

Safety and Disaster Prevention

Safety and Health (General)

FY : Fiscal Year means the year ending March 31.
For example, FY2016 means April 1, 2015 - March 31, 2016

Measures for the Safety of Employees and Local Communities

1. Basic Philosophy

JSR Corporation believes that "safety is of utmost importance to everyone working in manufacturing and the bedrock of business activity." To encourage understanding and acceptance of this belief by each employee and foster company-wide recognition of the value of "safety first," we established the following "Basic Philosophy for Occupational Health and Safety" and accompanying "Courses of Action" for executing it in July of 2016.

The points provided here provide the basis for JSR Corporation's unified approach to occupational health and safety.

(1) Basic Philosophy for Occupational Health and Safety

At JSR Corporation, safety is our highest priority and the foundation of all of our activities. Accordingly, we will create safe worksites and strive to maintain physical and mental health, with the goal of ensuring a safe return home at the end of each workday.

(2) Courses of Action

1. No matter the situation, we will act with safety foremost in mind.
2. We will comply with established rules and never fail to act in accordance with safety basics.
3. We will maintain safety by identifying and eliminating both actual and potential hazards.
4. We will strive to create comfortable work environments and promote physical and mental health.
5. Through communication and ingenuity, we will aim to achieve 100% employee participation in all safety activities.

2. FY2016 Activities

(1) Occupational Safety Activities

Safety affects all stakeholders and is a fundamental challenge for management. With this in mind, the JSR Group has made it a goal to achieve zero facility accidents and zero accidents requiring time off from work.

However, a serious work accident occurred at the Yokkaichi Plant in July 2014. Under the philosophy that safety is the most important factor for everyone working in the manufacturing industry and a major premise of business, the JSR Group has taken feedback seriously and has initiated two projects to regain safe workplace and safety awareness, and reestablish the culture of safety and safety infrastructure. The figure below illustrates the purpose of these two projects. The

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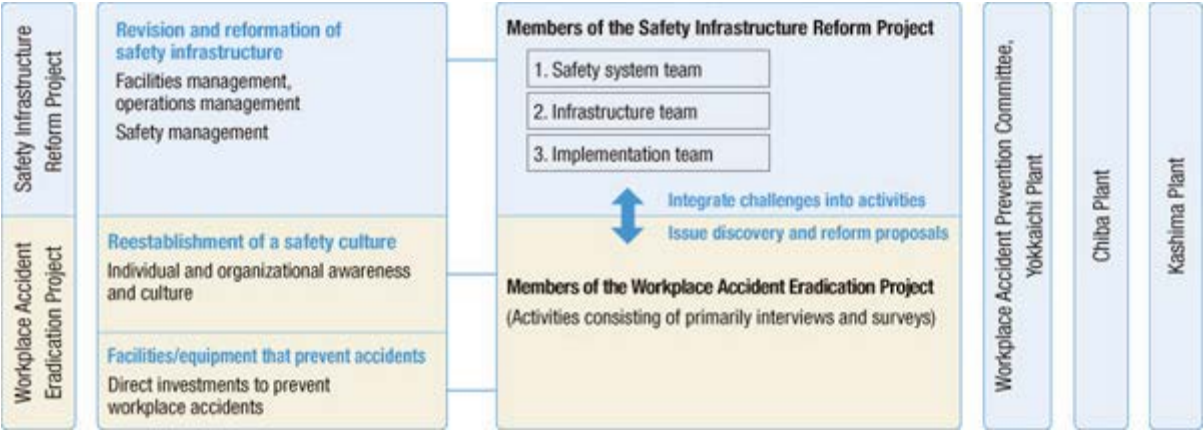
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Safety Infrastructure Reform Project serves as a review and a strengthening of our safety infrastructure. The Workplace Accident Eradication Project serves to ensure the eradication of workplace accidents, and to discover and resolve any remaining safety culture challenges.

These two projects are scheduled to be complete in FY2016. The Safety and Health Promotion Department established in FY2016 and the Disaster Prevention Office within the department are currently engaged in proactive and aggressive implementation of current project activities.



This figure illustrates the FY2016 achievements and challenges. FY2016 was focused on developing the framework of our safety infrastructure.

Safety infrastructure			Progress ^{*1}
Infrastructure	Short-term	Facility measurement to help prevent accidents	○
		Development and implementation of safety infrastructure standards	○
		Development and completion of safety infrastructure information	○
	Long-term	Reconstruction of risk assessment and infrastructure budgeting systems	○
		Systematic removal of idle facilities	○
		PHA ^{*2} full-scale implementation	○
	Advanced technologies	Analysis regarding the implementation of operations monitoring support systems (Alarm management, ICT activities, etc.)	○
Organization	Manufacturing Department	Review of appropriate organizational sizing and operational systems	○
	Related departments	Establishment of a dedicated safety organization	○
		Analysis regarding the strengthening of system and functionality for plant-related department	△
Systems	Safety system	Reformation of safety and health management systems (Based on OHSAS ^{*3})	○
		Review of effective procedures (Risk assessment, audits, etc.)	△
Safety culture			Progress ^{*1}
People	Review of educational systems and competency evaluations		△
	Development of standards to ensure that current employees perform work safely and reliably		△
	Enhancement of education and training (Hands-on training, KY activities, accident case studies, etc.)		-
	Organizational enhancement (increase in employees and effective placement of most-experienced employees)		△
	Establishment of safety behavior (day-to-day and emergency procedures)		-

Evaluation by Outside Organizations >



	Enhanced bi-directional communication (reporting, contacting, and consulting)	△
Culture	Review of safe and reliable production capability	○
	Improve awareness of the value of safety (safety definitions and philosophies)	△
	Creating a culture of discipline (fundamental safety rules, plant protective gear rules, etc.)	○
	Motivation to improve safety (Safety awards, personnel evaluations, etc.)	△
	Improvement of mutual understanding and cooperation in the workplace and between organizations	-

- *1 Progress: On schedule (○), Delayed (△), Not started (-)
- *2 Process Hazard Analysis (PHA): Analysis method used to identify and evaluate risks in processes established to handle hazardous materials
- *3 Occupational Health and Safety Assessment (OHSAS): International standards to establish and maintain occupational health and safety management systems.

Development of infrastructure-related high-level initiatives has finished on schedule. Strengthening of plant-related departments and the development of our safety system is scheduled to be complete in FY2017. Implementation of initiatives will start in FY2017 in order to ensure their completion with full-scale implementation scheduled for FY2018. Details of safety culture activities scheduled to be conducted in FY2016 have been verified. Implementation of these activities is scheduled to begin in FY2017.

With the serious workplace accident that occurred in 2014, we have made a promise to strive for zero accidents and not to forget the lesson learned from this tragic event. As a demonstration of our resolution to develop a strong culture of safety to protect human life, we erected safety monuments in front of the administration building at the Yokkaichi Plant. We held the unveiling ceremony and safety ceremony on the anniversary of the accident on July 23 of the following year. From this point forward, we will hold a company-wide ceremony on Pledge to Safety Day. On this day, all employees will reflect on the safety activities conducted during the year.

1. Safety Memorial and Safety Monument

Safety Memorial

On July 23, 2015, the company-wide Pledge to Safety Day memorial was held in conjunction with the unveiling ceremony of the Safety Monument constructed at the entrance of the Yokkaichi Plant Main Building. At the unveiling ceremony, the President, Central Executive Union Committee Chairman, Yokkaichi Plant Manager, and approximately 30 other participants recited prayers together with a priest from Miyamado Shrine. Though held at the Yokkaichi Plant Main Building, the employees at the Kashima Plant, Chiba Plant, and Headquarters participated in the Safety Memorial via TV conferencing. After everyone joined together in making safety pledges, President Koshiba gave a speech on safety and reviewed various safety projects. The Nakazawa Plant Manager also gave a speech on commitment to safety. Each office engaged in silent prayer at 1:15 PM.



Safety Monument Unveiling Ceremony



Safety Memorial

Safety Monument

Featuring rough fieldstones, the outsides of the three monuments represent unpredictable elements;

namely, risk factors, natural disasters, and conceit, respectively. Meanwhile, the perfect circles inside of the three monuments respectively represent "will, wisdom and practice of the top management, managers, and employees," thereby symbolizing our determination to place the highest priority on safety to overcome the previously-mentioned unpredictable elements. The harmony created by the three perfect circles reminds us that human life is precious and must be protected. The supporting platform that extends horizontally represents a wide variety of backgrounds and foundations that underpin "will, wisdom and practice" and, at the same time, our prayers for the tranquil repose of the soul of the precious human life that was lost.

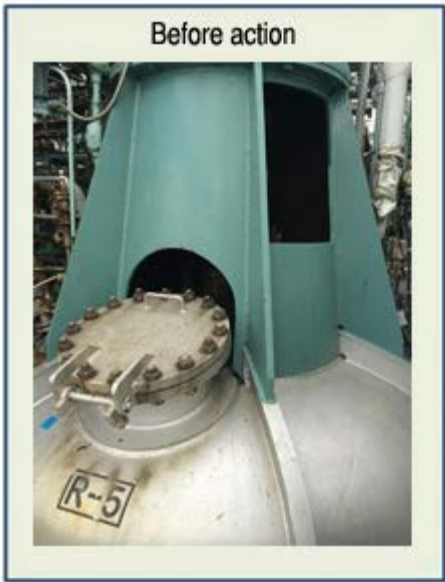


Safety Monument

2. Before and After Examples of Workplace Accident Elimination and Safe Facility Efforts

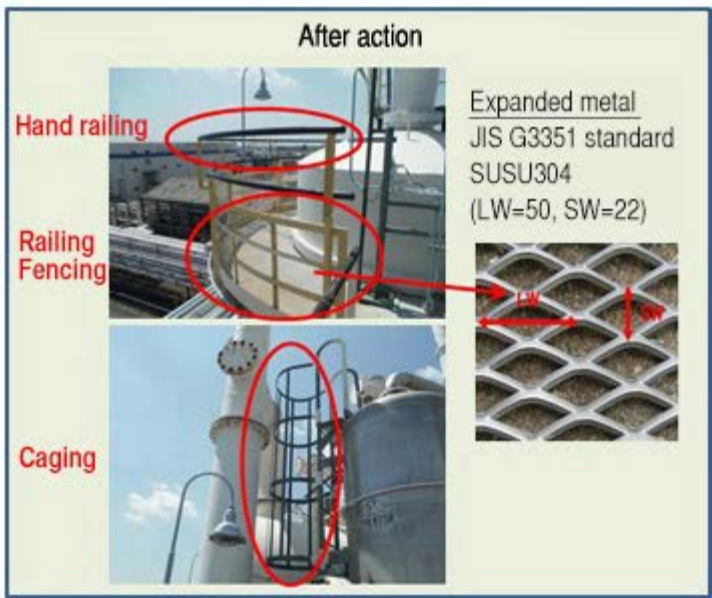
Project name: Improvement of agitator shaft opening

Project details: A protective cover (perforated metal) was installed to prevent people from getting caught in the agitator shaft



Project name: Prevention of Falls from High Work Locations


Project Details: Raising the high of hand railing and fencing Installation of caging on the tank ladder.



Project name: Improvement of safety fence

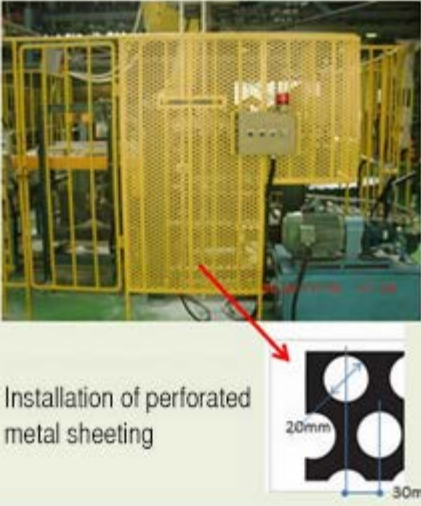
Project details: Perforated metal sheeting installed to prevent hands from coming into contact with machinery when inserted through the safety fence paneling.

Before action



Hands could make contact with machinery through safety access paneling.

After action




Installation of perforated metal sheeting

Project name: Prevention of falls from hand railing


Project details: Perforated metal sheeting installed to prevent falls from hand railing

Before action



Internal checks of the pellet hopper are performed near the hand railing, which created a potential risk of falls.

After action



Safety fencing and perforated metal sheeting was installed onto the hand railing.

3. Enhanced Hands-on Training




Equipment used to simulate accidents of getting caught in machinery







Caught in roller simulator

Caught in rotating shaft simulator

Safety check door simulator





Simulator for solvent combustion and explosions



Solvent explosions Simulator



Cork is propelled when an explosion occurs

(2) Number of Workplace Accidents

As listed in the following table of the number of workplace accidents that occurred over the last five years, there was one accident at JSR, and there were two accidents at manufacturing partners in FY2016. The situation remains largely

unchanged despite minor differences in statistics.

As we still have not yet achieved a satisfactory level of results from project activities conducted in FY2016, we will continue our efforts to improve the situation. More accidents have occurred at manufacturing partners in comparison with other similar companies. We plan to share our systems and experience with manufacturing partners to help prevent accidents there.

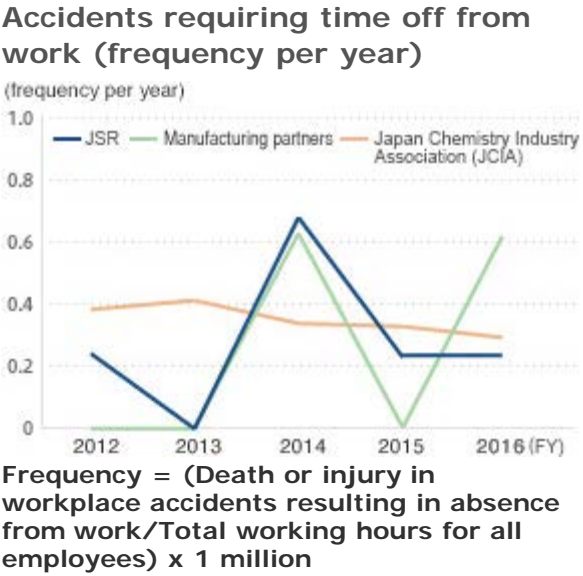
Number of Workplace Accidents (JSR)

FY	2012	2013	2014	2015	2016
Number of Cases	1	0	3	1 (Number of Deaths)	1

Number of Workplace Accidents (Manufacturing partners)

FY	2012	2013	2014	2015	2016
Number of Cases	0	0	2	0	2

Information on workplace and facility accidents that occurred at JSR is quickly and effectively communicated to all employees via the company intranet. This ensures that all group companies and employees share and understand the information, which helps prevent similar accidents from occurring in the future.



(3) Safety and Accident Prevention

In the spirit of our Responsible Care philosophy, we strive to help our plants and operators acquire certification under various security and safety laws. This enables plants and operators to create higher quality health and safety management systems in addition to clarifying their rights and responsibilities. As a result, certification plays an important role in improving safety technologies. All JSR plants have acquired plant and operator certification under the High-Pressure Gas Safety Act, Fire Service Act, and Industrial Safety and Health Act. We will continue to maintain certifications with the aim of improving maintaining safety and preventing accidents.

Certification	JSR Office	Date	Remarks
High-pressure Gas Safety Act	Yokkaichi Plant	Sep. 2015	Recertified
	Kashima Plant	Mar. 2016	Recertified
	Chiba Plant	Mar. 2017	Scheduled for recertification
Dangerous Goods Inspection	Yokkaichi Plant	Mar. 2016	Recertified
	Kashima Plant	Mar. 2016	Recertified
	Chiba Plant	Mar. 2017	Scheduled for recertification
Continuous Operation of Type One Pressure Vessels, Industrial Safety and Health Act	Yokkaichi Plant	From Nov. 2017	Scheduled for recertification
	Kashima Plant	Feb. 2019	Scheduled for recertification
	Chiba Plant	Feb. 2017	Scheduled for recertification

1. Data on JSR Facility Accidents

As listed in the following table, the number of facility accidents at JSR in FY2016 was one. This information is reported to the government in compliance with the Petrochemical Accident Prevention Act.

FY	2012	2013	2014	2015	2016
Number of Cases	0	2	2	2	1

Accident Summary for FY2016

A small amount of cleaning solvent leaked while cleaning tanks during periodic maintenance. This incident resulted in an outbreak of fire, but the fire was immediately extinguished with a fire extinguisher. There were no injuries. The cause of the fire was due to the decomposition of sediment that was mixed with the cleaning solvent when this sediment made contact with the moisture in the air.

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