

To Become a Safe Chemical Manufacturer  
—Our Future Efforts in Fundamental Safety—

Mitsui Chemicals extends heartfelt sympathy and sincerest apologies to all persons affected by the April 22, 2012 explosion and fire at the resorcinol plant at the Mitsui Chemicals Iwakuni-Ohtake Works.

The Accident Investigation Committee, established to determine causes of the accident and study measures to prevent future recurrences, has determined direct and underlying causes of the accident. The Committee approved measures developed by Mitsui Chemicals to prevent future recurrence and have completed an official report on the accident.

In addition to these measures, Mitsui Chemicals established the Fundamental Safety Committee, with its President as the chairperson, to thoroughly review problems with safety at Mitsui Chemicals and study and implement fundamental safety measures. The Committee has determined safety measures to be implemented in response to this accident as follows.

Mitsui Chemicals will implement all measures in an effort to reform the company as a safe chemical manufacturer that is worthy of the trust of society.

I. Measures in response to the accident

Enforcement of the management policy, "Safety is our top priority"

1. President:

Issuance of "Emergency message"

Thorough implementation of "Safety is our top priority"

2. Production & Technology Center Executive:

Issuance of "Emergency Safety Measures" message

Training and dissemination of safety information related to serious risks

3. Special sessions

The President met and exchanged views with approx. 3,400 employees from each Works and operation sites including those overseas.

In the sessions, Mitsui Chemicals Group President emphasized the following key points:

- Safety is our top priority
- Safety is for yourself, your family, and each and every one of your colleagues
- Every person must give serious thought to what can be done to ensure safe operations

Serious direct discussions were held on these key points and employees freely voiced opinions.

4. Discussions regarding safety with the Production & Technology Center Executive  
Following determination of direct causes of the accident at the Sixth Accident Investigation Committee meeting on August 15, 2012, the Production & Technology Center Executive visited each Works to explain the causes of the accident and measures to prevent recurrence. The Production & Technology Center Executive held safety discussions and called on employees to approach preventive measures with a sense of ownership and to reflect on what must be done to ensure safety.

5. Discussions regarding safety at all Works with the Production & Technology Center Deputy Executive and General Manager of the Safety & Environment Division  
Discussions were held with line managers of production worksites about safety and how the issue should be approached.

## II. Implementation of recommendations in the Accident Investigation Committee report

### 1. Horizontal dissemination of measures addressing direct causes

Following determination of the direct cause of the resorcinol plant accident at Iwakuni-Ohtake Works and approval of preventive measures, a complete overhaul of equipment, training manuals, and training programs at all Works was conducted.

- Re-confirm explosion hazards

Created a list of applicable or similar equipment at each Works and qualitatively confirmed hazards. Confirmed safety measures were sufficient and that they were sufficiently reflected in manuals.

- Re-confirm safety devices

Reviewed safety devices to confirm whether risks regarding equipment and operations were considered, whether a failsafe was in place, and whether emergency stop release and bypass operations were only possible under safe and stable conditions. All equipment measures are being implemented as necessary.

- Reinforce training and information dissemination

Confirmed content of training manuals and programs. Reviewed items that were insufficient, and re-educated and notified workers of all changes.

### 2. Horizontal dissemination of measures addressing underlying causes

Measures addressing underlying causes approved by the Accident Investigation Committee shall be implemented through the Safety Rebuilding Project Team at Iwakuni-Ohtake Works with the General Manager of the Works serving as the team leader. Information will be shared and disseminated to all other Works.

### III. Continued implementation of safety measures for equipment

Implementation of inspections and renewal of equipment to maintain soundness which was undertaken in the past will be continued. Funds for this purpose will be allotted. Allotment of safety measure budgets to promote onsite and frontline safety that can be used at the section manager's discretion without top management approval will be continued. Additionally, latest diagnostic technology for effective maintenance and confirmation of equipment soundness will be continued to maintain equipment safety.

### IV. Efforts in fundamental safety

In addition to the abovementioned measures, in order to thoroughly review problems in safety at Mitsui Chemicals through a group-wide system, the Group formed the Fundamental Safety Committee with the President serving as the chairperson. The Committee investigated the root causes hidden in the people and organizations, technology, rules and culture of the Company that are obstacles in achieving safety and deliberated on fundamental safety measures.

Based on the results of these deliberations, the Company compiled specific measures that will be promoted company-wide.

(Refer to the Appendix for details on the measures.)

Efforts in Fundamental Safety  
You are responsible for your own safety.  
What should you do to stay safe?

The Mitsui Chemicals Group has continued ongoing efforts to assure safe operations under the management policy, "Safety is our top priority". The Group deeply regrets the suffering and inconveniences caused by the explosion and fire of April 22, 2012 at its Iwakuni-Ohtake Works.

Understanding the gravity of this tragic accident, in May 2012, the Company formed the Fundamental Safety Committee, a group-wide team of personnel and external experts, with the President serving as the chairperson, to thoroughly review safety issues and study fundamental measures to ensure safety.

Based on the results of deliberations by this committee, the Company compiled fundamental safety measures.

#### Overview of Fundamental Safety Measures

1. Measures to allow line managers to focus on and properly manage worksites  
(Section managers shall go to worksites to promote sufficient onsite communication.)
  - Change section and unit size to ensure proper management. (Divide sections and units)
  - Clarify contact persons at the Head Office and each Works (Review request workflow in which requests are filed directly with production section managers)
  - List operations currently conducted at each Works and implement measures to reduce workloads
  - Clarify responsibilities and authority of line managers and create training systems, etc.
2. Measures to improve technical skills and ensure such skills are passed down
  - Train engineers to understand onsite work
  - Review career advancement model for production technology staff, clarify training courses for process key persons and line managers, and establish systems to properly train personnel
  - Create systems to organize safety technology, periodically review, pass down, and use knowledge
  - Conduct risk assessment when constructing, reinforcing, and modifying equipment and review technical assessment systems and structure to prevent problems
3. Ensure safety is the top priority, cultivate professionalism, and give workers a sense of accomplishment
  - Change organization to allow Safety & Environment Division more authority and responsibility in monitoring and providing instructions on safety
  - Implement measures to make line manager positions attractive to workers

- Implement measures to give workers a sense of accomplishment in safety performance and operations
- Designate company-wide “Safety Day”, etc.

## I. Structure to deliberate fundamental safety

The Fundamental Safety Committee consists of twelve members, including executives in charge of the Production & Technology Center and Corporate Planning Division, general managers of the Works and an external expert (Nobuo Takagi, Vice-President of the Japan Society for Safety Engineering and Director of the System Safety Research Center), with the President of Mitsui Chemicals as the chairperson.

Under this committee, a Practical Review Team including an external consultant was formed to: 1) narrow down items to be considered, 2) confirm the current situation, 3) list and organize problems, consider issues, and countermeasures.

To deliberate on these key points, three working groups (WG), each covering a different theme, were formed and members from within the company from a wide range of fields were selected.

- (1) Working group to review and study line operations  
(Strengthen safety management structure through line operations)
- (2) Working group to study technical skills and passing down of such skills  
(Passing down skills and safety philosophy, training engineers)
- (3) Working group to study motivation  
(Enforcement of “safety is our top priority” policy and promotion of professionalism and a sense of accomplishment from completing operations)

## II. Timeline of deliberations by the Fundamental Safety Committee

May 2012

Formation of Fundamental Safety Committee

June 2012

Start-up of Practical Review Team

- List of keywords to promote discussion of fundamental issues in production worksites  
“Ability to think”, “professionalism”, “technical skills”, “responsibility, authority, and roles”
- Study ideal image of a production worksite focusing on keywords

July through October 2012

Interviews conducted by an external consultant and the secretariat with employees from each level at production worksites based on the four keywords and ideal image of the worksite to understand and sort through issues.

- Interviews were conducted at the following Works: Ichihara, Nagoya, Osaka, Iwakuni-Ohtake, Omuta
- Interviews were conducted with at following employee levels: Section manager, Chiefs, Foremen, Operators

Establishment of three working groups (WG), extraction of issues based on interview results, and discussion on fundamental safety measures.

December 2012

Compilation of fundamental safety measures.

### III. Issues and specific measures

[Issue 1] Line manager focus and proper management of worksite

[Measures]

- (1) Reduce work load to allow line managers to focus sufficient attention on managing worksites  
(Section managers should go to worksites to confirm and initiate communication with and among workers onsite)
  - Change section and unit size to ensure proper management (Divide sections and units)
  - Clarify contact persons at the Head Office and Works (Review request workflow in which requests are filed directly with production section managers)
  - List operations currently conducted at each Works and implement measures to reduce workloads
- (2) Train line managers to maintain sufficient communication with and earn trust of worksite personnel
  - Clarify universal roles, responsibilities, and authority of line managers
  - Establish systems whereby the entire Works supports selection and training candidates for section manager and chief positions

[Issue 2] Improve technical skills and ensure such skills are passed down

[Measures]

- (3) Train engineers to understand onsite work  
(Compensate for decrease in opportunities to raise skill level through plant construction, reinforcement, renovation, and problem response)
  - Conduct practical and safety training at Plant Operation Technology Training Center
  - Review career advancement models for production technology staff, establish separate training programs for process key persons and line managers, and programs to properly train personnel
  - General Manager of the Production Division shall be responsible for training of engineers and shall provide opportunities for interaction as well as confirm progress
- (4) Create systems to organize safety technology, periodically review, pass down, and use knowledge
  - Prepare, improve, and pass down materials summarizing philosophy of safe designs and confirm proper reflection as manuals
  - Review and enforce system for passing down skills and philosophy of onsite line managers
- (5) Conduct risk assessment when constructing, reinforcing, and modifying equipment, and review technical assessment systems and structure to prevent problems
  - Conduct mandatory inspections by safety specialists
  - Prepare structure to provide support for construction, reinforcement, and modifications, and follows-up after implementation

[Issue 3] Ensure safety is the top priority, cultivate professionalism, and give workers a sense of accomplishment

[Measures]

- (6) Change organizational structure to allow Safety & Environment Division more authority and responsibility in monitoring and instructing on safety
  - The Safety & Environment Division at Head Office shall be separated from the Production & Technology Center and shall report directly to the President
  - Establishment of groups at each Works that report directly to the Safety & Environment Division at Head Office and strengthen supervisory functions of the division towards General Managers of the Works regarding safety to build strong leadership at the worksite
- (7) Strengthen communication of “Safety is our top priority” to onsite and frontline operations
  - Line managers shall lead by example and promote efforts to make safety activities more visible
  - Designate April 22 as the company-wide “Safety Day”
  - Periodically hold company-wide safety presentations and discussions
- (8) Cultivate and strengthen professionalism
  - Reinforce training for younger workers to improve abilities to discover and resolve issues
  - Create programs for interaction with other companies, Works, and plants
- (9) Strengthen teamwork and communication within the workplace
  - Promote small-group activities plant-wide enabling workers to learn from each other
- (10) Implement measures to make line manager positions more attractive
  - Clarify career development and make benefits visible to attract new candidates
  - Propose and implement long-term training programs (Foreman to Chief to Section Manager) that are shared company-wide
  - Consider incentives that match roles and responsibilities of the Foreman
- (11) Implement measures to give workers a sense of accomplishment in safety performance and operations
  - Promote safety award programs at all Works
  - Individual job-related goals set annually by each employee should reflect items related to safety and environment. Employees should work to achieve both job-related goals and safety items
  - Workers at production worksites shall be made aware of the relationship between production cost and business performance and understand their responsibilities and roles in making a profit