Progress of the Measures Promoted by the Kobe Steel Group to Prevent Recurrence of the Misconduct

November 6, 2019

KOBE STEEL, LTD.

Overview of the Preventive Measures

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Causal Analysis

① **Management style that overemphasized profitability and inadequate corporate governance**

② **Imbalanced operation of plants that resulted in the reduced awareness of quality compliance among employees**

③ **Insufficient quality control procedures that allowed the Misconduct to take place**

Ⅰ. Governance – Building a Quality Governance System

1. Penetration of the Corporate Philosophy
2. Desirable State of the Board of Directors
3. Restructuring of the Risk Management System
4. Reformation of the Organization
5. Restructuring of the Group Companies
6. Rotation of Personnel Among Divisions
7. Understanding of Issues Occurring at Worksites
8. Establishment of the Quality Charter
9. Restructuring of the Quality Assurance System
10. Restructuring of Our Management Indicators

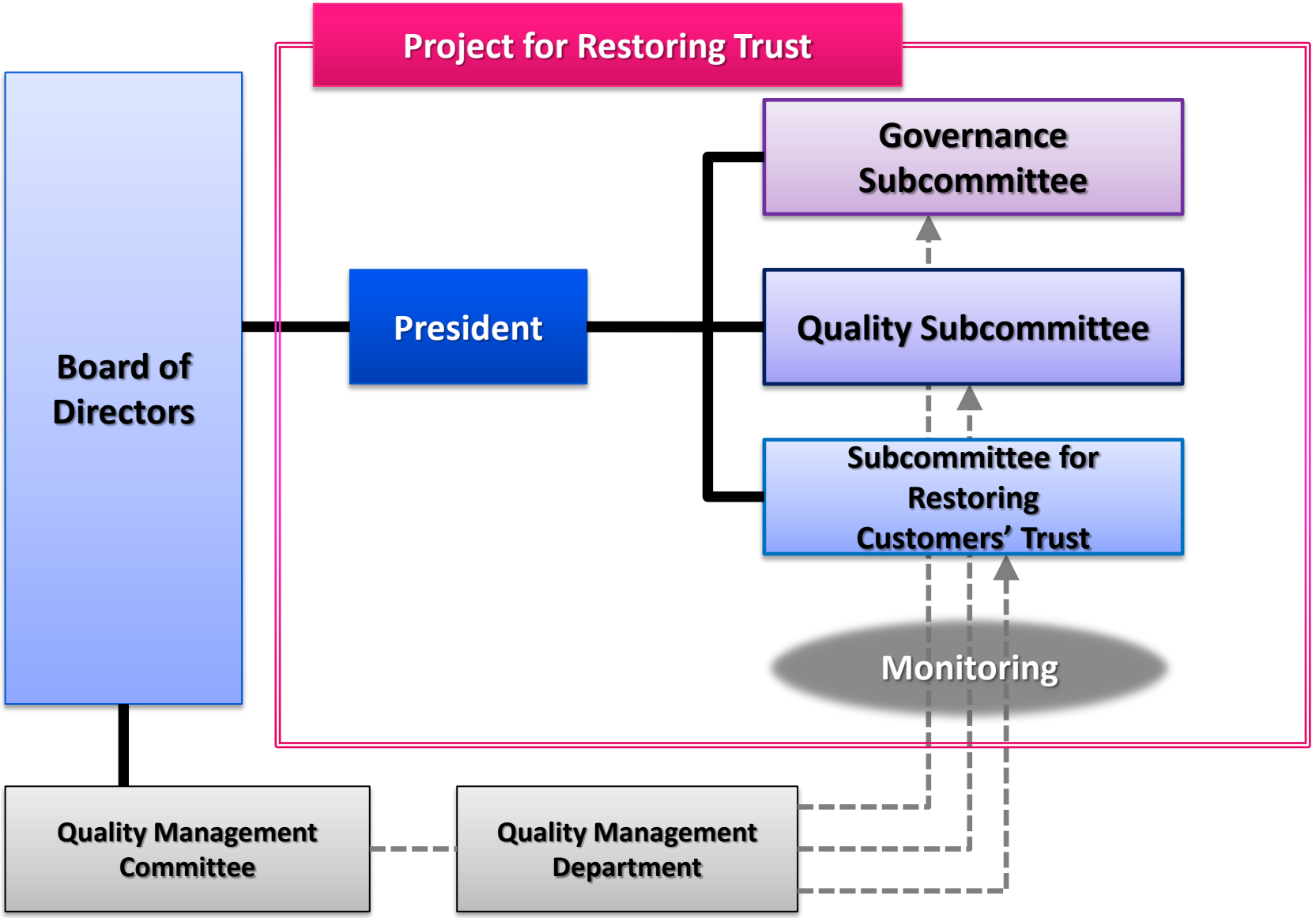
Ⅱ. Management – Ensuring Quality Control

1. Measures for Quality Management
2. Rotation and Development of Quality Assurance Personnel
3. Employee Education Programs on Quality
4. Quality Audits by the Head Office

Ⅲ. Process – Strengthening of Quality Control Processes

1. Elimination of Opportunities for the Improper Handling of Test and Inspection Data and Unification of Shipping Standards
2. Understanding of Process Capabilities and Utilization (with respect to the materials businesses)
3. Review of the Approval Process (a) for Accepting New Purchase Orders, and (b) when Changing the Manufacturing Process
4. Promotion of Quality Risk Assessment in Capital Investments

Framework for Implementing the Preventive Measures



Preventive Measures – Status Overview

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	Measures to Prevent Reoccurrence of the Misconduct	Status	
Ⅰ	**Governance – Building a Quality Governance System**		
1	Penetration of the Corporate Philosophy	In Progress	
2	Desirable State of the Board of Directors	Completed	
3	Restructuring of the Risk Management System	In Progress	
4	Reformation of the Organization	Reorganize Steel, Aluminum in Apr. 2020	
5	Restructuring of the Group Companies	Partly in Progress	
6	Rotation of Personnel Among Divisions	In Progress	
7	Understanding of Issues Occurring at Worksites	In Progress	
8	Establishment of the Quality Charter	Completed	
9	Restructuring of the Quality Assurance System	Completed	
10	Restructuring of Our Management Indicators	In Progress	
Ⅱ	**Management – Ensuring Quality Control**		
1	Measures for Quality Management	Nearly Completed	
2	Rotation and Development of Quality Assurance Personnel	In Progress	
3	Employee Education Programs on Quality	In Progress	
4	Quality Audits by the Head Office	In Progress	
Ⅲ	**Process – Strengthening of Quality Control Processes**		
1	Elimination of Opportunities for the Improper Handling of Test and Inspection Data and Unification of Shipping Standards	KOBELCO Quality Guidelines already enacted	Correction and improvements under review by quality audit
2	Understanding of Process Capabilities and Their Utilization (with respect to the materials businesses)		
3	Review of the Approval Process (a) for Accepting New Purchase Orders, and (b) when Changing the Manufacturing Process		
4	Promotion of Quality Risk Assessment in Capital Investments		

Details of the Preventive Measures ①

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Ⅰ. Governance – Building a Quality Governance System

1. **Penetration of the Corporate Philosophy**
2. Desirable State of the Board of Directors
3. Restructuring of the Risk Management System
4. **Reformation of the Organization**
5. Restructuring of the Group Companies
6. Rotation of Personnel Among Divisions
7. **Understanding of Issues Occurring at Worksites**
8. Establishment of the Quality Charter
9. Restructuring of the Quality Assurance System
10. Restructuring of Our Management Indicators

Updates from the last announcement (May 9, 2019) are shown in **bold green text** or indicated as "Update" in the header.

I-1. Penetration of the Corporate Philosophy

Further Promotion of the Next 100 Project

- **Dialogue sessions by the President with employees【Since April 2018】**: Dialogue sessions continue to be held with employees at our domestic and overseas business locations and sites. **To date, dialogues have been held 96 times at 63 locations (as of the end of October 2019).**
- **We established the KOBELCO Core Values Place at our training center in Kobe, Hyogo Prefecture in June 2019 to raise awareness of the need for quality and the initiatives being undertaken to prevent recurrence.**
- **Through training for executives and employees, including Group companies, we are working to ensure that the misconduct is not forgotten and to increase crisis awareness of wrongdoings.**
- **We have newly established the KOBELCO Core Values Awards. We asked employees to submit activities that reflect the corporate philosophy and activities that permeate the corporate philosophy throughout the Group. We received about 250 entries. The awards ceremony was held in late October and broadcast live to our business locations in Japan and overseas.**

Representatives from Southeast Asia and India engage in dialogue with the President（August 2019)

Executives visit KOBELCO Core Values Place（June 2019）

【Awards ceremony for KOBELCO Core Values Awards (October 2019)

I-4. Reformation of the Organization

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➢ Iron & Steel Business and Aluminum & Copper Business to be reorganized in April 2020

Now	April 2020 Onward
Iron & Steel Business	**Iron, Steel & Aluminum Business (tentative name)**
Steel wire rods & bars Steel plates Steel sheets	Steel wire rods and bars Steel plates Steel sheets
Steel castings/forgings Titanium Steel powder Steel tubes	Aluminum sheets
Aluminum & Copper Business	**Metals & Processed Materials Business (tentative name)**
Aluminum sheets	Steel castings/forgings Titanium Steel powder Steel tubes
Aluminum castings/forgings Aluminum extrusions	Aluminum castings/forgings Aluminum extrusions
Copper strips Copper tubes	Copper strips Copper tubes
Welding Business	**Welding Business**

Aims of the Reorganization

Strengthen Strategies by Demand Field

- ✓ Reorganize along **materials** (steel products, aluminum sheets) and **parts** (automotive/aluminum castings, forgings, extrusions; aircraft/titanium and aluminum castings/forgings)
- ✓ Consider integrating automotive steel sheet and aluminum sheet sales departments and product marketing/technical services departments
  ⇨ **To strengthen automotive weight reduction strategies**
- ✓ Expand sales through solution proposals

Strengthen Monozukuri Capabilities

- ✓ Link common elemental technologies and quality management across business divisions

  【Materials】 Rolling, continuous annealing, etc.

  【Parts】 Forging, extrusion, assembly, etc.

Reinforce corporate governance

- ✓ Strengthen management functions of business segments

Strengthen common functions

- ✓ Strengthen common functions in procurement, information systems, distribution, facility maintenance, etc.

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I-7. Understanding Issues Occurring at Worksites

Dialogue between Management and Employees

- Through promoting activities of the Next 100 Project, we have been concurrently conducting dialogues not only by the President, but also by other members of management and the heads of each business division.

Employee Awareness Survey

- **Along with the Compliance Awareness Survey following on from fiscal 2018, we completed the Employee Awareness Survey in fiscal 2019.**

The Quality Caravan Team

- The Quality Caravan Team is comprised of Head Office departments such as the MONODZUKURI (Production System Innovation) Planning and Promoting Department, IT Planning Department, and Technical Development Group. The Quality Caravan Team is tasked to provide consultation to business divisions on their issues.
- **Over the next two years starting from fiscal 2019, the Quality Caravan Team will visit a total of 117 locations (69 locations in fiscal 2019) and plans to conduct surveys on issues pertaining to quality assurance and issues pertaining to the visualization and improvement of process capabilities.**
- **As of the end of October 2019, the Quality Caravan Team had visited 41 locations and identified new issues. With regard to the new issues identified and existing issues identified in fiscal 2018, an external technical survey and technical development have been conducted and proposals for solutions are proceeding.**

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Ⅱ. Management – Ensuring Quality Control

1. Measures for Quality Management
2. Rotation and Development of Quality Assurance Personnel
3. Employee Education Programs on Quality
4. Quality Audits by the Head Office

Updates from the last announcement (May 5, 2019) are shown in **green bold text** or indicated as "Update" in the header.

II-1. Measures for Quality Management ①

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Establishment of Quality Management Department (January 1, 2018)

- Conduct quality-related audits while being in charge of overseeing quality assurance departments of each business division.
- Gather information and understand issues concerning quality assurance in each business division (e.g., quality management indicators, complaints, etc.), report these issues to the management on a regular basis, and create company-wide measures to improve the overall quality assurance practice.

Establishment of Quality Assurance Departments under Direct Supervision of Business Divisions (～ January 1, 2018)

- Established quality assurance departments under the direct supervision of each business division. Selected quality assurance staff are designated to co-serve in the Quality Management Department and participate in discussions concerning companywide measures.

Enhancement of Quality Assurance Management at Manufacturing Sites

- Guidelines enacted in order for quality assurance departments to secure independence from manufacturing and processing departments and to maintain unwavering independence from manufacturing or processing environments in making proper judgments on products and preventing nonconforming products from being shipped.

i	Place Quality Assurance Department directly under the head of the business division and maintain independence from design (for machinery businesses) and manufacturing departments
ii	The Head of the Quality Assurance Department will not co-serve as the Head of the design (for the machinery businesses) and manufacturing departments
iii	Separate the issuer of inspection certificates from design (for the machinery businesses) and manufacturing departments
iv	Establish a quality management system

Group Quality Leaders Meetings

- Quality assurance leaders from Kobe Steel and Group Companies meet and review the implementation status of various measures and share information related to quality control activities. **Since fiscal 2018, Leaders Meetings have been held twice in Japan (Tokyo, Kobe) as well as China, Southeast Asia and the United States. We plan to continue this effort in fiscal 2019 and beyond.**

Establishment of the Quality Management Committee (April 2019)

- With the final opinion from the Independent Quality Supervision Committee, the activities of the Committee concluded on March 31, 2019.
- As an advisory body to the Board of Directors, Kobe Steel established the Quality Management Committee, comprised of 3 external experts and 2 internal directors , which is tasked to monitor and advise whether the Company's efforts to reinforce quality management and the measures to prevent recurrence are functioning properly. **The Committee is scheduled to meet approximately 4 times in fiscal 2019 and has already met 3 times (April, July and October).**

II-1. Measures for Quality Management ②

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【Company-wide Structure for Monozukuri】

		Quality Assurance	Manufacturing Technology Quality Control	Technical Development
		Executive Officer Head of Quality Assurance Management	Executive Officer	Executive Officer
Head Office	① Report to top management ② Implement company-wide policies ③ Promote inter-division interactions	Quality Management Department	MONODZUKURI (Production System Innovation) Planning and Promotion Department	Technical Development Group
Business Divisions	① Report to Executive Officers of Business Divisions ② Implement division policies such as action plans & capital investment plans ③Promote interactions between plants and Group Companies ④ Report issues and measures to Head Office	Quality Assurance Department under direct supervision of the business division	MONODZUKURI leader from each business division	Person in charge of promoting technical development in each business division
Plants / Affiliated Companies	① Report to manager in charge ② Implement plant-level measures ③ Promote activities within a plant ④ Report issues and measures to business division	Quality Assurance Department in each plant/affiliated company	MONODZUKURI leader from each plant/affiliated company	Person in charge of technical development in each plant/affiliated company

II-1. Measures for Quality Management ③

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【Roles of Quality Management Department】

【Roles of Quality Management Department】

- Conduct quality-related audits while being in charge of overseeing quality assurance departments of each business division
- Gather information and understand issues concerning quality assurance in each business division (e.g., quality management indicators, complaints, etc.), report these issues to the management on a regular basis, and create company-level measures to improve the overall quality assurance practice

		Head Office	Iron & Steel	Welding	Aluminum & Copper	Machinery	・・・
Quality Assurance Management as a Head Office Department	① Secretariat of the Quality Management Committee	●					
	② Report to the management on the operational status regarding company-level quality control	●					
	③ Centrally manage public certifications across the company	●					
	④ Head Office contact point for certification bodies and governments	●					
	⑤ Report the results of audits to the Independent Quality Supervision Committee【Quality Audit Section】	●					
Function to Manage Laterally between Business Divisions	⑥ Create an annual plan for quality assurance, and announce quality compliance policy	●	●	●	●	●	
	⑦ Gather information and understand issues related to quality from each business division	●	●	●	●	●	
	⑧ Create an education and training plan	●	●	●	●	●	
	⑨ Consider and propose personnel assignments	●	●	●	●	●	
	⑩ Gather and provide information related to quality (e.g., revision of JIS and ISO)	●	●	●	●	●	
	⑪ Gather and provide information related to quality from industry organizations	●	●	●	●	●	
	⑫ Conduct relevant quality-related audits【Quality Audit Section】	●	●	●	●	●	
	⑬ Follow up on audit results【Quality Audit Section】	●	●	●	●	●	

II-2,3. Rotation and Development of Quality Assurance Personnel/In-house Education Programs Regarding Quality

II-2. Rotation and Development of Quality Assurance Personnel

Rotation of Quality Assurance Personnel

- To kick-off our new personnel rotation practice across Kobe Steel's business divisions and group companies, the Company assigned staff from the Quality Management Department to each business division effective May 2019.

Development of Quality Assurance Personnel

- In fiscal 2018, we provided definitions of skills and evaluation of skill levels required for company-wide quality assurance staff and systematized quality-related education (including obtaining qualifications). **In fiscal 2019, we will review and systematize quality-related education for personnel who are in positions outside of quality assurance.**
- **We have provided training by internal instructors on business contents with reliability engineering (held in June and October 2019).**
- As for quality risk management and preventive measures, we are engaging in a pilot training program on FMEA (Failure Mode and Effect Analysis) / FTA (Fault Tree Analysis) / DR (Design Review), focusing on the products at the plants.
- **We held a Quality Exchange Meeting in China for Group companies attended by persons in charge of quality assurance (July 2019).**

The first Quality Exchange Meeting in China

II-3. In-house Education Programs Regarding Quality

Quality and Compliance Training

- We completed quality and compliance training targeting heads of departments/sections (approximately 600 individuals) of Kobe Steel and its domestic Group Companies in November 2018. The training has been expanded to all employees through the Dialogue Platform (through March 2019). We are also in the process of hosting the training sessions in our overseas Group Companies.
- Sharing and penetration of the Quality Charter not only to quality assurance departments, but also to all employees of Kobe Steel Group (e.g., quality and compliance trainings, quality website, e-learning).

Promotion of Other Quality-Related Education Programs

- A "Quality" website was created on Kobe Steel's intranet in September 2018, in which the progress report on the Project for Restoring Trust is shared.
- Education on quality is offered via e-learning (since November 2018) and relevant information is circulated via internal newsletters (starting in December 2018). We will continue these activities.

Details of the Preventive Measures ③

Ⅲ. Process – Strengthening of Quality Control Processes

1. Elimination of Opportunities for the Improper Handling of Test and Inspection Data and Unification of Shipping Standards
2. Understanding of Process Capability and Utilization (with respect to the materials businesses)
3. Review of the Approval Process (a) for Accepting New Purchase Orders, and (b) when Changing the Manufacturing Process
4. Promotion of Quality Risk Assessment in Capital Investments

【Notes】

- In order to promote the points above, we established the KOBELCO Quality Guidelines of the Kobe Steel Group. The Guidelines went into effect on May 1, 2018 and we are disseminating and enforcing the Guidelines among the Group Companies.
- We will monitor the actual enforcement and progress of the above through quality audits.

II-4. Quality Audits by the Head Office

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Audits by the Quality Audit Section of the Quality Management Department

Audit Item		Schedule
ⅰ） Review of compliance status (on-site audit) • Cross-reference inspection results of subject products are audited on-site against legal specifications and customer specifications. • Disposal of reserved and nonconforming products are also audited.		The Quality Management Department began the audits in May 2018 and **completed them at all 117 locations by the end of March 2019**. **On-site audits at 85 locations and document reviews at 124 locations will be conducted in fiscal 2019. On-site audits began in May and have been completed at 52 locations. Document review forms have been received from all 124 locations.**
ⅱ） Review of quality management systems from the anti-fraud perspective • Review laws and regulations related to quality, review the means of determining customer specifications, and confirm the administrative department in charge. • Assess consistency between the instructions given to manufacturing sites and how they are actually carried out.		
ⅲ） Assessment of compliance awareness • Assess the level of awareness of the top management as well as factory workers through interviews in order to prevent misconduct. • Check whether training on quality compliance is properly provided.		
ⅳ） Review of the implementation status of the preventive measures		
• Plants where misconduct was identified:	Review status and effectiveness of the implementation of the preventive measures.	
• Plants where there was no misconduct:	Review the implementation status and effectiveness of measures that were recommended after quality audits.	

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III-1. Eliminating Improper Handling Opportunities in Testing/Inspection and Unifying Shipment Standards

Automation of Testing/Inspection Recording and Elimination of Manual Data Entry by One Person

- **Automation is proceeding generally as planned. There is concern of a slight delay in systems development in fiscal 2019 against the original fiscal 2018-2020 plan. However, by the end of fiscal 2019, we expect to automate 75% of the tests and inspections. By the end of fiscal 2020, we anticipate automating 100% of the tests and inspections.**
- We are continuing additional measures such as confirmation of work logs and using the four-eye check process for tests and inspections that are not yet automated.

Adjustment of Shipping Standards

- We are in the process of eliminating opportunities for any improper conduct caused by the existence of double standards (customer specifications and internal standards).

  ⇒ Under the new rule, customer specifications are used as a default standard for shipment approval instead of Kobe Steel's internal standards.

III-2. Understanding and Utilizing Process Capabilities (in the Materials Businesses)

Application and Utilization of Process Capability Index

➢ Understanding the Process Capability Index:	Understand how quality properties deviate from the required standards in manufacturing processes for each category (i.e., production lines, product types, tests/inspections, and customers).
➢ Utilizing the Process Capability Index:	The degree of variation found in the quality properties of manufacturing processes will be used for deciding whether to accept or reject orders.

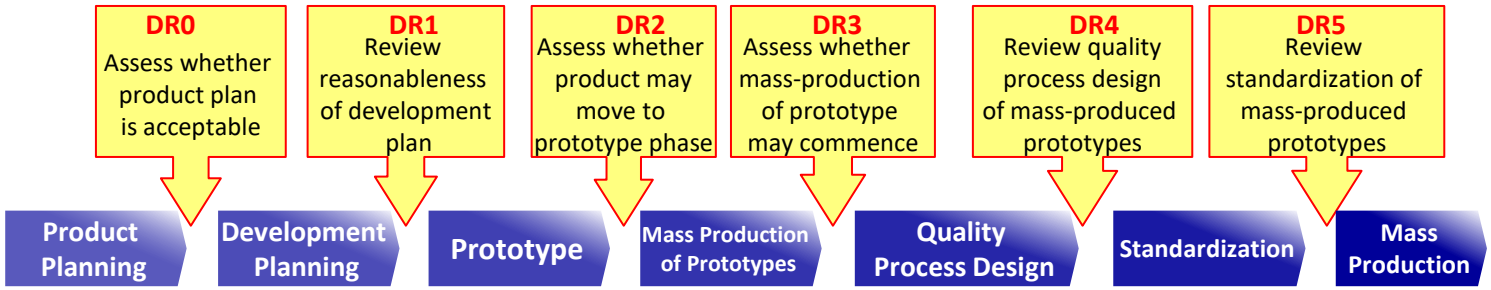
III-3,4. Review of the Approval Process / Promotion of Quality Risk Assessment

III-3. Reviewing the Approval Process for New Orders and Changes in the Manufacturing Process

Re-Evaluation of the Approval Process for New Orders

While understanding the process capability for each order, we are in the process of adopting, restructuring and implementing Design Review (hereinafter, "DR": examination of designs defined by the JIS and ISO 9000). The implementation of DR for domestic locations is scheduled in FY2019.

An Example of Design Review (DR)



Relevant departments from sales, technology, manufacturing, quality assurance and R&D participate in the DR meeting and assess whether a product may move to the next phase of the DR process.

Reviewing the Approval Process for Changes in the Manufacturing Process

- We will prevent potential defects by assessing beforehand the effect on quality when the 4Ms (men, machine, material, method) change and comply with customer specifications.
- Specifically, we will assess risks and clarify the authorization process when changing the 4Ms in the manufacturing process.

III-4. Promoting Quality Risk Assessment in Capital Investments

Introduction of Investment Standard in Consideration of Mitigating Quality Risks

- Some plants and offices have begun considering quality-related capital investment by evaluating quality risks from quantitative factors such as impact, frequency and detection rate. The Company will start utilizing the quality assessments in decisions for key capital investments beginning in fiscal 2019.

Ⅱ. Management - Ensuring Quality Control

1. Management Structure
2. Education
3. Audit and Support

Ⅲ. Process - Strengthening of Quality Control Processes

1. Emergency Measures
2. Permanent Measures

Implementation Schedule for Preventive Measures

Updates from the previous announcement (May 9, 2019) are shown in **green bold text** or indicated as "Update" in the header.

Ⅱ - 1. Management Structure

- Established Quality Assurance Department directly under the Aluminum & Copper Business in November 2017.
- With a 3-layered management structure, we are continuing quality-related plans and audits with the Quality Management Dept.
- Share information such as progress of measures and issues at business locations in quarterly quality conferences within business divisions.
  - Sales departments participate and share our customers' voices.
  - Automation, process capability improvement and DR operation are shared with business locations.

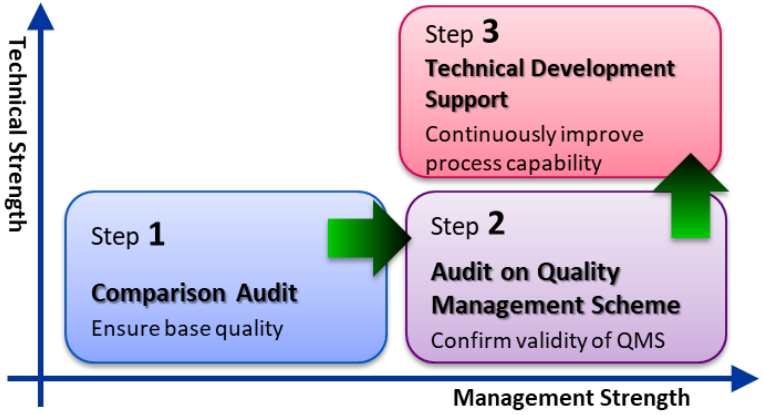
Ⅱ - 2. Education

- Planning and promoting education program from awareness and knowledge perspectives, and developmental activities related to quality compliance.
  - Awareness: Raise awareness for quality compliance through dialogues with the management and heads of plants
  - Education seminars from the customers' perspective (invite customer to speak on quality safety, etc.)
  - Explanation and sharing of the progress update on the quality assurance effort with sales departments
  - Active engagement in quality-related education (encourage to acquire third-party certificate)

Ⅱ - 3. Audits and Support

FY2018 Completed『Comparison Audit (Step 1)』and
『Audit on Quality Management Scheme (Step 2)』

FY2019
- 『Technical Development Support (Step 3)』**(Follow-up of process capability improvement by quality KPI management)**
- Continue the audit of the scheme **(Confirm effectiveness of DR and audit)**
  Audits at 12 out of 19 locations completed by the end of October 2019
- Improve and assist issues/challenges identified as a result of FY2018 audits



Ⅲ- 1. Process – Emergency Measures

Emergency Measures in Aluminum & Copper Business

i) Compare Test/Inspection Data and Mill Sheets
(To be continued until permanent measures have been completed)

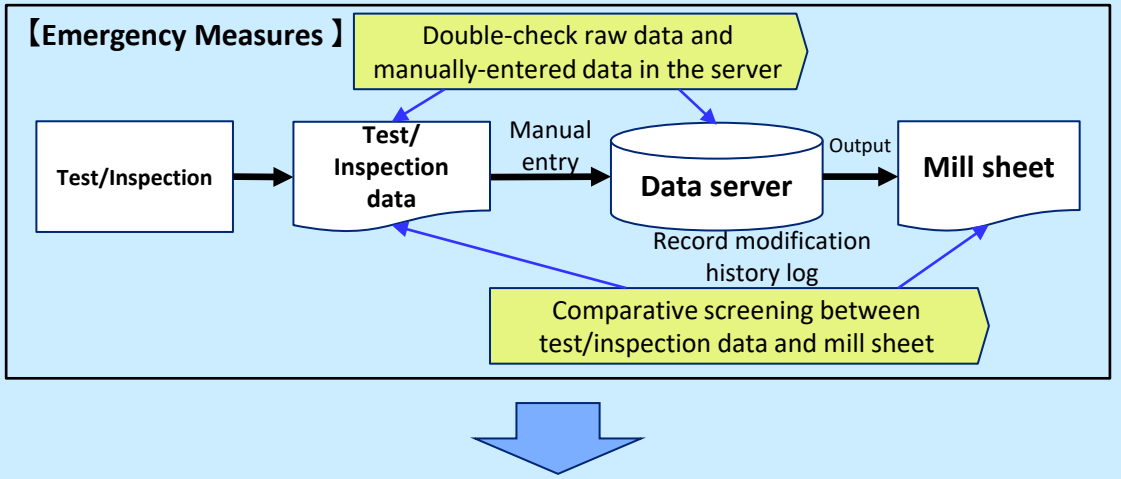
ii) Review Manually-Entered Test/Inspection Results
(To be continued until permanent measures have been completed)

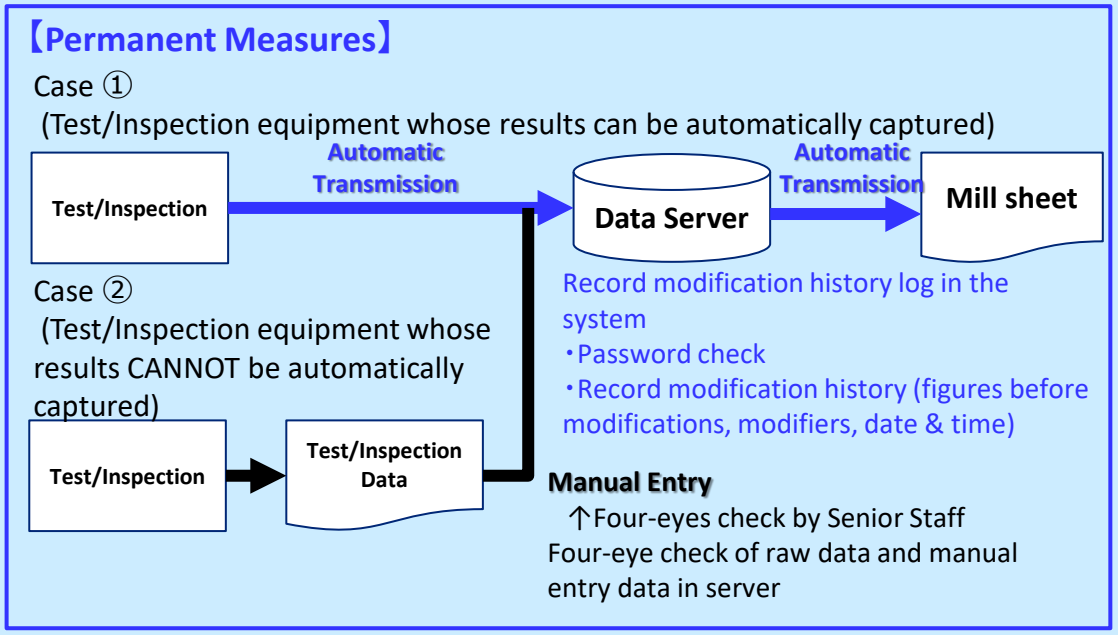
iii) Restrict Access to Databases, Manage Data Logs

iv) Adjust Shipment Standards【operational】(in progress)

v) Compare Customer Specifications and Manufacturing Standards (Completed in Self-Inspection)

vi) Enforce Rules for Handling Nonconforming Products (in progress)





《Emergency Measures ⇒Permanent Measures》

- Shift to <u>less manual and more sound tests</u> by automating the process
- <u>Record and monitor modification history logs</u>
- Additionally streamline manual screening process such as comparison analysis and four-eye checks

※ The tests/inspections with inevitable manual entry will be transitioned to Case ② after confirmation of effective data preservation by head office and division.

Ⅲ- 2. Process – Permanent Measures

Updated

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【Permanent Measures】

i） Eliminate opportunities for mishandling the test/inspection data

- Create a system environment where data falsification is impossible.
  - ⇒ Aiming for automation of all targeted inspection equipment by March 2020.

ii） Adjust shipment standards [system implementation]

- Improvement of the system: Change the system settings so that customer specifications are applied as the shipping standard.
  - ⇒ Completed with the exception of some plants.

iii, iv） Understanding Process Capabilities and Improving Inspection Capability

⇒ **Measures are underway. Started quality KPI management. Following up on process capability improvement.**

v, vi） Re-Evaluate Approval Processes for New Orders and Changes in the Manufacturing Process

⇒ **Measures are underway. Currently confirming effectiveness in audits of business divisions.**

vii） Promote Quality Risk Assessment in Capital Investments

⇒ Preparing to apply for low-return quality-related investments.

Ⅲ- 2. Process – Permanent Measures

Updated

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【Permanent Measures】

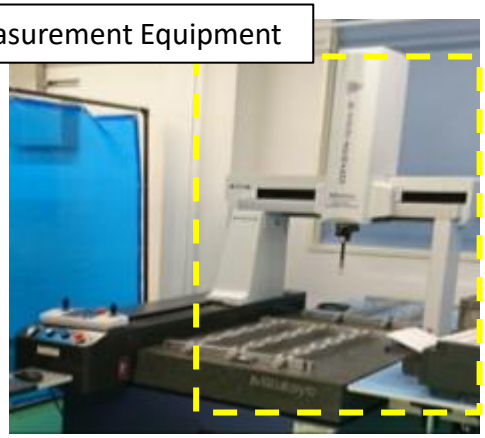
Automation of Test/Inspection Recording and Elimination of Manual Data Entry by One Person

- **Automation of testing/inspection equipment is generally progressing as planned.** There is concern of a slight delay in systems development against the original fiscal 2018-2020 plan. However, we expect automation to reach approximately 90% by the end of fiscal 2019 and 100% by the end of fiscal 2020.

Aluminum & Copper: Examples of Automation

① Dimension Test

3D Measurement Equipment

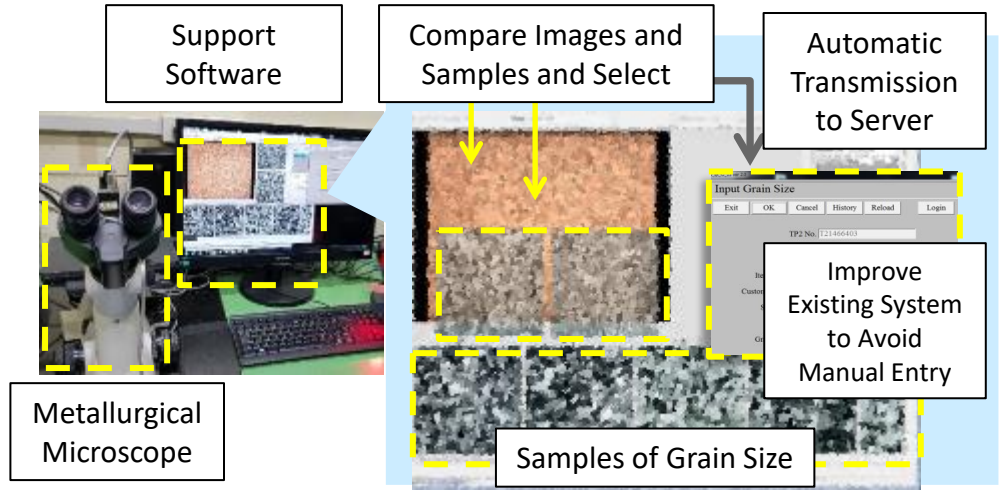


Introduction of 3D Measurement Equipment

Automatically measure dimension and transmit the results to a PC.

- Eliminate opportunities for mishandling the test/inspection data when measuring and rewriting.

② Grain Size Test



Introduction of Support Software to Grain Size Test (Comparison Method)

Select sample⇒Automatically transmit results and image to server for capture

Eliminate opportunities for mishandling the results.

Ⅲ-2. Process – Permanent Measures

Updated

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【Permanent Measures】

< Understanding Process Capability >

➢ **Progress of visualization of process capability**

Visualization of inspection data (using graphs/indicators),
Accurately understanding process capability with regard to our products

a) Histogram, process capability indicators (Cpk)
Visualization of median value of inspection data and variability ➡ Identify insufficient process capacity, determine whether or not to accept orders, utilize monitoring of abnormalities/changes

b) Correlation diagram of inspection items (quality characteristics) and manufacturing conditions
Visualize correlation of inspection data and manufacturing conditions ➡ Utilize identification of specific manufacturing conditions that should be improved

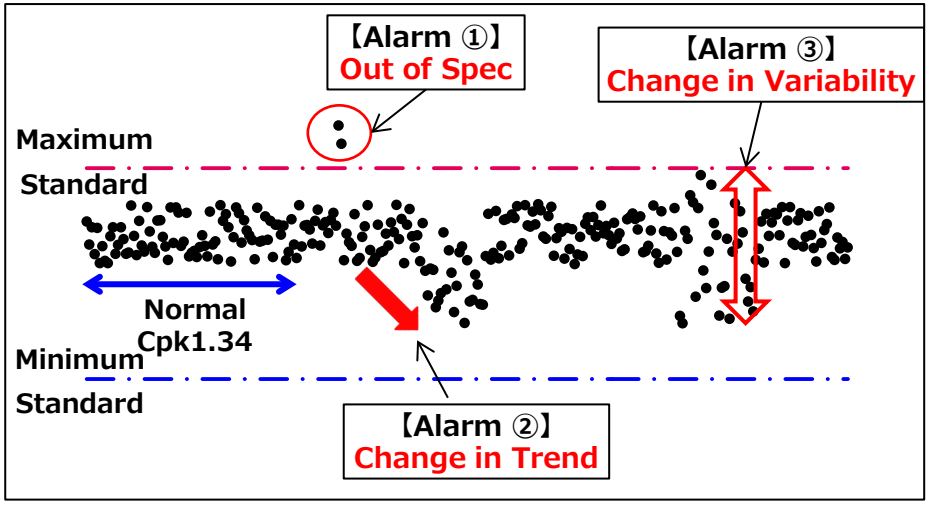
★Promote faster understanding and improvement by introducing dedicated visualization tools

< Example of Monitoring Process Capability >

➢ **Introduction of system to monitor process capability**

○ Ease in monitoring process capability for each product
→Confirm process capability when undertaking design review of new orders

○ **Utilization of alarm alert function**
① Out of specification
② Change in trend
③ Change in variability
→ Accelerate improvements (process abnormalities, test accuracy)



Implementation Schedule for Preventive Measures in the Aluminum & Copper Business

Updated

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Aluminum & Copper Business	FY2018		FY2019	
	1H	2H	1H	2H
Management				
Organizational Restructure ※Established Quality Assurance Department in November 2017				
Education		Education →		Education →
Audit (comparison, mechanism)	Comparison & scheme audit →	Comparison & scheme audit →	Scheme audit & confirmation of effectiveness of DR & internal audit →	
Technical Development Support			Technical development support →	
Process				
【Emergency Measures】				
Compare test/inspection data and mill sheet	Completed			
Review manually-entered test/inspection results	Completed			
Restrict access to databases	Completed			
Adjust shipment standards (operational aspect)	Completed			
Compare customer specifications and standard values	Completed			
【Permanent Measures】				
Eliminate opportunities for mishandling the test/inspection data	Automation by test items on a sequential basis →			
Adjust shipment standards (system response)	Launch operation (some plants may require additional time to set up the system) →			
Understand process capability	Consider PDCA scheme →			
Improve process and test/inspection capabilities	Execute sequentially →			
Re-evaluate approval process for new orders	Create rules, test operation / brush up →		Launch full operation	
Re-evaluate approval process for changes in manufacturing process	Create rules, test operation / brush up →		Launch full operation	