

Hitachi Chemical should immediately abandon its attitude to easily compromise itself in response to the demand or pressure from the customers or pretend to obey but secretly betraying the customers.

In order to carry it out, it is necessary to repeatedly put into practice such quite normal behaviors as “don’t commit to do anything that cannot be done,” “turn down any demands that cannot be satisfied, and consider any resultant loss of orders to be something that cannot be helped” or “don’t accept any unreasonable requests and force them on another section,” and blend them into a custom on a company-wide basis.

Further, in an effort to fulfil responsibilities that it assumes toward the entire supply chain in cooperation with the customer, the company should never hesitate in making requests to the customers when it is necessary to do so. A sound relationship with the customers must be re-established under which true facts can be informed or accurate information can be provided to the customers regarding the quality of the products and the company can exercise leadership and guide the customers in laying down the specifications of the products.

It is not easy a task. The company, however, should without delay put it into practice, starting from this occasion that it takes countermeasures against the inappropriate acts that have been revealed. Just because it is Hitachi Chemical that committed those deplorable conducts, it should not merely remain devoted to apologies, but it should strive to sincerely explain to the customers where the points are in their agreement that need to be reviewed based upon the data and scientific knowledge and patiently and persistently request them to modify the specifications that need to be modified. Should a situation arise where the procurement officers or other persons concerned of the customers stubbornly persist in a certain position without sufficient technical evidence or knowledge and the company easily caters to the wishes of the customers, it will end up in nothing but repeating the same mistake.

It should also be noted that, in order to provide for the cases that the employees face the customers as mentioned above, it should be necessary to introduce a mechanism in which the employees working directly with the customers are not left to themselves to deal with the customers but support from the company-wide basis will be extended to them or a framework in which the executive-class officers participate in negotiations when handling of a problem or challenge that is difficult for them to overcome against the customers is escalated to a higher position or otherwise the best solution will be sought by the entire organization. Such actions will be indispensable when constructing a sustainable sound relationship with the customers.

It is expected that the management of Hitachi Chemical will use this opportunity and steer the company in the direction to realize “the management that talks with the customers and gets tempered by the customers” and “the management that talks with the stakeholders in the supply chain and gets tempered by the stakeholders in the supply chain.”

#### **4 Continuous education and training to prevent mindset reform from becoming facade**

In an effort to prevent the mindset reform Hitachi Chemical henceforth undertakes from becoming mere facade, continuous education and training programs should be introduced. As a sporadic training is apt to lose its effect as time proceeds, it is desirable for the company to dig in and lay down a training schedule with repetitious and continuous programs from mid- to long-range perspectives and revise/update such programs from time to time.

When introducing education and training programs, it is necessary to take into consideration the balance between top-down and bottom-up actions. The training menus that are determined and pressed down from the higher levels will give rise to a sense of “being forced to do” to the employees, which will make it more difficult for the participants to acquire a feeling that they are proactively participating in the programs or they are a part of the programs. The many employees who have been involved in the inappropriate acts at issue have almost lost their “pride” in their jobs. To restore it, it is an effective measure to introduce a workshop-style training program with focus put on the discussions at the workplace, so that the participants can awaken their feeling of being proactively participating in the program or being a part of the programs.

It should be noted that Chapter 1, Paragraph 1.5 of the Codes of Conduct of Hitachi Chemical prior to the June 2018 revision was entitled “Observance of Engineers’ Ethics” and stipulated the ethical obligations that only the “engineers” should comply with. However, much importance should also be attached to professional obligations that apply universally everyone in employment in general.

#### **5 Accomplishment of thorough investigations to fully disclose long-standing inappropriate practices and appropriate punishments of involved persons**

Hitachi Chemical should implement comprehensive and objective investigations into the areas outside the coverage of the Investigations of the Committee: inappropriate acts at the development phase or in the development division, verification of the performance of the products concerning which the inappropriate acts were committed, and the inappropriate acts committed by the domestic subsidiaries and the overseas offices and overseas subsidiaries. Only if and when such investigations and the countermeasures to the issues found as a result of the investigations (without leaving them unsettled like in the case of Year-2008 Issues) are implemented thoroughly and completely until all long-standing inappropriate practices are fully disclosed will Hitachi Chemical be able to toe the line to embark on prevention of recurrence of inappropriate practices.

It is necessary in relation to the inappropriate acts revealed in the series of investigations to enforce strict punishment from the standpoint of personnel management. However, considering the fact that such many inappropriate acts were committed all over the organization and that its fundamental cause is found in the company-wide organizational culture of “overconfidence in, wishful thinking about, and disrespect for, the quality,” which was created by the management, utmost efforts should be made to ensure that a proper balance is maintained as regards both the scope of persons subject to the punishment and the contents of the punishment so that inequality and imbalance are eliminated that may be resulted if only those who directly committed inappropriate acts are punished but those who were in a position to rectify those inappropriate acts escape from being punished, or only those currently involved in the inappropriate acts are punished and those involved in such acts in the past escape from being punished.

## **Section 2 Establishment of Independent Product Assurance Systems**

### **1 Establishment of system based upon grand design for assurance of product quality**

It is indispensable to establish an independent product quality assurance system for prevention of recurrence of the inappropriate acts revealed in the recent investigations. Upon establishing such a system, the management of the company should thoroughly discuss among them the grand design for the product assurance and hear the instruction and advice of the experts to ensure that the optimal system for Hitachi Chemical will be established.

What serves as a useful reference for such a purpose is the viewpoint of “three lines of defense” that constitute a framework for effective internal governance. The concept of “three lines of defense” is explained by the Corporate Governance System Study Group of the Ministry of Economy, Trade and Industry as follows<sup>[30]</sup>

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<sup>30</sup> Page 34 of the briefing material of the secretariat dated July 24, 2018 ((2) of Points of Issue of “Defense” in Group Governance)

Recommended by IIA (The Institute of Internal Auditors: an organization, located in the United States, concerning internal audit) as a basic concept to clarify where the responsibilities of risk management exist when establishing a system for an organization. It is widely recognized in the field of practice as the global standard.

Under the policy making and oversight and supervision of the board of directors, it is believed advisable for the management to establish a group-wide internal governance system composed of the three lines of defense as described below by way of, *inter alia*, establishment and/or preparation of organizations, systems and regulations after conducting risk analysis, etc. for each business division and group subsidiary.

(1) The business divisions administer the legal compliance and risk control, etc. for the subsidiaries under their respective supervision during the course of daily operation of business. (first line)

(2) The head office division, with expertise in finance, legal or other areas and a sense of professionalism, supports the administration function performed by the business divisions (first line) from a standpoint independent from the business divisions, and performs the check and restrain function. (second line)

(3) The internal audit division checks from an independent standpoint whether the administrative function is properly undertaken by the business divisions and the head office division, and, where necessary, analyzes the causes of the problems and makes proposals for improvement to the management and each division. It also reports to the board of directors and the board of auditors/audit committee, etc. whether the internal governance system is functioning effectively. (third line)

Then, identifying risks concerning the product quality in general, including the inappropriate acts revealed this time, as risks to be controlled, and applying the framework of the “three lines of defense” to such risks, establishment of a system as set out below will be envisaged:

(1) Placing the development divisions, the manufacturing divisions, the sales divisions, the business divisions and other divisions responsible for the business results at the first line, the quality risks are managed in the day-to-day operations.

(2) Placing the quality assurance divisions at the second line, and thereby separating those divisions from the responsibilities toward the business results [<sup>31</sup>] support and checking function are performed toward the first lines from a standpoint independent from the first line.

(3) Placing the internal audit divisions at the third line, the effectiveness of the quality risk control system is audited on a company-wide basis, and reported to the audit committee, from a standpoint independent from the first and second lines.

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<sup>31</sup> The fact that the quality assurance department of each Works was involved in the measures to cut down cost through improvement of defect rate means that said department partially assumed the responsibility toward the business results. Such situation, however, should be avoided.

## 2 Introduction of “Quality Headquarters” (tentative name)

As regards the second line, which functions as the core of the quality risk management system, establishment of a system under which the following actions are taken will be envisaged:

- (4) To newly establish “Quality Headquarters” (tentative name) under the direct supervision of the president [<sup>32</sup>] to supervise the operations regarding the product quality from quality control through quality assurance.
- (5) To position the chief of the Quality Headquarters, to be appointed from the Vice President and Executive Officer (*jomu*) or Executive Officers on higher positions, as CQO (Chief Quality Officer), and give CQO extensive power, including that for human resources management or budgetary matters, so that flexibly actions can be taken to respond to the case of insufficiency in personnel or facilities.
- (6) To reorganize the CSR Quality Assurance Department, the Quality Assurance Centers of the business headquarters and the quality assurance department of each Works that have existed so far and place them under the command of the Quality Headquarters (and not under the control of the first line), and redefine the responsibilities to be assumed by the Head Office of Hitachi Chemical and the Works to clarify the reporting lines.
- (7) To promote professionalization of the employees belonging to the Quality Headquarters and to cultivate their awareness of the professional ethics as professionals by encouraging acquisition of knowledge and qualifications, and further to improve the consciousness for quality and skills in quality control and quality assurance operations at the first line by personnel rotation with the divisions at the first line (especially manufacturing divisions) to recirculate employees who have become professional at the second line to the first line.
- (8) To lay down a carrier path through which the persons who have come to be recognized as professionals in quality assurance operations may be promoted to the management level and support the management of Hitachi Chemical from the viewpoint of the quality assurance.
- (9) The Quality Headquarters proactively takes a leadership in relation to cross-divisional problems such as preparation process of delivery specifications.

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<sup>32</sup> Reflecting the past circumstances in which the quality assurance function was weak, the Quality Headquarters will be placed under the direct supervision of the president for the time being. However, it is more desirous in the future if CQO takes on the checking power to exercise over the executive organ including the president.

### **3 Strengthening of internal audit function**

As regard the third line, where the internal audit function is located, establishment of a system under which the following actions may be taken will be envisaged:

- (10) To secure independence of the Auditing Office from the second line by isolating it from the influence of the Risk Management Center and putting it under the supervision of the audit committee, etc.
- (11) To promote professionalization of the employees belonging to the internal audit division to cultivate their awareness of the professional ethics as professional by encouraging acquisition of knowledge and qualifications.
- (12) As the internal audits are to be conducted on the quality management or quality assurance, to mutually rotate personnel with the Quality Headquarters with an aim to supplement the knowledge concerning the operations subject to the audit, or to externally procure and utilize skilled personnel if development of skilled personnel fails to catch up with the internal needs.

## **Section 3 Improvement of Risk Management System for Inappropriate Presentation**

### **1 Reforming mindset of the management toward risks arising from inappropriate presentation**

In the business society, it is generally said that the risks arising from the inappropriate acts to alter test data came to be recognized since the cases of alteration of test data by other companies were revealed in autumn last year.

The management (which here includes the audit committee) of Hitachi Chemical, however, could have fully recognized the risk arising from the cases of inappropriate acts at issue after the occurrence of Year-2008 Issues and Sakuragawa Case. Nonetheless, it must be admitted that the risks from the inappropriate acts were never clearly recognized under the company's management system until now because the management did not have sufficient level of awareness of the risks that the inappropriate acts entailed.

In any event, the management should sincerely admit now that its awareness of the risks that might be arising from the inappropriate acts was not sufficient and use this opportunity to start to exert themselves for improvement of the risk management system of the company to provide for the future.

### **2 Establishment of system to control inappropriate presentation risks**

Speaking with focus on the operation to prepare and issue Inspection Report, as it is an operation practically performed within the quality assurance department of each Works, the checking function of the quality assurance department of each Works cannot be expected to be effective in relation to it. Therefore, it is necessary to work to prevent, or detect at an early stage, any inappropriate presentation by way of three-tiered checking system composed of (1) the self-inspection by the quality assurance department of each Works, (2) next, inspection by a higher organ conducted by the head office division of the Quality Headquarters, and (3) then, operating audit by the internal audit division.

Then, under any verification system, the subjects of the verification are the consistency between the requirement of the customers and the delivery specifications (including alteration of requirements), the reasonableness of the Company Standards that reflect the requirements of the customers, the consistency between the Customer Specifications and the test method, and the consistency between the figures entered in the Inspection Report and the data obtained at the time of Shipping Inspection.

Further, for future verifications, it is important to record and retain the data obtained from the Shipping Inspection in a condition under which they cannot be intentionally modified. Therefore, an environment in which relevant facts can always be confirmed swiftly should be established by stipulating the rules concerning the generation, retention, management and deletion of data obtained from the tests and inspections, etc. and the reviewing the manners to obtain and manage the data.

### **3 Improvement of operation of internal reporting system**

Reflecting the lessons learned from the past that the internal reporting system couldn't obtain trust of the employees who are directly engaging in the operations and the inappropriate acts failed to be internally reported and escalated to the management in a timely and appropriate manner, resulting in no rectification being made, it is firstly necessary to take measures to improve the employees' trust on the internal reporting system on a continuous basis.

The fact that so many effective responses were returned from the employees to the Questionnaire Survey that the Committee conducted seems to largely reflect the president's daily effort to repeatedly emphasize importance of compliance as well as his strong message to entire employees when conducting the Questionnaire Survey. Therefore, it should be possible to re-enforce the effectiveness of the internal reporting system by bringing to the front the commitment of the president.

Further, not only by waiting for the whistles to be blown, the trust of the employees upon the efforts of the management may also be improved by creating a situation where the employees can more easily disclose their thoughts. It can be realized by way of proactively launching questions from the management side like the Questionnaire Survey conducted by the Committee or by starting with hearing the problems and tasks perceived at the workplace and faithfully leading them to rectification.

## Chapter 9 Conclusion

It was confirmed that the inappropriate acts revealed as a result of the Investigation indicated serious conditions of the company. They were found at all Works of Hitachi Chemical, and the products concerning which the inappropriate acts were committed included core products and a number of other products, with personnel involved belonging to variety of departments on a cross sectional basis from the quality assurance department, the manufacturing departments, the development departments, the sales departments through the business sectors, and vertically from the employees in the peripheral positions through Executive Officers.

Hitachi Chemical is now facing a pile of problems and tasks that they have to address, including investigations into inappropriate acts at the development phase or in the development division, verification of performance of products concerning which the inappropriate acts were committed, investigation on the domestic subsidiaries or overseas offices and overseas subsidiaries, contacting and dealing with the customers about the products related to the inappropriate acts and preparation of the countermeasures to prevent recurrence to be implemented in parallel with the foregoing actions.

It is expected that the management of Hitachi Chemical will exercise its strong leadership to aggressively enforce measures to overcome those difficulties and recover the trust of the stakeholders and corporate value.

Especially, when contacting and dealing with the customers regarding the products related to the inappropriate acts, although the company may have a feeling of inferiority because of the disgraceful incident it generated, it is expected that it will be marked as the first step for reconstruction of the sound relationship with the customers with fulfillment of accountability in view of the relevant supply chain placed at the core of it.

In response to the sincere encouragement from the President and CEO after the inappropriate acts were revealed, such many employees turned in their answers to our Questionnaire Survey and confessed so many inappropriate acts to the Committee. We believe it is a germination for reconstruction of the organization, a beacon of hope. We sincerely wish that the president will always be readily sending out messages to encourage all officers and employees of Hitachi Chemical to return to the spirit of “Basics and Ethics” that they all have etched in their hearts, and the company will proceed with even stronger steps forward for regeneration and prosperity of the company.

It should be added lastly that, during the process of the Investigation, the Committee learned by hearsay that Hitachi Chemical in certain cases faced difficulties dealing with the customers who acted in an attitude that was incompatible with the intent of Hitachi Chemical to fulfill its accountability in view of the relevant supply chain.

To fulfil accountability in view of the relevant supply chain cannot be accomplished by Hitachi Chemical alone. With the cooperative efforts of all stakeholders constituting the supply chain and Hitachi Chemical, we ardently hope that the entire supply chain will revert to a sounder state and the trust to be put on the manufacturing industry of Japan will be restored.

- End -