

## Cosmo Oil carries out a diverse range of activities for enhancing safety to achieve a zero-accident record.

With the goal of achieving and maintaining a record of zero accidents, the Cosmo Oil Group is focused on enhancing its safety management system, ensuring full compliance, and shifting emphasis among employees from productivity to safety. The Group also works to prevent human error and improve procedural safety by ensuring that all employees have a thorough understanding of the basics of safe conduct.

### Learning from Refinery Accidents—Rebuilding the Safety Management System and Raising Safety Awareness

The Cosmo Oil Group thoroughly re-evaluated its safety management system and assessed safety awareness among employees after an explosion and fire occurred at its Chiba Refinery on April 16, 2006. Based on this review, measures to prevent recurrence in the future were drafted and implemented as a safety policy comprised of three pillars: rebuilding the safety management system, ensuring thorough compliance with corporate ethics, and putting restraints on productivity to ensure safety.

#### ● Change 21 Activities—Rebuilding the Safety Management System

The Change 21 Activities Promotion Committee was formed to oversee the rebuilding of the refinery safety management system. It works with employees from many departments within and outside the refineries to incorporate a range of perspectives into the review of safety management activities and the addition of new items to the list of safety activities. The Committee has developed a structure for improving the level of maintenance through reviews of maintenance parameters, a variety of inspections, and reviews of policies to prevent malfunctions when changes in equipment or operations are made. (See the chart on the next page for details.)

#### ● Thorough Compliance with Corporate Ethics

An investigation into the cause of the accident found that the refinery had violated mandatory procedures for reporting incidents to the government prior to the accident. The Cosmo Oil Group expressed deep remorse that neglecting these procedures led to this serious accident, and is taking thorough steps to ensure that all workplaces comply with corporate ethics rules. The Cosmo Oil Group has a specific policy of strictly enforcing reporting rules, which is not limited to the mandatory reporting of accidents

to government organizations. The Group enforces the basic rule of “if in doubt, report it,” requiring that employees make an immediate report to local authorities whenever they are unsure if one is required. These reports are not limited to incident reports for government officials. The Group now requires that even unsafe and failure incidents<sup>1</sup> that were previously handled in the workplace, such as minor failures or employee injuries, be reported within 30 minutes to the Safety and Environment Control Department. Submitted reports are immediately forwarded to all relevant Cosmo Oil departments. Sharing this information eliminates the risks that arise from decisions made only by those individuals involved. The Group makes relevant information public at the outset in order to bring a diverse range of perspectives to problem-solving and prevent the recurrence of the same or similar kind of accident.

#### ● Putting Restraints on Productivity to Ensure Safety

The Cosmo Oil Group recognizes that an emphasis on efficiency and speed in the production process can lead to confusion about the Group’s policy on safety and reporting. Therefore, the Group is taking steps to lessen the overriding emphasis on productivity and shift priority to safety. To this end, it has developed a structure to ensure that opinions regarding safety management are fully reflected in operations and facilities management through a direct and independent link between the Head Office’s Safety and Environment Control Department and a safety and environment office at each refinery. The Group has also added to its internal audits an audit system of double and triple checks through comparison inspections by the Head Office and other refineries to assess the safety measures in place.

<sup>1</sup> Unsafe and failure incidents: Left unattended, minor incidents and failures can develop into large-scale accidents. Cosmo Oil’s Change 21 Activities define minor incidents and failures as “unsafe and failure incidents,” and focus on eliminating these to achieve and maintain a record of zero accidents.

► **Change 21 Activities for Rebuilding the Refinery Safety Management System**

**Slogan:** Let's build a safe and secure refinery that employees can be proud of and that will enable us to earn the continued trust of society

**Vision of Goal:** "Achieve and maintain zero accidents"—Achieve 90% or more reduction in unsafe and failure incidents by 2010 compared with the benchmark year<sup>1</sup>

Activities	
<p><b>Improve level of maintenance</b></p> <p><b>Improve coverage:</b> Review scope of maintenance, review all regular inspections of machinery, complete early diagnosis of age-related deterioration, review parameters of inspections for any expansion of erosion and corrosion<sup>2</sup></p> <p><b>Improve predictability:</b> Review structural changes over the past 10 years, among other measures</p> <p><b>Improve reliability:</b> Develop equipment with durability to withstand operational variations and disturbances</p> <p><b>Improve control:</b> Organize basic maintenance materials, among other measures</p>	<p><b>Solid initiatives and operations</b></p> <p><b>Optimize regulations and standards:</b> Review control of modifications, etc.</p> <p><b>Ensure implementation of initiatives:</b> Rebuild framework for the lateral promotion of initiatives</p> <p><b>Strengthen initiatives:</b> Implement an array of ongoing safety evaluations and other actions</p>

1. Benchmark year: September 1, 2006 to August 31, 2007

2. Erosion and corrosion: Repeated collisions of fluid with material results in a thinning effect due to the synergy of erosion, the physical damage caused by the surface being worn down, and corrosion brought on by acid and other corrosive materials.

## Declaring Safety as a Primary Responsibility and Promoting Basic Safety Conduct

The Cosmo Oil Group's measures to prevent the recurrence of accidents are showing steady results. Progress has been made in its approach to improving the level of maintenance, thereby substantially lowering the probability of the recurrence of a major accident like the April 2006 explosion and fire at the Chiba Refinery.

In recent years, there have been numerous minor incidents, failures, and work-related injuries in areas where maintenance has not received special attention in the past, such as in narrow pipes and chemical pipes, as well as drainage pipes that carry trace amounts of oil. To remedy this, the Group has added a number of points to its safety checklist and taken other steps to boost the level of maintenance. In addition, the Group has also introduced initiatives designed to further ensure safety by focusing on activities that highlight unsafe conduct involving employees. Sadly, as these initiatives were being put in place, an employee on tank patrol at the Chiba Refinery lost his life in a tragic and unfortunate accident on October 8, 2008.

It was against this backdrop that the Cosmo Oil Group's Safety Reinforcement Declaration was enacted on October 15, 2008. The declaration is designed to ensure that employees follow three basic tenets: **(1) fully comply**

**with basic items and rules of safety; (2) thoroughly execute duties based on clearly defined responsibilities and authority of departments and individuals; and (3) completely eliminate ambiguity in the implementation of procedures.** Under this declaration, employees promise "to never undertake any prohibited conduct" and "not to take any action until they have a clear understanding of all details." The Cosmo Oil Group understands, however, that a zero-accident record is not achievable until all employees disregard the overriding priority of production efficiency and return to the basics of day-to-day safety. The Group encourages employees to recognize this clearly, to treat all problems as their own and discuss them with other offices, departments and workplaces, and to follow them up in order to check the progress made in resolving these issues.

The Cosmo Oil Group considers safety to be its primary corporate responsibility. The Group recognizes that ensuring safety gives peace of mind to the local communities in which it operates, and benefits the Cosmo Oil Group employees, customers, and all other stakeholders. The Group will continue its commitment to activities aimed at achieving and maintaining a zero-accident record.

## Cultivating a Corporate Climate That Ensures Safety by Removing All Risks of Unsafe and Failure Incidents



**Kaoru Sato**  
General Manager, Safety and Environment Control Department

The refinery accident in April 2006 taught us that ensuring safe operations requires not only strengthening the safety management system but also changing the organizational climate and employees' awareness. This laid the groundwork for the policy to prevent recurrence based on three pillars of safety. I believe we are now seeing the effects of this policy.

Employees in various workplaces perform thousands of procedures and operations every day. If even one operation is performed unsafely, we can run

the risk of a major accident. Our Safety Reinforcement Declaration is meant to remove all risks of failure from these operations by making certain that employees fully understand the basic commitments to safety. Each employee must work to remove these risks by taking time to stop and double-check for safety. We continue to focus on reinforcing safety by considering what we must do as an organization and as individual employees to achieve and maintain a record of zero accidents.