

Publication Notes

Dear Executives and Employees of the Member Companies,

The year 2009 marks a significant milestone for us as it is our 10-year anniversary since our chemical industry undertook Responsible Care (hereinafter, "RC") in Korea with a view to uplift the status of the environment, safety and health and to realize sustainable development.

RC is an important voluntary initiative of the world chemical industry and also the public promise of those involved in the chemical industry to take responsibility for the environment, safety and health and to make joint efforts for continuous performance improvement with stakeholders inside and outside the industry.

Thus, our council has publicized Korea RC activities in and out of Korea while publishing a newsletter called "Responsible Care" to share information on RC practices of member companies. We are very pleased to publish this special edition of Responsible Care Issue No.23 for the 10-year anniversary of Korea RC.

For the past decade, based on proactive participation from member companies, we have pursued systematic RC activities for establishing and diffusing RC in Korea. This newsletter reviews the traces of a decade of Korean RC activities and looks at the global RC trend so as to seek future direction to guide through domestic RC activities. In addition, we also publish RC 2020 vision to attain sustainable development as a global RC leader and hope that it would serve to be an opportunity to prepare for the next decade based on what we have done so far.

In addition, we would like to express our deepest gratitude to all those in member companies who actively cooperated with issuing this newsletter.

Congratulatory Speech

1. Brian Wastle/Vice President/Canadian Chemical Producers' Association

Dear Friends in the Korea Responsible Care Council,

I bring you greetings and congratulations from your brothers and sisters in Canada on the 10th anniversary of the birth of Responsible Care in South Korea.

I remember very well the meeting of the International Responsible Care Leadership Group, or RCLG, in Lisbon, Portugal in September 2000 when the Korea Responsible Care Council was welcomed into the family Responsible Care associations. All of us who were present remember being very impressed with the excellent work that had been done by the KRCC to launch Responsible Care in Korea in 1999. Approval for the KRCC to join the RCLG was unanimous and enthusiastic.

The work you have all done over the past 10 years continues to be impressive. By 2001 you had implemented four codes of practice, in 2003 you hosted the Asia Pacific Responsible Care Conference and by 2006 you had added two new codes or practice.

One of the highlights of the international RCLG meeting last year in Morocco was a presentation by the Korea Responsible Care Council on the history, status and challenges of Responsible Care in your country.

We were impressed to hear that you had begun a process of renewing signatures on the Guiding Principles whenever there is a change in the CEO of a member company. Your code guidebook, which helps companies understand both the requirements of Responsible Care and the requirements of government regulation and certifications, is another excellent initiative. Your Educational Outreach, now covering 4 regions and over 100 schools is truly outstanding.

And like many other associations around the world, you also face several challenges. Collecting performance data from all member companies has proven difficult, as has the outreach by companies to their communities. Product stewardship and distribution code requirements are also proving to be more difficult to institute than the more traditional aspects of Responsible Care such as employee safety, pollution prevention and process safety. Initiating a credible process of verification, and gaining recognition of Responsible Care by more people in government, in communities and even within member companies are also challenges that you, and many other associations face.

All of us in the international Responsible Care Leadership Group are eager to assist each other in meeting these challenges and sharing best practices. We in Canada have had some degree of success in meeting some of these challenges over the 25 years we have working at Responsible Care, and will be happy to assist you in any way that we can.

However, we look to Korea and the other large chemical producing countries for ideas and leadership in advancing Responsible Care to meet growing expectations for sustainability. You have much greater resources that we do to take on the difficult tasks of developing "greener chemistry" of finding solutions to climate change, of addressing the health concerns related to chemicals in consumer products, of conserving scarce natural resources. We must become, and be seen as, the provider of sustainable solutions rather than the creator of problems.

We in the Canadian Chemical Producers' Association both celebrate with you this important, 10-year milestone in your Responsible Care journey, and look forward to the exciting changes that you and we and the other members of our global Responsible Care family will be bringing about over the next 10 years.

Thank you.

2. S.K. HAZRA/Chairman/Indian Chemical Council

I am very glad to know that Korean Responsible Care Council is celebrating its 10th Anniversary at a special ceremony in Seoul on 28th October 2009. Incidentally the date coincides with my 62nd Birthday. South Korea is a major producer of chemicals globally, especially in Asia and accordingly Responsible Care has a special importance for the country's Chemical Association, KOCIC, which became a full Member of ICCA in second half of 2007.

The chemicals are the backbone of modern civilization and find extensive use in all aspects of human society. At the same time, these chemicals must be produced and used in ways that lead to minimal adverse effect on human health, environment and society at large. Under Responsible Care, the global chemical industry has committed itself to continual improvement in all aspects of safety, health and environment performance in continuous dialogue with all stakeholders.

During the boom period of chemical industry in South Korea i.e. 1998 to 2006 unofficial records speak of around 1,000 chemical accidents. Korea Responsible Care Council (KRCC) has done a commendable job along with "Research Institute of Disaster and Emergency Management" of Inje University in instituting a voluntary program of providing 24-hour chemical emergency information service.

I exhort KRCC to continue such good work and fine tune its Responsible Care program by committing to Global Product Strategy (GPS), an important pillar of the Responsible Care program. GPS builds a foundation for continuous improvement of industry's management of health, safety and environmental aspects of the product throughout its life cycle.

My best wishes to KRCC on occasion of their 10th Anniversary.

3. Bernhard Thier/Responsible Care Manager/CEFIC (European Chemical Industry Council)

Dear Ladies and Gentlemen, dear colleagues and friends at the Korean Responsible Care Council. My name is Bernhard Thier; I am the Responsible Care manager at Cefic, the European Chemical Industry Council in Brussels.

I would rather be with you today to celebrate 10 years of Responsible Care in Korea. But anyway I am very glad to be able to send you this message:

On behalf of Cefic and the European Responsible Care Implementation Group I am very pleased to congratulate you on this anniversary.

10 years of Responsible Care in Korea are clear evidence of the growing strength of this initiative in Asia. Your work is a great contribution to building the global community of Responsible Care.

Environmental, health and safety leadership is still at the core of Responsible Care. But during these past 10 years new challenges have come up:

- How can we lead the way to a safe management of chemicals throughout the value chain?
- And how can chemical companies preserve natural resources and contribute to combating climate change?

Thanks to Responsible Care, our industry is able to make a strong contribution to meeting these goals.

Since its launch, Responsible Care has become a unique expression of industry commitment for which we are envied by many others. It has received recognition from around the world—from the UN, from national governments, from the European Commission, from trade unions and many other stakeholders.

Let us together carry Responsible Care forward as an added value for the chemical business.

To the chemical industry in Korea, we would like to say “Thank You”

- For being a part of this community
- "Thank you" for 10 years of progressing Responsible Care in Korea

4. Debbie Jackson/Leader of Communication Group/ICCA

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Ladies and gentlemen, honoured guests, and colleagues of the Korea Responsible Care Council, I'm delighted to join you in celebrating 10 years of Responsible Care in Korea. I have very good memories of my 2003 visit to Korea and the successful 8th Asia Pacific Responsible Care Conference. It was also an important introduction to your delicious national dish, kimchi!

My association with the Korea Responsible Care Council dates back to the very beginning when I was editor of Careline magazine. The front page story of the 1999 launch described the road to get there as tough, and the result of many months hard work by a dedicated group of individuals. Over the years I have noticed that many of the Korean people I have met are hard working and lovers of challenge, and they do not give up easily. That is a real plus because Responsible Care is not an easy option for any country's chemical industry and as a 'western' invention, some of its features have been particularly challenging for our colleagues in Asia. One example that particularly impresses me is how enormously successful KRCC has been in its outreach to schools – from engaging with just one school in 2003 to well over 100 in 2008!

There is another major achievement that I would like to mention. It was KRCC members that provided the lead to their colleagues in 11 other Asia Pacific associations in setting up APRO – the Asia Pacific Responsible Care Organization. Discussions had gone on for a long time as Responsible Care practitioners throughout Asia Pacific recognized the need for cooperation between the 12 national bodies. Setting up the formal mechanisms and getting everyone to work together in such a vast region with such amazing cultural diversity was another challenge that KRCC met head on.

Dedication, hard work and enthusiasm are essential attributes to ensure Responsible Care grows and strengthens in Korea. Despite economic, cultural, and other challenges that may have faced you in the past and may face you again in the future, I have no doubt that KRCC will continue to make important progress. I wish you all the very best for the next 10 years of Responsible Care, and congratulations for all you have achieved in the past 10. Thank you.

5. Ulrich Lehner/President/Value chain Industry(VCI)

Dear guests of the Responsible Care ceremony in Seoul, the Chemical Industry of Germany congratulates you on the 10th anniversary of Responsible Care in Korea.

The German Chemical Industry Association, together with its 1,600 member companies and 440,000 employees, is delighted by this event.

We appreciate the efforts you have made in Korea, my sincere congratulations. We wish you a lot of success in the further development of the initiative.

Responsible Care already exists in a lot of countries. As chemical companies we send the same message everywhere : Whatever we do, the health of our employees, neighbours and customers has top priority to us. I am grateful that you subscribe to this principle with your good work in Korea.

By doing this you set a high standard, and for this again, my thanks and my appreciation.

However, we also need to take a look ahead. Talking about sustainability, we have the coming generations in mind. Our own generation has to be interested in the topics of the future, Such as saving the climate, saving energy, and the efficient use of commodities. We also have to pay attention to our health service. We need Responsible Care in all of these topics. Only by taking account of them can we convince the younger generations of the use of Chemistry in their own lives. For this goal we all need to work together, throughout the world.

Let me once again sincerely congratulate you on the 10th anniversary of Responsible Care in Korea.

Sincerely Yours Ulrich Lehner.

6. Kenny Sun/chairman/AICM (Association of International Chemicals Manufacturers)

My name is Kenny Sun and the chairman of the Responsible Care Committee of AICM. AICM shown here is the Association of International Chemical Manufacturers in China. On behalf of AICM, I want to congratulate of all the KRCC members for your outstanding achievements that you have made in the implementation of Responsible Care in the past 10 years.

KRCC has always played a leadership role in the promotion of Responsible Care in Asia Pacific.

Just last year KRCC received full membership in ICCA which is another recognition for your contributions in the Responsible Care area.

I hope we can continue working together and making our industry even more sustainable industry in Asia Pacific.

Once again, congratulations and I wish you make a very successful conference.

10 years' Performance of Korea Responsible Care Implementation and Proposal for the next 10 years

Kyong-Ok Kim
Head of RCSD Team, BASF Korea

Year 2009 marks the 10 years' anniversary of Korea Responsible Care Council (KRCC). Entering 10 years' anniversary of the council, I would like to look back on how Korea Responsible Care Council has led Responsible Care activities and what outcomes it has achieved so far.

1. Introduction of Responsible Care to Korea and the background of the Establishment of the KRCC.

To recover the fallen image and lost trust of chemical industry, the Canada Chemical Producers' Association (CCPA) established an environment, safety, and health improvement program called Responsible Care (RC) in 1985 and the American Chemistry Council (ACC) adopted RC in the US in 1988. ACC founded the International Council of Chemical Associations (ICCA). Through RC, ICCA attempted to recover the trust for the chemical industry and built RCLG for the purpose of distribution and promotion of RC throughout the world.

With the establishment of RCLG, RC finally started to spread around the world.

In response to the global trend, the Korea Petrochemical Industry Association (KPIA) determined to adopt RC in July 1992 and began preparing the necessary process. To establish an organization to take care of Korea's RC tasks, RC Steering Committee and RC Working Group were constituted in December 1998 and after about a year's preparation, the Korea Responsible Care Council was established on December 6, 1999, in participation with the petrochemical industry, fine chemistry industry, fertilizer industry, Chlor-Alkali industry, the American Chamber of Commerce in Korea, the European Chamber of Commerce in Korea and other chemical companies.

2. Key Performance of 10 years' efforts of implementation of RC in Korea

2.1 Guiding Principles

The guiding principles represent CEOs' will to continuously improve environmental, safety,

and health performances by each member and fulfill corporate social responsibility. To gain membership of KRCC, it is obligatory for the CEO to sign up and submit to the principles. It can be said to be a means of confirming unwavering commitment of the CEO for RC implementation as a member of KRCC in the future.

At the time of foundation in 1999, KRCC received the guiding principles signed by CEOs of all prospect companies for membership. Since then, however, there were some problems that downgraded the status of RC as it failed to ask for successive CEOs for the signed principles when CEOs changed. To correct the problem, at the regular meeting held in January 2008, a new regulation was passed on a vote to impose signature renewal obligation for newly inaugurated CEOs so as to maintain RC obligation and its status.

2.2 Name and Logo

The name 'Responsible Care' and the logo are managed by ICCA/RCLG and can only be used by members registered at ICCA/RCLG. KRCC was accepted as the 46th member in the RCLG meeting held in Lisbon, Portugal in September 2000 and allowed to use the RC name and logo. In March 2001, KRCC started to design its own RC logo that combined the basic format with a traditional Korean image and applied it in April 2002 to complete registration in September 2003. This allowed members to freely use the RC logo designed by KRCC in Korea as well.



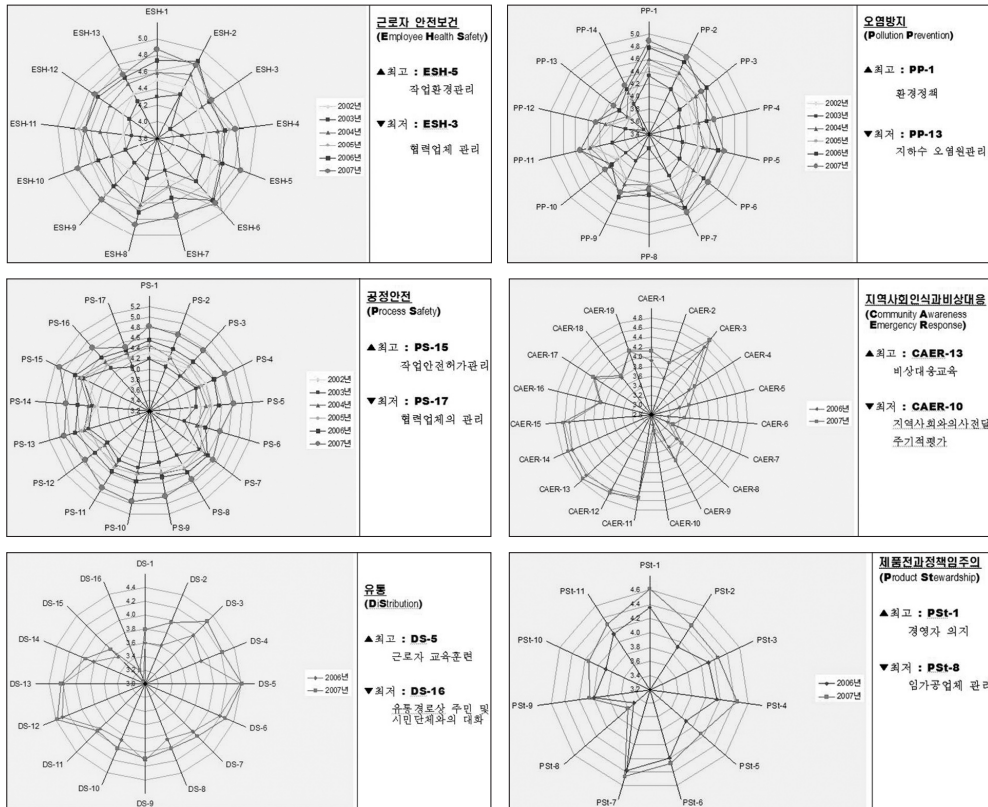
2.3 Code and Guides

The basic concept of RC is to thoroughly manage the entire chemical life cycle from development to disposal in order to continuously improve EHS performance and earn public trust to corporate social responsibility. To achieve this, RC is divided into six codes of practice and, if necessary, 'Community Awareness & Emergency Response' from the six practices can be separately implemented.

To facilitate the integration of RC to a company's existing EHS processes, KRCC selected four codes (Process safety, Pollution prevention, Employee Health & safety, Emergency Response) and started developing management practices for them in March 2001.

In August 2001, the development of management practices for the four codes was completed and distributed to members and greatly contributed to the members' implementation of RC. After three years, in September 2004, KRCC started the development of the last RC codes (Distribution, Product stewardship, Community Awareness) and completed them in August 2005 to distribute to members. Thanks to

KRCC's efforts, Korea has become an indisputable member country that put all areas of RC into practice. The management practices greatly help to continuously improve EHS performance by identifying the current EHS level and its pros and cons.



On the other hand, the need for making an RC codes guidebook was accentuated as it was necessary to integrate and combine RC with the existing EHS processes practiced on site with a view to reinforce RC-specific improvement activities. The guidebook plays a role in helping members to comply with various rules and regulations and, at the same time, to implement six RC code practices by referring to it. As it was determined to publish a guidebook in a February regular meeting in 2006, and accordingly launched, the RC codes guidebook comprising of a 1-volume manual and 35 procedures was distributed to members in September 2007. The publication laid a cornerstone for RC, which had previously been recognized as being somewhat abstract, to be closely implemented to the workplace while significantly promoting work efficiency improvements.

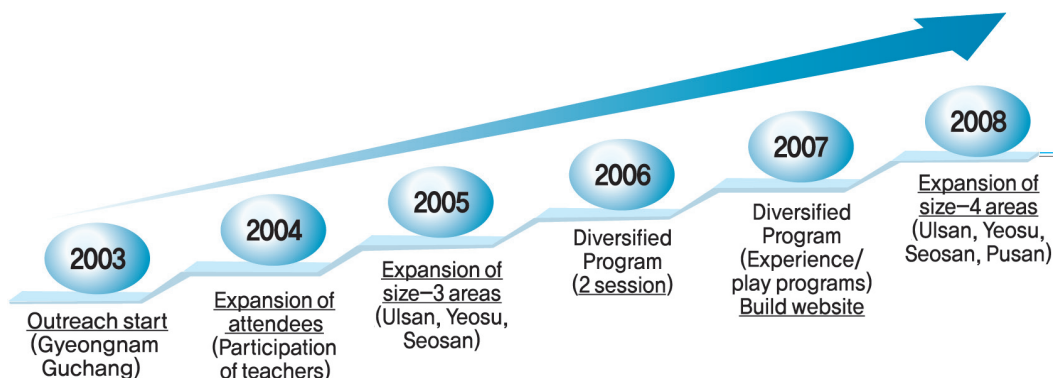
2.4 Indicators

As it had been stressed that RC is a voluntary program to promote a better image and

recover confidence in the chemical industry since the early times of RC adoption, it tended to bring lopsided attention to RC as an abstract and qualitative program rather than an EHS improvement program. To correct the awareness, KRCC developed 12 indicators to express EHS performance in a quantitative means and started making a database from 2002. The database demonstrates that RC is being practiced in the workplace and used for performance reports, one of the requirements for RCLG members.

2.5 Communications

For the chemical industry to obtain trust from society (the public), it should actively promote the positive aspects of the chemical industry while fulfilling the social responsibility of businesses. Social responsibility constitutes one of the critical axes of RC and is the one that must be implemented to ensure continuous improvement. KRCC has organized an RC outreach program, 'Come! Fun World of Chemistry', for children to promote the role and significance of the chemical industry and as part of its social responsibility.



School	: 1	10	75	89	95	187
Attendees	: 240	500	1,560	1,720	1,500	1,650
Participated Member companies	: 5	19	38	37	35	33

The program allows children to learn the importance of the chemical industry, to be interested in and to become familiar with chemistry, thereby fostering a positive awareness toward the chemical industry. It plays a role in improving the overall image of the chemical industry and serving as a stepping stone for the long-term development of the chemical industry.

2.6 Sharing

The more chemical companies participate, the higher the influence of RC becomes. When

there are more participants in charity activities, the outcome is much more easily noted by society. For that reason, RC shares information, 19 times from June 2003 to the end of 2008, KRCC has held the KRCC Academy to share much information on EHS among members and non-members. The reason behind disclosing information to non-members without any discrimination was due to the intention of RC.

3. Proposal for the next 10 years

During the last decade, KRCC strived to settle RC into Korea. Thanks to its efforts, most chemistry-related businesses have adopted RC as a means of sustainable development, and continuously improve environmental, safety and health performance through RC. Due to business endeavors and ceaseless social contribution activities, the public awareness of the chemical industry has much improved.

However, many still believe that the main cause of global warming is the chemical industry. Therefore, the chemical industry is in the position to continuously improve itself and set up higher levels of improvement objectives and strategies for the next 10 years based on the past 10 years. In addition, as the environmental issues transcend national borders and are addressed on the global stage, businesses should actively respond to international policies. It is expected that a company that fails to consider the environment will not survive in the future.

KRCC has set this year, the 10-year anniversary for the introduction of RC to be a year for developing RC 2020 vision and try to pursue a future-oriented autonomous management culture based on strengthened new paradigms of environment, safety, and health. This includes settlement of environmental, safety, and health culture of industrialized countries, social contribution activities, raising awareness of stakeholders, and internally-bolstered status with RC Global Certification, etc.

In line with the endeavors made by KRCC, each member should make an effort to implement sustainable development through RC and try to attract non-member chemistry business to join RC until all chemistry businesses belong to RC. It is due to the fact that environmental issues are no longer discussed at company level, or country but of global level in that it demands all to solve the problems.

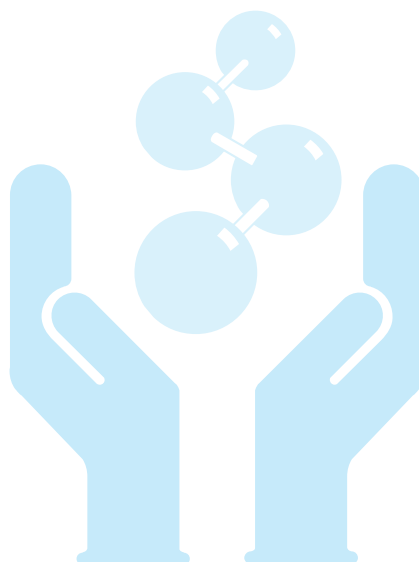
BASF is implementing the same EHS policies in Germany as well as in other countries by applying the same EHS standards to all BASF plants in the world and All BASF companies are doing their best to achieve the 2020 EHS goals set by the BASF Group. Such policies are equally implemented in not just BASF companies but also all of their partner companies as well. Under the RC assessment, a contractor that is deemed to have

its EHS performance fall short of BASF standards can no longer maintain a partnership with BASF.

As long as there is a human race on earth, there will be a chemical industry. Thus, for our descendants, we have a responsibility to protect the environment and keep it clean and well-preserved for the future of mankind and the globe. In KRCC where businesses that cherish and love the chemical industry, members are expected to take the lead and play various key roles in doing so.

The definition of RC that we came across a decade ago is still in accord with the current demand of time and will still be relevant a decade later.

"Responsible Care is a voluntary initiative for the chemical industry to continuously improve the health, safety and environmental performance and to fulfill their corporate social responsibility and effectively respond to any concerns by the general public by managing the products used and manufactured in the chemical industry for the entire life cycle from development to disposal."



New Milestone for Korea's Chemical Industry, Traces of a Decade of RC Promotion in Korea

The year is 2009! It is the 10-year anniversary of Responsible Care (hereinafter, "RC"), which is a global initiative by the chemical industry to recover credibility for the industry through voluntary improvement efforts on environment, safety, and health introduced to Korea.

The launch of RC in Korea was not very smooth from the initial stages. In 1992 there was the first attempt to adopt a globally recognized RC from 1985. Due to a lack of understanding of RC and unsatisfactory participation by the domestic chemical industry, however, it required a lot of effort and time to implement RC. Only after six years, could a Joint RC Steering Committee be established in 1998. The following year, December 16, 1999, 59 chemical companies founded KRCC and as it gained regular membership in RCLG (Responsible Care Leadership Group) in 2000, KRCC was recognized by the international community.

After a decade, led by KRCC, there have been many RC-related activities in Korea and it is no longer a strange culture and ethic to Koreans. Thus, we would like to look back on what we have done for the past decade regarding KRCC activities and to introduce those who contributed to KRCC's establishment. We hope that this may serve to be an opportunity to set out the next 10 years to come.

Establishment for the Foundation of KRCC

1. Guiding Principles

The guiding principle is a public announcement of will of the chemical industry to actively accept the concerns of the general public regarding the harmful effects of chemicals and toxic wastes. It is one of various means to confirm the CEO's clear commitment to RC and RC implementation starts with a member company's CEO's signature on the guiding principle as a token of its full support to the RC's endeavor for taking responsibility and controlling chemicals.

Regarding this, KRCC has twice amended its guiding principles to establish an obligation on member companies to renew the signature when their CEO is replaced. This solves a problem arising from insufficient awareness of a member company's new CEO of the guiding principles when the CEO who had signed the principles for RC membership was replaced.

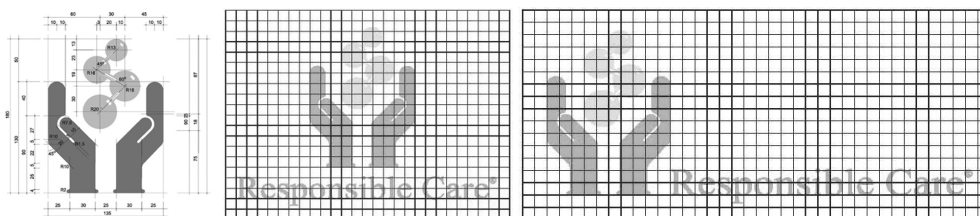
2. RC Logo

To maximize the internal unity for RC practices and external promotion effects, the 'RC logo mark' was introduced and is widely used throughout the world. The logo takes the shape of two hands covering molecules and symbolizes the protection of and caring for mankind by the chemical industry.

KRCC investigated various logo marks of different RC organizations in other countries and decided the KRCC logo mark by integrating the basic format with a traditional Korean image and firmly set out the standard for RC logo mark use to prevent improper use of the logo in the 2nd regular meeting in 2001.

On April 2002, it completed application of the logo mark under the name of the five organizations including Korea Petrochemical Industry Association, Korea Petroleum Association, Korea Speciality Chemical Industry Association, Korea Soda Industry Association, and Korea Fertilizer Industry Association and strengthened the administrative standard of the RC logo mark and allowed its use in various colors in February 2006.

In addition, it aims to raise awareness of RC by preparing and distributing RC logo mark badges and by promoting the use of the RC logo mark on member companies' home pages and business cards, etc.



3. RC Codes and Guide

In August 2001, KRCC adopted and implemented four codes: Employee Health & Safety, Process Safety, Emergency Response, Pollution Prevention as priority practices.

However, as there is an increasing demand by the public on the chemical industry for the environment, safety and health, it was further accentuated to expand the scope of RC practices. In April 2006, KRCC decided to add two more codes, Distribution and Product stewardship, to make six codes and 90 management practices in total. This means Korea belongs to a 6-code management scheme, the same as other industrialized countries.

Furthermore, we have published and distributed RC Code Guidebooks to help employees in charge of KRCC tasks in member companies. The RC Code Guidebook consists of one code and 35 procedures and it forms one guideline by integrating RC practice codes and a variety of certificates on environment and safety. The guidebook plays a role in helping members abide by various rules and regulations and to put in practice what RC codes dictate, thereby facilitating RC implementation in the business sites.

Information Exchange and Promotion Activities Among Member companies

1. Communication with Local community – Come! Fun World of Chemistry

Starting from Geochang in Gyeongnam in 2003, KRCC is organizing ‘Come! Fun World of Chemistry’ in four regions including Yeosu, Ulsan, Seosan, and Busan in order to uplift the image of the chemistry industry and promote the talents in science and engineering,

‘Come! Fun World of Chemistry’ serves to inform regional students that chemistry is directly and indirectly related to our daily lives and to trigger their interest in chemistry to foster talented individuals for the chemistry industry.

In fact, the survey of 1,600 children who had participated in the program, found about 84% of them replied that they find chemistry interesting after conducting various experiments in ‘Come! Fun World of Chemistry’ and came to be interested in the chemical industry after viewing films introducing the industry.

As such, ‘Come! Fun World of Chemistry’ can be an important activity contributing to society in that it changes the way children think about chemistry as difficult and emphasizes the positive aspects of the industry and the necessity and significance of the chemical industry.



2. Platform of information exchange between members – KRCC Academy

KRCC Academy is a working-level education and training program that shows how to respond to a rapidly changing environment and also provides useful information on how to actively deal with changing issues in environment and safety by exchanging opinions between experienced workers and experts with professional knowledge.



As for KRCC Academy instructors, government officials account for 41% (31) while the most popular presentation topic was climate change (29%).

In addition, KRCC is planning to further promote the platform of information exchange and opinions and insight sharing among RC coordinators and those responsible for environment & safety in member companies through its annual meeting, 'Annual RC coordinator Workshop'.

3. Information Delivery Service through Periodicals – Responsible Care Newsletter

Since 2001, KRCC has published and distributed the KRCC Newsletter to member companies and relevant organizations so as to publicize Korea's RC activities in and out of Korea while facilitating smooth information exchange between members.



The most popular authors of the KRCC Newsletter were member companies' executives and employees with 39% while the popular themes covered RC practice examples in member companies with 40%. So far a total of 21 issues and about 27,000 copies have been published.

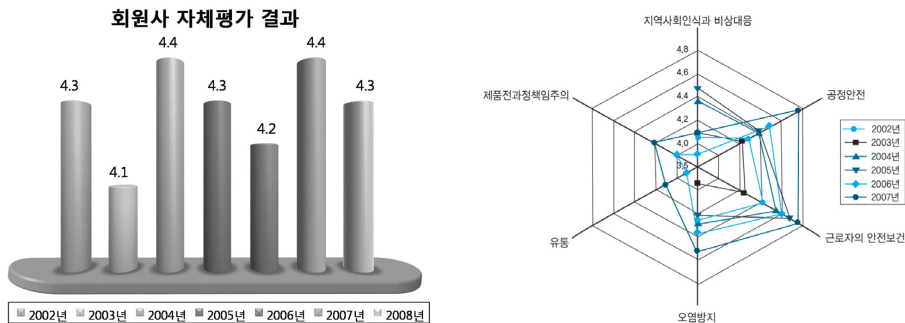
4. Regular Assessment of RC Implementation level – Self-assessment by Members

As RC is a voluntary initiative for improvement, self-assessment constitutes the basic assessment method.

From 2002, KRCC has carried out self-assessment of management practices by each

code. Though there is a steady rise in member participation and code implementations, it appears to be still short of reaching settlement stage.

For management practices with unsatisfactory outcomes, KRCC is enhancing the level of implementation through various programs: KRCC Academy, workshops, model examples and expert lectures and it seems necessary for members to set a higher level of improvement targets and strategies.



5. Online PR on RC and Chemical Industry – KRCC Homepage operation

KRCC built the homepage (www.krcc.or.kr) in March 2001 in order to facilitate information exchange between members by introducing RC and promptly posting both domestic and overseas environment, safety, and health-related information and established a coordinator-exclusive BBS to improve mutual data exchange and communication between RC coordinators in 2005.

In 2007, it transformed the existing database into a distinctive section to provide a range of information on environment, safety and RC. With the invigorated outreach activity, it established an additional homepage ('Come! Fun World of Chemistry' (www.hichem.or.kr)) to deliver information not only to members but also to a wider audience.

Recently, as with the increase in homepage visits by children, parents, regional teachers who participated in 'Come! Fun World of Chemistry', it has developed variegated contents for the general public to strengthen its PR towards not just RC but also the overall chemistry industry.

6. Visiting Information Service – Responsible Care Weekly

Following KRCC's various information provision services regarding environment, safety,

and health through the homepage in 2001, in June 2004 it started another new service, 'RC weekly', that transmits a weekly mail for 500 key personnel including executives and employees among members, government and relevant organizations' officials with a view to raising user convenience and ensuring active information delivery.

RC weekly service offers distinctive advantages to users as it allows them to receive KRCC news and main activities, updated information on environment and safety to personal computers, obviating the need to access the KRCC website to check online information services provided.

Sent every Tuesday, RC weekly has gradually increased the number of receivers. As of October 2009, it has been sent to approximately 170 thousand about 250 times to play a role in raising awareness of Responsible Care, KRCC, and the chemical industry.

KRCC continues to strive to become a leading information portal for the industry by connecting its homepage and RC weekly service.

KRCC in world

1. Participation in overseas RC activities

To reinforce mutual cooperation and PR in and out of Korea, RCLG, a steering committee of RC has actively participated in annual meetings and other international activities such as Asia Pacific Responsible Care Conference (APRCC).

2. The 8th Asia–Pacific Responsible Care Conference (APRCC) in Korea in 2003

Hosted by KRCC in 2003, APRCC is one of the regional international meetings which is organized in countries in the Asia–Pacific Region and has contributed to the diffusion of RC throughout the region.

Various stakeholders such as government, academia and NGOs along with those engaged in the chemical industry attended the 8th Seoul APRCC and consequently it offered an opportunity to understand how RC activities were viewed by stakeholders outside the industry. Also, as RC experts from North America and Europe joined the meeting, it served as a platform to exchange valuable information such as the latest trend in

environment and safety in the global chemical industry and RC practices.

Furthermore, KRCC launched Asia-Pacific Responsible Care Organization (APRO) to forge and maintain close ties between 12 countries by sharing country information and problems from country representatives to further reinforce the inter-governmental cooperation system for RC development.

KRCC and People

With diligent preparation and efforts by many people, KRCC has so far completed codes and management practices while, externally, hosting APRCC to provide a momentum to raise awareness of RC in Korea and to invigorate its activities.

What underpins the successful RC implementation in Korea are the endeavors made by its people: starting from the first chairperson, Lee, Jeong-Ho who led Korea's RCLG membership with unanimous approval from member countries in the 2000 Portugal meeting, to the 2nd chairperson, Noh, Ki-Ho (president of LG Chem) and the 3rd Chairperson, Huh, Won-Joon (Vice-chairman of Hanwha Petrochemical) and 4th and 5th Chairperson, Jeong, Bum-Shick (the President of Honam Petrochemical), a total 17 of vice-chairpersons, 33 directors, and 15 Chairpersons of Committee have filled the posts and operated KRCC and made a great contribution to firmly lay the basis of KRCC.

In addition, KRCC owes much to 6 code readers who completed RC codes for 7 years and about 200 KRCC coordinators who have done their best to effectively promote RC activities to each company, teachers' organization (Teacher for Exciting Science, Amenity Science Research Group, Ulsan Science Research Group, and Chemistry Lover Group(Whasamo)). Without their endeavors, it would not have possible to settle RC in Korea as quickly as it has actually been.



1대 이정호 회장
(’99.12 ~ ’01.3)



2대 노기호 회장
(’01. 3 ~ ’04. 2)



3대 허원준 회장
(’04. 2 ~ ’06. 2)



4-5대 정범식 회장
(’06. 2 ~ 현재)

Concluding remarks

For the chemical industry to attain ceaseless growth, it is essential to uplift its image. Therefore KRCC makes efforts to care for local residents and actively tackle any concerns about the chemical industry.

RC activities, the autonomous efforts by the industry for environment, safety, and health, do not take root in a day. If the past decade assisted us to catch up to the RC activities of industrialized countries through various trial and error, now it is high time to make greater efforts to implement RC and social responsibility for the next 10 and 20 years to attain sustainable development of the industry in the midst of intense competition in the global economic system.

한국RC협의회 지난 10년		
2009년 ~ 2006년	2005년 ~ 2003년	2002년 ~ 1999년
2009 03 Supply chain을 통한 RC 확산 추진 2008 01 제9기 정기총회 개최 (정범식 회장 연임) 04 환경 안전 보건에 관한 기본 방침 CEO 서명갱신 09~10 열려라! 즐거운 화학세상 행사 4개 지역 확대개최 2007 04 해외 전문가 초청 제품전 과정책임주의 세미나 개최 09 RC 코드가이드북 발간 09~10 열려라! 즐거운 화학세상 행사 3개 지역 개최 2006 02 제7기 정기총회 개최 (정범식 회장 취임) 04 RC코드가이드북 발간 09~10 열려라!즐거운 화학세상 행사 3개 지역 개최	2005 07~11 화학산업 미래전략 아카데미 개최(3회) 09~10 열려라! 즐거운 화학세상 행사 3개 지역 확대개최 2004 02 제5회 정기총회 개최 (허원준 회장 취임) 05 중소화학기업 대상 RC 설명회(5회) 11 화학방재정보서비스 산학 협정체결 2003 05 중소화학기업 대상 RC 설명회(10회) 07 Outreach 행사 시작(거창) 11 제8회 아시아·태평양 RC 대회 개최	2002 03 회원사 RC 선포식 추진 12 제1회 KRCC 아카데미 개최 2001 03 제2기 정기총회 (노기호 회장 취임) 03 KRCC 홈페이지 (www.krcc.or.kr) 개설 08 RC 4개 코드별 실행지침 완성 2000 02 RC 위원회 조직완료 및 활동시작 09 RCLG 회원 가입 (포르투갈리스본) 11 RCLG 회장 (Stan Szymanski) 방한 1999 12 창립총회 (이정호 회장 취임)



Introduction of GPS and the future plan of CP&H leadership group for GPS

UN Strategic Approach to International Chemicals Management (SAICM) states that by the year 2020, chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health. In order to better address this issue, ICCA, the International Council of Chemical Associations, launched the Responsible Care[®] Global Charter and the Global Product Strategy (GPS) at the first session of the International Conference on Chemicals Management (ICCM-1) in Dubai (February 2006). GPS addresses the product stewardship components of Responsible Care and commits to improve risk characterization and risk management within its global membership in balance with existing national and regional regulatory requirements.

Under the umbrella of the Global Charter and the GPS, ICCA members demonstrate to governments, stakeholders and the public that our industry is a reliable, willing and responsible partner in meeting global sustainability objectives. ICCA members seek to improve industry performance, and position the chemical industry as a constructive contributor to the implementation of SAICM.

ICCM-2 (Geneva – May 2009)

The second session of the International Conference on Chemicals Management, (ICCM-2) was an opportunity for ICCA to present the industry's SAICM-related activities driven by the Global Product Strategy (GPS) and Responsible Care[®] Global Charter. ICCA members provided numerous interviews to the press and received significant media coverage that positively positioned the industry. A high-level side event brought senior IGO and NGO representatives together with industry leaders, prompting panel member Achim Steiner, Executive Director of the United Nations Environment Program (UNEP) to call it an "extraordinary moment." The session included challenging views from the IGO and NGO representatives as well as tough questions from the audience.

But this also raised discussions on upcoming challenges ICCA will have to face. In addition to the four emerging policy issues identified for detailed consideration at ICCM-2 (nanotechnology and manufactured nanomaterials, chemicals in products, electronic waste, lead in paint) new issues were raised such as voluntary substitution and legacy of chemical contamination, especially in developing countries.



Update on the achievements

Over the past 3 years, ICCA has made significant strides toward several of its goals in its implementation of GPS.

A “base-set” of hazard and exposure information for chemicals in commerce along with technical guidance for member companies to help them define safe use conditions for chemicals was developed along with recommendations on best practices, specially in terms of product stewardship. Special focus lies on developing countries and SMEs to help them effectively evaluate the safety of their products and enhance product stewardship performance.

Long-term capacity building efforts to improve the capabilities of SMEs and provide outreach to developing countries have been developed. Activities include GPS awareness building workshops held in a number of countries including Argentina, Bulgaria, Thailand and Japan. The publication of “Global Chemical Industry Capacity Building” highlights a small selection of company-level activities to serve as examples of the global chemical industry’s ongoing capacity building and knowledge-sharing activities in developing countries and economies in transition. Activities range from highly targeted projects to more general policies and practices.

A proposal on the SAICM Modalities of Reporting has been established. This was done in conjunction with the International Project Steering Committee (IPSC) created by the Canadian government with SAICM support. In this context, 12 new parameters to enable industry to report progress on GPS implementation have been identified and developed. Because GPS product stewardship commitments are largely implemented through Responsible Care, data can best be collected through the existing RCLG web-based reporting mechanism. These key GPS product stewardship parameters are being reported for the first time in full in 2009.

In terms of Advocacy, ICCA strived to engage proactively in the SAICM negotiations, participated in discussions of key issues and reached agreement on a range of procedural issues. These efforts will ensure SAICM remains a voluntary, multi-stakeholder forum, focused on best practices and technical assistance.

Looking ahead

Following the development of the “base-set” of hazard and exposure information for chemicals in commerce, a mechanism to make relevant information from co-producers available to the public in an understandable form is being created. ICCA will share this



information with downstream customers via a web-based central IT-portal, enabling them to improve their environmental, health and safety (EH&S) performance. ICCA also will share this information with governments as part of its efforts to meet regulatory requirements and to improve industry performance in countries where such regulations are not yet in place. Full implementation is foreseen for 2018.

A Joint Working Group with the Responsible Care[®] Leadership Group (RCLG) has been established with the objective to achieve more effective joint collaboration on the development of strategic workshops, using the RCLG network.

Capacity Building workshops will focus on the training of regional trainers to proliferate Product Stewardship expertise. Incorporate “ICCA guideline for Risk Assessment” will be incorporated into the work shops. Collaboration with IGOs to effectively deploy GPS in developing countries will be developed.

In terms of Reporting future initiatives consist of developing a Baseline Estimate Report (BER) of current global performance under GPS to be provided to the SAICM Secretariat, identifying additional audiences for reports and creating a process for performance analysis in a format suitable for reporting.

Furthermore, the development of an independent third-party certification / auditing process that enhances credibility is under consideration in conjunction with the RCLG. Equally under consideration is the eventual ownership transfer of the process to the RCLG.

An advocacy strategy, focused on the 2020 goal, which aims to provide meaningful industry engagement in key forums, is being developed in the period leading up to ICCM-3 in 2012. Identification of gaps that may exist between our planned efforts (e.g. implementation of GPS and RCGC) and important stakeholder expectations, and possible options to close those gaps will be analysed. In the field of internal engagement, the aim is to build a broader advocacy network through national associations and the Responsible Care network. Possibilities of partnerships with inter-governmental organizations and NGOs on projects that contribute to reaching the 2020 goal will be undertaken.

In conclusion, ICCA sees numerous opportunities to sustain and further advance the gains made at ICCM-2, will continue to position itself as a collaborative partner in these programs and demonstrate performance improvements over this time horizon.



The Responsible Care Global Charter: an International Overview

As the Korea Responsible Care Council celebrates a decade since its launch, I welcome the opportunity to set out the achievements and challenges facing Responsible Care at the international level.

It is also an appropriate occasion to introduce the RCLG's new CEO Sponsor and Chairman. Each of the three leadership groups of the International Council of Chemical Associations (ICCA)—Chemical Policy & Health, Energy & Climate Change and Responsible Care—has a CEO Sponsor. In September, the RCLG welcomed Stephanie Burns, Chairman, President and CEO of Dow Corning as its new CEO Sponsor. Dow Corning is a global leader in silicones, silicon-based technology and innovation with record sales of \$5.45bn in 2008.

Ms Burns ensures the RCLG has an open channel of communication with the ICCA Board, and will promote Responsible Care on behalf of ICCA at appropriate forums. Our new RCLG Chairman, Peter Cartwright, is also a senior executive with Dow Corning, holding the position of Vice President of Environment, Health and Safety. Mr Cartwright, who brings a wealth of relevant experience to this important assignment, succeeds Phil Lewis who retired in May 2009.

The support and guidance of Ms Burns and Mr Cartwright will be essential in these busy and economically challenging times.

In 2006, at the first International Conference on Chemicals Management (ICCM-1) in Dubai, the ICCA launched the Responsible Care Global Charter, a document that provided a blueprint for strengthening our industry's initiative over the coming years. This Charter focuses on important challenges facing both industry and global society, from sustainability to continuous performance improvement and value chain engagement. More than 150 global CEOs have now signed a Declaration of Support for the Global Charter. The figure includes 86% of the world's top 115 chemical producers by turnover, and more than 66 small and medium-size enterprises (SMEs).

To demonstrate its commitment to sustainable development, the ICCA last year approved a new tag line for use with the Responsible Care logo: "Our commitment to sustainability." This linkage gives a clear signal to all stakeholders that our industry is committed to the goals of the World Summit on Sustainable Development (WSSD). We are encouraging its



use at company and national level and it is worth noting that a number of Responsible Care associations—from Canada and Brazil, to Spain, New Zealand and Japan, among others—have taken important steps to better align their initiative with sustainable development.

Implementation of the Charter presents fresh challenges as we face some of the toughest economic conditions our industry has ever experienced. Nevertheless, we continue to move forward on key areas including building company-level support; continued global expansion of our initiative; and providing ongoing assistance to association members to help them implement ICCA's chemical management strategies and drive our commitment to sustainability.

The leadership of global chemical producers has been instrumental in driving Responsible Care through the value chain, and in helping improve engagement on product stewardship and chemicals management issues with SMEs and emerging producers. These companies also enable us to engage with the industry in areas that are not yet part of the RCLG network. Capacity building, improving information and knowledge, and best practice sharing are key elements of both company and association activities. The RCLG and the Chemical Policy & Health (CP&H) Leadership Group have formed a joint Capacity Building Workgroup to provide regional workshops to promote product stewardship and the ICCA's Global Product Strategy (GPS), also launched in Dubai.

These actions align well with the UN-led Strategic Approach to International Chemicals Management (SAICM), and were recognized at the ICCM-2 meeting when ICCA was presented with a Bronze Award by the United Nations Environment Programme for its 'valuable in-kind contribution'.

Under the Charter, companies commit to "go beyond self assessment of the implementation of Responsible Care and adopt verification processes carried out either by associations, government bodies or other external organizations". More RCLG associations—including your own organization—are looking at introducing processes that enable their member companies to move beyond self-assessment. Several have introduced, or plan to introduce, mandatory third party verification of Responsible Care for members, viewing it an important step towards improving stakeholder awareness and credibility in the initiative. A September workshop, hosted by Uruguay and supported by the RCLG, will serve to extend verification in South America.

An area which the RCLG has both pioneered and developed for the past several years on behalf of ICCA is performance reporting against a number of key indicators. These global performance reporting efforts stood us in good stead at ICCM-2, attracting considerable interest from stakeholders. In 2008, the RCLG launched a new web-based performance



data collection platform that serves as the electronic portal where Responsible Care and, from this year, GPS implementation data are collected annually from the 53 RCLG associations. The data dovetails well with the 20 indicators proposed by the SAICM Secretariat in December 2008. At ICCM-3 in 2012, we will report on progress using our Responsible Care metrics.

In terms of geographic expansion, the RCLG has continued to reach out into new areas with workshops, conferences and other events. Our newest member, and host to the RCLG's 2009 annual meeting, is Russia which was accepted in 2007. We are moving forward with plans to introduce a regional program to the Middle East through the Gulf Petrochemicals and Chemicals Association. Elsewhere, we are working with associations in Eastern European countries, and in Nigeria, Laos, Sri Lanka and Viet Nam.

The phenomenal growth of the chemical industry in China has kept the Hong-Kong registered Association of International Chemical Manufacturers (AICM) and its member companies busy. They have made excellent progress, working closely with the China Petroleum and Chemical Industry Association (CPCIA), and are holding a joint Responsible Care conference this month (October) in Beijing. Most recently AICM launched a program of Responsible Care Open Days that have already attracted enormous public interest.

As well as expanding into new areas, the RCLG supports its existing network of member associations. Over the past two years, assistance has been provided to Argentina, Colombia, Ecuador, Estonia, Greece, India, Indonesia, Russia, Slovenia, Uruguay, and the Asia-Pacific Responsible Care Organization. We have also had notable success in our efforts to extend the initiative through the supply chain, supporting GPS objectives. In the past year, agreements on Responsible Care have been signed with the International Council of Chemical Trade Associations (ICCTA), the European Chemical Transport Association (ECTA), and the National Association of Chemical Distributors (NACD) in the USA.

Communications play an important role in strengthening and spreading Responsible Care, and the RCLG has developed a series of global Responsible Care brochures that so far have been translated from English into Spanish, French, German, Chinese and Japanese. A 2008 Responsible Care Status Report was completed, detailing progress in each of the five areas identified under the SAICM objectives, risk reduction, capacity building and technical cooperation, governance, information and knowledge, and prevention of illegal international traffic.

For 2010, key RCLG activities include:

- Execute process for keeping CEO support for Charter and GPS current through a communication with current signatories and a recommitment process where leadership has changed.



- Expand RCLG data collection tool to include product stewardship-specific questions to measure progress under GPS. Work with CP&H LG to develop first baseline report to SAICM Secretariat in March 2010.
- Develop global Responsible Care management system and verification framework guidance and examples of systems within RCLG membership.
- Continue to work to introduce Responsible Care in emerging growth markets through identifying association sponsors and CEOs doing business in those countries and regions.
- Conduct product stewardship/GPS workshops in cooperation with CP&H.
- Facilitate Charter implementation based on a 'request for support' process with RCLG members.
- Publish results of all capacity building/mutual assistance activities for 2008 calendar year.

In conclusion, the RCLG looks forward to KRCC's continued enthusiastic engagement in the international arena, and wishes you all success for the next 10 years of Responsible Care, and beyond!

SIDEBAR

The UN-led Strategic Approach to International Chemicals Management (SAICM) is a global policy framework to achieve sound management of chemicals throughout their life cycle so that, "by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment." SAICM helps governments, the UN, industry, and other stakeholders to work together to reduce the risks of chemicals to human health and the environment. It was adopted in 2006 at the International Conference on Chemicals Management (ICCM-1) in Dubai. ICCM-2 took place earlier this year in Geneva, Switzerland. The International Council of Chemical Associations (ICCA), which had a strong presence throughout the week-long event, demonstrates its commitment to SAICM through Responsible Care and the initiatives it fosters such as the Global Product Strategy (GPS) and the Long-range Research Initiative.

Quantitative Risk Assessment

Kwon Bum Huh, Manager
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In line with the rapid advancement of 20th century science and technology and opulent lifestyles, petrochemical plants and their subsidiary facilities are increasingly becoming more complex and sophisticated and it is vital to create rational and scientific risk assessment techniques not only to ensure safety for those facilities but also to secure a competitive edge in the world market as it prevents human and economic loss in business management.

Dealing with high-pressure gas and harmful substances that often accompany powerful explosions and fires, the petrochemical industry always has danger as a part of its innate qualities so that it requires proactive risk management. Thus, through Quantitative Risk Assessment, which can be cited as the most evolved form of risk assessment methods, I would like to help the industry to maintain pleasant management activities by identifying and tackling potential risks in a systematic and scientific way.

1. What is Quantitative Risk Assessment?

Quantitative Risk Assessment is one of the most advanced risk assessment methods that represents the degree of individual potential risk of a facility in figures. Hence it can make a relative comparison of risks of different facilities and plants and suggest an objective means to induce outcomes, thereby enabling rational risk management. However, even though Quantitative Risk Assessment techniques are wide in scope, I would like to limit our discussion to the introduction and methods of Quantitative Risk Assessments

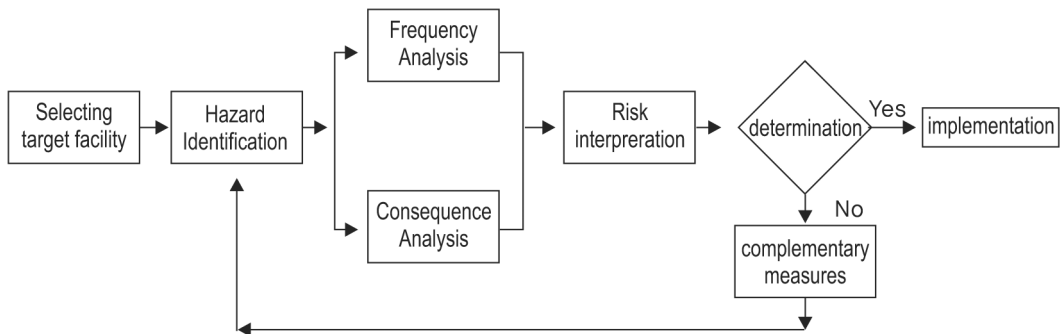
2. Definition of Risk

The risk can be defined as “the combination of the probability of unexpected accident occurrence and the consequence of an unexpected accident”. In other words, it can be expressed in the function between the frequency of accidents and the consequence of accidents. The accident frequency is expressed as the frequency of the number of annual accidents (Fr/Year) and the consequence is represented by the number of fatalities. Therefore, it is impossible to weigh the frequency of accident (F) against consequence (N) and that makes it necessary to determine the significance of an event on an individual basis.

$$\text{“Risk} = F(\text{Frequency} \times \text{Consequence})\text{”}$$

3. The Process of Quantitative Risk Assessment

〈Figure 1〉 shows the process of Quantitative Risk Assessment:



[Figure 1 : The process of Quantitative Risk Assessment]

The details of each stage are as follows:

1) Hazard Identification

First, it is necessary to have a qualitative analysis to distinguish hazards to identify the actual risk of a target facility. Qualitative analyses include Check List, Preliminary Hazard Analysis (PHA), Hazard and Operability Study (HAZOP), Failure Mode Effect Analysis (FMEA), Failure Mode Effect Criticality Analysis (FMECA) and others and a key accident scenario obtained from analysis result will be used for frequency analysis and consequence analysis of the next accident.

2) Frequency Analysis

To analyze the frequency of accidents from the above hazard identification, there are several ways to analyze accident frequency: Fault Tree Analysis (FTA), Event Tree Analysis (ETA), Human Error Analysis (HEA) etc. In most case, these methods are used together to analyze accident frequency. As Quantitative Risk Assessment presupposes the presence of accidents, the reliability data of the min. risk unit should be selected by objectively explicable formula or methods. 〈Table 1〉 explains the meaning of frequency obtained from accident frequency analysis and the outcome is represented by annual accidents frequency (Fr/yr).

[Table 1 : Failure Probability]

Malfunction possibility	meaning obtained
$>10^{-3}$	frequently occurs
$10^{-3} - 10^{-5}$	sometimes occurs
$10^{-5} - 10^{-7}$	rarely occurs
$10^{-7} - 10^{-9}$	hardly occurs
$<10^{-9}$	no possibility for accident

(Source : British Civil Aviation Authority, CAA)

3) Consequence Analysis

Consequence analysis of accidents is to examine the influence of an accident scenario when it actually happens, or how and to what extent, the damage would reach. <Table 2> encapsulates how diverse is an accident's progress by facility and liquid characteristics. Most accidents affect human life with several factors such as overpressure, heat radiation, missile and toxic load leakage. We can get the number of fatalities by calculating these factors. As such, it can be said that the number of fatalities is related to the population density of residents around the facility.

[Table 2: Accident progress]

Initial Cause	Mid stage	Result
the leakage of combustibles through a crack in a tank or pipe	immediate ignition after leakage	Jet Fire, Pool Fire
	ignition after some time	Flash Fire, Pool Fire VCE(Vapour Cloud Explosion)
Jet Fire or Pool Fire	heating of nearby combustibles storage tank by fire	BLEVE
the leakage of toxic gas	the spread of toxic gas	toxic effect

4. Use of the Quantitative Risk Assessment

The result obtained from Quantitative Risk Assessment provides us with much information and various measures applicable to safety prevention activities.

- As it enables us to rank risks in different facilities, it is possible to compare risks of facility with facility, and plant with plant. Within a plant, it makes it possible to rank risks of different equipment and to designate the top priority to the high risk facility in terms of safety investment.
- It can be used as data to determine risk of a new facility. In other words, it suggests that even for the same facilities, the installation standards for risk prevention facility should vary according to the population density of the area.
- When a new facility is built around the hazard facility, it helps to determine whether

or not to allow the new facility in the area. As Quantitative Risk Assessment indicates the scope of danger for an accident, it can tell if a public facility such as a hospital or school is built in a location free from danger.

- As it is possible to calculate the scope of accident consequence and the time the consequence is delivered, it provides fundamental information to prepare an emergency measure plan such as the number of resident to evacuate and safe shelter area.

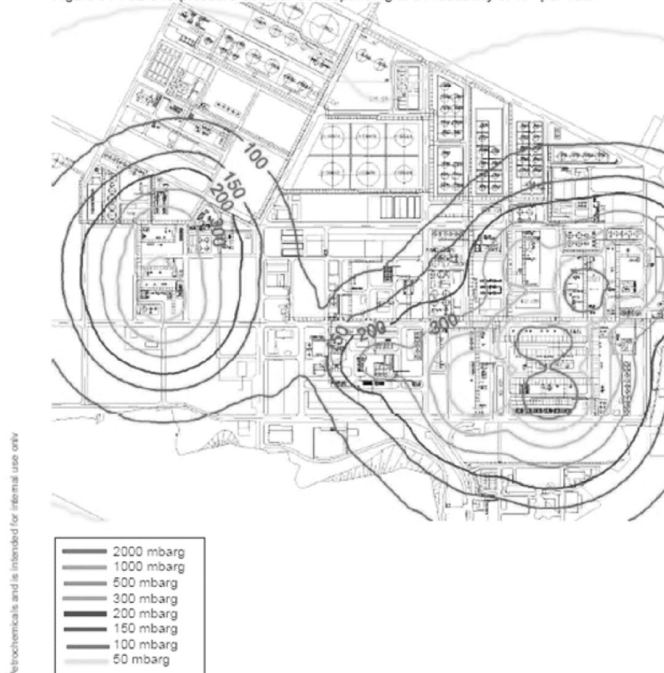
5. The Quantitative Risk Assessment of Samsung Total

1) QRA Study

- Collect data from 2,637 facilities in 13 plants from June 2005 to August 2006
- Set up 11,204 Possible Accident Scenario
- Set up 730,975 Vapor Cloud Explosion Models
- Set up 806,688 Hydrocarbon Diffusion Models
- Model Running Time: 120 hours

2) QRA Study Outcomes

Figure 3 : VCE Overpressure Contour Corresponding to a Probability of 10^{-4} per Year



〈Damage of Overpressure Explosion〉

Consequence	overpressure	
	atmospheric pressure	mbarg
100% death	13.6-17.0	17000
50% death	8.8-12.2	12200
Severe lung damage	5.4	5400
50% eardrum rupture pressure	1.02	1020
initial eardrum burst, severe building breakage	0.34	340
repairable building damage	0.10	100
glass window damage of a building	0.05	50
10% glass window breakage	0.02	20

QRA Study outcomes show that some buildings where drivers stay are potential overpressure explosion risks that would lead to collapse, so it would have a number of casualties in the worst case scenario. Therefore it is necessary to carry out reinforcement work for buildings to brace against an overpressure explosion or move it to a safer place so as to protect drivers from explosion risk.

In conclusion, Samsung Total is preparing to secure driver safety by moving the building under the threat of collapse rather than choosing a less safe measure or building reinforcement. At present, new building design is in progress and is planned to be completed in 2011 when regular repairs take place.

LG Chem's Strategy on Climate Change

Justin(In) Park, Team Leader
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The UN Framework Convention on Climate Change adopted at the Earth Summit in Rio de Janeiro in 1992 is one of numerous international environmental agreements. However, it is also a powerful economic agreement in which a country with technological capability of controlling and reducing greenhouse gas that causes global warming can sharpen its competitive edge in the global arena.

With the ratification of the Kyoto protocol in 2005, the rapidly spreading climate change convention poses an immense challenge to the chemical industry that has high energy dependency as it ultimately limits energy use. In the worst scenario, it might lead to a shut-down of production operation or put a stop to business expansion. Thus thorough preparation against climate change convention is recognized as one of the top mandates for the chemical industry.

The ratification of the Kyoto protocol has become an opportunity for companies to change the energy policy goal from reducing the amount of energy used to reducing greenhouse gas emissions. Centering on industrialized countries, some countries were under actual greenhouse gas emission regulations and should pursue non-profit generating energy-saving activities and greenhouse gas reduction activities. Greenhouse gas reduction is now one of the critical factors to be considered in corporate decision making.

Impact of Climate Change on the Industry

Regulations on greenhouse gas emission including CO₂, reinforced by the ratification of the Kyoto protocol are expected to impact a wide range of industrial activities.

First, strengthening of the non-tariff barriers to induce CO₂ reduction. It is expected that, in the initial stage, the minimum efficiency and/or target-efficiency system will be generalized to place a ban on equipment failing behind efficiency standards and to impose relevant fines. For the next stage, various systems including life cycle CO₂ from manufacturing to disposal, "Eco-labelling system" or "Carbon Footprint Label" etc. will be introduced while greenhouse gas emission quantity assessment in relation with Green Consumerism will be generalized.

Second, the existing energy tax system will be reinforced to skyrocket unit energy prices. In accordance with the power structure reform to reduce greenhouse gas reduction at the governmental level, it would bring about a phase-in increase in unit power prices for

industry and there would be a consideration of environmental tax or carbon tax, etc. on industrial energy source.

Third, when the regulation of total emission control on CO₂ takes effect, it would serve as a key hindrance to new expansion of plant and/or M&A so as not to meet the emission limits. In other words, the problem is that it would compel a company to voluntarily reduce greenhouse emissions within the permitted limit or, in some extreme case, it might lead to a complete shut-down of a production plant if emission credits cannot be bought in the market.

While Korea does not bear any immediate obligation for greenhouse gas reduction, the ratification of the Kyoto protocol for the industry would not be a faraway nuisance but an immediate trouble. While it is clear that regulations of greenhouse gas emissions in accordance with the climate change convention and the Kyoto protocol is a major threat to business growth, it would also present an unexpected opportunity to secure competitiveness. For instance, it is an opportunity to explore new business fields such as new renewable energy, relevant field consulting business, and greenhouse gas reduction, storage and transformation technologies.

In August 2008, the Korean government announced “Low Carbon and Green Growth” as a future national development vision. In August this year, the government announced three scenarios to establish the national greenhouse gas reduction target and is expected to carry out fully-fledged greenhouse gas reduction policies.

LG Chem's Strategy on Climate Change

In consideration of comprehensive domestic and overseas policies and the industry trends, LG Chem three practice strategy tasks including greenhouse gas management system building, CDM utilization and the research/adoption of an emission trading system, and the development of low energy consumption products and process and organized an enterprise-wide ‘TFT for responding to Climate Change Convention’ to tackle the issues of the convention.

The Climate Change Convention TFT was launched in November 2004 right before the ratification of the Kyoto protocol. Each secretary of TFT by different business sites continuously collects, stores and reports any information on greenhouse gas emission sources and emission activities of each process, develops greenhouse gas reduction business and calculates marginal costs. Such reduction projects include non-profitable greenhouse gas reduction projects. They also accumulate concrete data such as relevant technologies and economic feasibility analysis data so as to ensure the prompt implementation of a project in case that the project proves to be feasible. The headquarters group of TFT consists of four employees and carries out the role of the core of the response teams by conducting international trend analysis regarding climate

change cooperation, government–company cooperation reinforcement, data collection and training, the establishment of the mid–and long–term response strategies among others.

In the greenhouse gas inventory, there are greenhouse gas emission statistics not only for direct emission such as stationary sources, transportation means, process emission, fugitive emission, etc. but also for those generated by the purchase of energy sources such as power and steam. These statistical data analyze and apply internationally announced greenhouse gas inventory guidelines such as IPCC Guidelines and GHG Protocol by WRI to the applicable emissions, thereby building a highly reliable greenhouse gas inventory.

It is planned to establish the implementation strategies for greenhouse gas reduction project to brace itself against future greenhouse gas reduction obligations and the implementation process of the reduction activities with identifying a process with high greenhouse gas reduction potential by managing not just the total emission quantity LG Chem but also the amount of greenhouse gas emissions by each process through the greenhouse gas inventory. In addition, it will establish and put into practice broad response strategies by comparing the marginal costs of the internal greenhouse gas reduction project and the marginal costs of CDM project implementation and emission trading based on a full understanding of CDM and the emission trading system.

Environmentally friendly energy business such as lithium polymer batteries for electric vehicles

In January 2009, LG Chem was selected as an exclusive supplier of lithium polymer batteries for electric vehicles of US GM, the largest automobile company in the world. It is a harbinger of the upcoming era of electric automobiles based on Korean technology and seems to mark a critical milestone in which Korea can beat Japanese competitors and lead the world market in the field of lithium polymer batteries for electric vehicles.

Following the supplier appointment, LG Chem will complete the additional preparation for mass production for GM to its Ochang TechnoPark where its existing HEV battery production line is located by early 2010 and provide batteries to GM for six years until 2015.

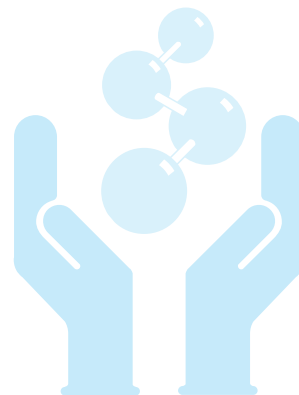
GM's Chevrolet Volt planned to be mass produced in late 2010 is the world's–first electric vehicle available to the general public and is the next–generation environmentally–friendly vehicle that fully relies on battery power, unlike existing hybrid cars that use a battery as a complementary addition to the motor.

The battery that LG Chem is to provide for GM is a lithium polymer battery 180cm in size, 180kg in weight and 16kWh power and marked by its light and compact structure

to construct battery structure by providing 50% higher output and energy than that of the Japanese nickel hydrogen batteries. Furthermore the form of the battery is not a 'can type' but a 'pouch type' so that it does not have an explosion risk and has longer battery life with its wider surface to facilitate heat emission.

LG Chem will focus its effort on HEV/EV battery business as its next generation new growth engine to place the future of the company and invest a total 1 trillion won by 2013 and ultimately position itself as a Global Top Maker in the HEV/EV battery field.

With this GM order, LG Chem will solidify its exceptional status in the field of HEV/EV batteries, which is one of the leading technologies of 'Next-generation Green Technology' proposed by the government and is expected to greatly contribute to the achievement of the new vision of Korea.



Safety Culture in Honam Petrochemical Corp. (Daesan Plant)

Young-Sam Kong, General Manager
Environment & Safety Team, HONAM PETROCHEMICAL CORP.

What is safety culture?

Safety Culture is defined by the means (way) employees think and behave in dangerous and emergency situations and determines the safety culture level of the relevant organization according to a certain level indicating how a series of actions, attitudes, values, objectives and instructions that characterize the organization are well shared within the organization. It is also generally acknowledged that safety culture cannot be enforced through an institution or be institutionalized, and is difficult to measure and even more difficult to bring about a change.

Cultivating good safety culture depends upon the leader's sense of responsibility and individual behaviors and attitude changes of employees.

In other words, it is necessary to note that safety culture is not something that can be given but one that is created and fostered by individuals in an organization.

How to create an advanced safety culture

According to Dupont, a company managing the global chemical industry for more than 200 years, "96% of all accidents are caused by unsafe behavior. While it is difficult to measure safety culture, it is still possible to measure human behavior and thus manageable". It accentuates the fact that safety culture begins with human behavior and attitude.

On safety, president Jeong, Bum-shick (current chairman of KRCC) of Honam Petrochemical Corp. (hereinafter "HPC") stressed, "Any manager who failed in environment, safety, and health is not entitled to a leadership position", "Safety should be kept by all employees and must be kept even when nobody is around". His assertion can be viewed to demonstrate management's determination to keep safety regarding who is to take responsibility for safety and how to carry out safety management.

Thus, the starting point of safety is the leader. A leader should show example, recognize the fact that employees are eventually precious assets of a company, and manage to maintain safe behavior and attitudes to prevent accidents from occurring.

Top management

Top management should strongly deliver what should be done and what should be avoided to keep all employees safe through speech, letters, and model behavior, which is the most effective means, so as to let them know that safety is the core value that comes first before all other tasks.

Leadership

They should directly accentuate that safety is important and let everyone participate in and ensure that work is safely done in the correct way from the very beginning.

System

It is necessary to establish safety vision and subsequently develop policies, principles and rules, and recognize safety performance is indeed management performance as safety is a core value of management. Also, it is required to implement a consistent safety system and set high performance standards for safety.

Action

In addition, it is necessary to make all employees focus on their interest in safety and always find out how well safety is understood, applied and implemented. Furthermore, it needs to establish higher goals while managers carry out safety audits and receive feedback so as to uncover places where employees engage in risky behavior.

Background of safety culture in HPC Daesan Plant

Safety culture of HPC Daesan Plant succeeded from Hyundai Petrochemical Co. As the safety management situation and statistical data on accidents from the establishment of Hyundai Petrochemical Co. in 1988 to its separate sales to LG and HPC showed, it is easy to note that Hyundai Petrochemical Co. annually had major safety accidents due to corporate management difficulty and the managers' lack of safety awareness and employees in particular were exposed to various dangers.

It seems that the causes for the accidents were inconsistent safety control and fluctuating safety management depending on management situation or the head of organization. In particular, it appears that the company put more time on cost-saving, productivity, sales and marketing rather than raising safety awareness in employees, thereby encouraging employees to perform risky behaviors at work and to ignore necessary procedures to meet urgent time schedules which finally culminated in major accidents.

According to the iceberg theory on safety management, an accident-oriented approach to safety management narrowly dealing with accidents emerged to the surface and the safety control focusing on the punishment of a person who caused an accident are likely to

lead to other accidents in-type as those involved in an accident would try to distort and conceal accidents when it happened again. Moreover, without a full understanding of the accurate cause of an accident and the establishment of measures to prevent the accident from recurring, it would not eliminate the unsafe behaviors of employees, which are the actual source of accidents underneath the surface, and leave room for repeating disaster. Before a large-scale building and expansion plan in 2007, HPC Daesan Plant where neglect of safety and indifference had given birth to yearly major accidents was driven by a sense of emergency and received a safety diagnosis and safety consulting from an external organization in early 2006.

Details of safety culture assessment:

- ① Safety awareness survey for site operators by different classes/teams;
- ② Process safety management check;
- ③ Site Operating procedure;
- ④ Whether or not safety policies and principles are kept;
- ⑤ Safety education and training;
- ⑥ The objectives and practices of safe activities.

Generalization of assessment result:

- ① While there were some regulations and rules, they are not actually kept in practice.
- ② Indifference and generous acceptance of unsafe behavior and safety practice violation
- ③ Safety was relevant only in words but actual priority was put on production, quality, and costs.
- ④ All safety tasks were regarded as exclusive work for the safety department
- ⑤ In-company safety was considered only

Details of implementation:

- ① It was identified that the problem of the company's safety management, pros and cons, the efficiency of safety activities, and which area required the most urgent improvement
- ② Opening work shops by different classes, education and training
- ③ making a road map who to do what by when for the most urgent parts.
- ④ The company established individual safety goals and carried out voluntary practice assessments twice a year and continued to raise the expected goals in terms of safety.

HPC safety management practice and change management

As a result of the assessment, the company was able to recognize its weakness through objective review and it formed a strong motivation as well as awareness for urgent need for change shared by all employees.

Why do we have to change?

To save life, to raise productivity, to move forward to an advanced safety culture, and to lower direct costs for injury, we have to decide where we should put our priority and make gradual and continuous efforts for safety.

The following are safety change management implemented in our company:

1. Understand the current situation

- Genuine safety culture change starts by admitting a sense of emergency.
- Top manager should deliver interest in safety and visible will to safety by sending safety messages to employees and guide them from their existing habitual patterns, customs and traditions to safe behaviors and attitudes.

2. Vision Establishment (The most safe environmentally–friendly company)

Turn obscure idea for change into a concrete one and management should publicly announce it.

- Development and modification of policies, principles, procedures in accordance with Vision
- Clearly state unambiguous regulations and rules to be understood by anyone.

3. Communication (up/down both sides) demand

Spread the message of change to the entire organization, make all employees agree on the need for change and lay a foundation to promote participation.

- The central safety committee to make a monthly report on safety performance of each team. Ensure proposed items on agenda and all planned and confirmed safety policies to be promptly executed.
- Operate five safety executive committees under the central safety committee.
- Prepare a manual integrating RC code, ISO, OHSAS 18001, and PSM and make a basis for assessment standard.

4. Quick win

By continuously achieving small but visible performances in a short time, it quickly builds confidence with changes.

- Focus on areas where it is easy to obtain a visible effect with easy and good outcomes.
- Give incentives to model behavior, successful system and organizations.

5. Changes in attitudes and behaviors

The ultimate goal of safety change management is to manage changes in attitudes and behaviors. Leader should carry out 1:1 coaching present an example with correct safety behavior for his subordinates to feel the significance of safety to induce change.

6. Audit / Feed back

Managers should continue to conduct safety observation and assessment to review their effect and to develop continued safety program so as to offer feedback to management to serve as the basis for all policy set up.

As such, these consecutive series of safety program processes set safety as the fundamental element in HPC Daesan Plant and started bringing about visible change in safety activities.

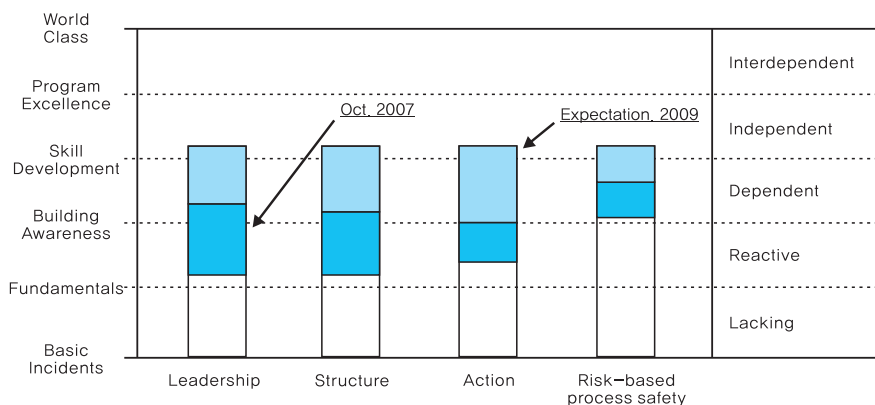
Visible Safety Outcome of HPC

□ Successful construction [2007~2008, 7]

[Unit : KT/yr]

Plant	2006 year product	2008 year product	description
NCC	650	1,000	revamp
BRU	220	320	revamp
BD	100	150	revamp
EG	250	640	New #2
SM	330	500	revamp
PP	250	500	New #2
LLDPE	160	290	revamp

□ Typical survey Safety culture results(Oct.2007)



Conclusion

There is no single workplace on earth that is completely free from unexpected accidents. In any workplace, the occurrence of accident and injury depends on whether people's behavior is safe or not.

To learn and achieve something, we have to repeatedly practice it until it becomes a part of our body and behavior. Likewise, safety should be managed not as a one-time event but as a continuously-kept consistent habit.

Lastly, the vision of HPC is to meet its 40 trillion sales target in 2018 and leap forward to be a leader of the Asian Chemical Industry. While there is room to be filled in terms of safety, we will continue to improve our safety practice and trust that for all our employees' safety will be not a high-priority issue but an indispensable element of our business.

Kumho Mitsui Chemicals won the President's Commendation

Kumho Mitsui Chemicals Co.,Ltd. has won the President's Commendation, which is the highest honor given to an organization for its contribution to preventing industrial disasters in the 42nd Congress on Safety and Health at Work organized by the Ministry of Labor on July 6, 2009.

Under the safety and health policy of Kumho Asiana Group, "Environmental Management, Safety and health culture that bring nature, people and enterprises together", Kumho Mitsui Chemicals Co.,Ltd. practices environmental safety management and all of its executives and employees strive in harmony to become a permanently disaster-free company through a series of initiatives such as nullification of various accidents such as employee safety accidents, fire risk diagnosis and the establishment of an advanced disaster preventive management system.

Through labor and management's mutual cooperation, it has incorporated safety and health into management courses and adopted a safety health management system and consequently the company obtained OHSAS 18001 certification, an international standard, in 2000 as well as domestic standards such as KOSHA 18001, and KGS 18001 certification. Based on these safety health management systems, it became a two-time winner of the grand prize in safety management from the Ministry of Labor in 1999 and 2008 and 10 times achieved disaster-free days (3,000 days) on February 2009.



Kumho Mitsui Chemicals Co.,Ltd. does not settle for its current attainment and secures safety in the fields of environment, safety and health by joint efforts from all executives and employees to improve the company's competitive edge, to foster conditions for labor and management harmony, and to prevent accidents in advance. Hence, they make continuous efforts in one mind to reduce economic costs from possible accidents and to enhance the corporate image.

Bayer Korea's image improvement and activities to recover credibility of the chemical industry (Corporate Social Responsibility)

UNEP TUNZA International Children and Youth Conference on the Environment sponsored by Bayer-Around 1,000 children and young people from 100 countries made the Conference vibrant and alive.

Launched in 1985, the TUNZA is a platform for children and young people throughout the world to learn the importance of environmental preservation. This year, about 1,000 children and young people from 100 countries were engaged in heated discussions under the theme of 'Climate Change: Our Challenge' and the outcome from this conference will be presented to the UN Climate Change Convention COP held this coming December.

Against the backdrop of the current trends in which environmental protection and sustainable development are heavily emphasized, the conference attracted key personnel including the Korean Prime Minister Han Seung-Soo, the Minister of Environment, Lee Man Eui and the Daejeon city Mayor, Ministers of Environment from various countries, UN officials, etc. In particular, UNEP Secretariat General, Achim Steiner directly led the global debates on August 20 and listened to stories and talks of children and young people from all over the world.

[Photo] Eco-Minds Forum held by Bayer and UNEP for youth in Asia-Pacific held in New Zealand in May. Two Korean students joined the forum.



Partnership between Bayer and UNEP

Bayer is fully committed to make young people actively participate in environmental protection. The partnership 'UN Environment Programme (UNEP)' under the umbrella of UN is a part of its endeavors and was entered to provide opportunities for children and youth to learn about the significance of the environment through various environmental programs. At present, in cooperation with the UN, Bayer is organizing various international conferences and regional environmental protection programs. The most representative programs among these events include 'TUNZA Conference', 'Bayer Young Environmental Envoy (BYEE)', World Environment Painting Competition for Children, and Eco-minds, etc.

If we look at the 2009 TUNZA conference:

- Reflect Children/Youth ideas presented in the conference regarding climate change to UN decision-making
- The outcome of the environmental conference will be presented to the 15th Climate Change COP to be held in Copenhagen this December as representative opinions of 3 billion children and young people in the world

- Green Conference
 - ① Distribute UNEP publications such as magazines and pamphlets in the form of efiles to be saved in USB to participants
 - ② Use environmentally-friendly vehicles such as hybrid cars
 - ③ Distribute environmentally-friendly souvenirs: Bags made of recycled paper and recycled banners, pencils made from newspapers, etc.
 - ④ Use environmentally-friendly ornaments and decorations in the exhibition hall
 - ⑤ Connect over 4,000 participants in 20 regions throughout the world through video conferences
- For the first time, this TUNZA was recorded as the largest environmental meeting as it co-invited both children and young people as it was customary for TUNZA to be held only for children in even-numbered years, and for youth in odd-numbered years

Ciba, to appoint new CEO

- Ciba Korea Ltd. New CEO, Shin, Woo-Sung
- Daihan Swiss Chemical Corporation. New CEO, Suh, Wan-Soo
- Doobon Fine Chemical Co.,Ltd. New CEO, Lee, Man-Woo

Ciba Korea Ltd. appointed Shin Woo-Sung who was the president of human resources in BASF Korea Co.,Ltd. as CEO in an extraordinary shareholders meeting held on Sept. 23, 2009. Daihan Swiss Chemical Corporation. appointed Suh, Wan-Soo Executive Director of the Speciality Business Dept. of BASF Company Ltd. as CEO.

At the same time, Doobon Fine Chemical Co.,Ltd., a joint-venture company between Ciba and German Baeloher will have a new CEO, Lee, Man-Woo from the Speciality Business Dept. of BASF Company Ltd. and new CEOs will hold concurrent positions for the time being.

As BASF completed its takeover of Ciba on April 2009, Ciba is now a member of the BASF group and the merging processes over the globe are under way. As a result, three CIBA subsidiaries - Ciba Korea Ltd., Daihan Swiss Chemical Corporation., Doobon Fine Chemical Co.,Ltd. are now integrated into the BASF group.

Introduction to New Members

Daesung Industrial Gases Co.,Ltd. (CEO: Kim, Hyeong-Tae)

Established in 1979, Daesung industrial Gases has a large scale ASU (Air Separation Unit) and ultra-purified special gas manufacturing facilities in Banwol, Yangsan, and Gumi and offers a range of products including general gases such as oxygen, nitrogen, argon

and precisely mixed gas.

Deokyang Energen Corporation. (CEO: Lee, Duk-Woo, Lee, Chi-Yoon)

Since its foundation in 1961, Deokyang Energen Corporation has produced industrial gases for about 41 years and constructed an industrial gas production plant in Seosan, Chungnam to quickly provide high quality gases.

Sundo Chemical Co.,Ltd. (CEO: Kim, Kyu-Ho)

Starting from high-pressure gas manufacturing and sales in 1996, Sundo Chemical has been manufacturing and selling carbonic acid gas and dry ices. It has its production plants in Daesan in Chungchungnamdo to quickly and safely provide high-quality carbonic acid gas and dry ice.

SPG Chemical Co.,Ltd. (CEO: Lee, Sung-Jae)

Since its establishment in 1975 as a company specializing in gas, SPG Chemical has offered industrial gases such as hydrogen, nitrogen and argon as well as alternative industrial fuels. In addition, with the business diversification efforts, the company extends its business area to nitrogen PURGE, gas facility engineering with a view to becoming a total gas company.

Chang shin Chemical Co.,Ltd. (CEO: Bae, Sang-Do)

Established in 1989, Changsin Chemical is a rising leader in the field of carbonic acid as it has obtained a plant to produce 240 tons of carbonic acid per day by receiving raw carbonic acid from Honam Petrochemical (previously Lotte Daesan Oil and Chemicals) after impurities removal and purification processes.

TaeKyung Chemical Co.,Ltd. (CEO: Ko, Yun-Sok)

Since establishment in 1970, TaeKyung Chemical Co.,Ltd. has purified and liquefied carbon oxide, an inevitable byproduct of the fertilizer production process and naphtha cracking plants to produce and offer industrialized liquid carbonic acid and dry ice.

Hansu Ltd. (CEO: Kang, Ki-Chul)

Launched as a joint-venture company with Kurita Water Industries Co., Ltd. in Japan in 1974, it has provided products for water-related damage prevention and efficient wastewater treatment to more than 1,000 industrial sites over the past three decades through the development, manufacturing and provision of various water-treatment and environmental products.

'Come! Fun World of Chemistry' Participating Teachers to visit Petrochemical plants

KRCC invited teachers who had joined 'Come! Fun World of Chemistry' to Yeosu Plants of Honam Petrochemical Corp. with a view to uplift the image of petrochemical industry by delivering correct information on the chemical industry to current elementary, middle and high school teachers on Monday Feb. 23, 2009. About 85 teachers who participated in 'Come! Fun World of Chemistry' in Busan, Seosan, Yeosu and Ulsan joined the event. After they were introduced at Yeosu Petrochemical Complex and visited Petrochemical plants, there was event report for 'Come! Fun World of Chemistry' and a program development fund delivery ceremony.



KRCC Homepage (www.krcc.or.kr) Renewal

KRCC renewed its website on Monday July 6, 2009 to introduce Responsible Care to members and the general public; diversify the information on offer; reinforce the function of 'Come! Fun World of Chemistry' homepage; and develop contents for participating children. This will help lay a foundation to promoting RC and the chemical industry.

The 1st General Affairs Committee in 2009

KRCC held the 1st General Affairs Committee at the conference room of KRCC with Chair of General Affairs, Kim, Ju-Hyeon and four members on Friday July 24, 2009. The meeting reviewed 'Come! Fun World of Chemistry (draft)' plan and '10-year anniversary ceremony event for KRCC (draft)'. In addition, there was a report on new memberships and RC-related international meetings (RCLG, APRCC), and main events for the second half of the year.



'Come! Fun World of Chemistry'

KRCC provides 5th graders in elementary schools with easy and fun chemistry experience opportunities through chemistry 'experience activities' and 'playground' of daily science programs and held '2009 Come! Fun World of Chemistry' to build a network where the local community and the chemical industry join together.

- Host: KRCC
- Organizers: Teacher for Exiting Science (Chairperson: Jeon, Seok-Cheon, Teacher in Soogmun High School), Amenity Science Research Group (Chairperson: Kim, Ok-Ja, Teacher in Sajik High School), Ulsan Science Research Group (Chairperson: Jeong, Heok, Teacher in Seonam elementary school), Chemistry Lover Group - Whasamo (Chairperson: Go, Moon-Seok, Teacher in Gwangyang Middle School).
- Sponsors: Ministry of Knowledge Economy, Busan Metropolitan City Office of Education, Ulsan City Office of Education, Yeosu City Office of Education in Chollanamdo, Seosan City Office of Education in Chungcheongnamdo, Korea Petrochemical Industry Association, and 30 member companies including Honam Petrochemical, Kumho Mitsui Chemicals, Korea Kumho Petrochemicals, Kumho Polychem, Kumho P&B Chemicals, Namhae Chemical, Daelim Industrial, Korea Petrochemical Industry, Tongsoh Petrochemical, Dongwoo Fine-Chem, Bayer Korea, Samnam Petrochemical, Samsung Total Petrochemicals, Aekyung Petrochemical, SK Energy, SKC, Exxon Mobil Chemical Korea, LG MMA, LG Chem, Yeochon NCC, Isu Chemical, Jeil Industries, CAPRO, KPX Chemical, KP Chemical, Kolon Industries, Dow Chemical Korea, BASF Korea, Korea Alcohol Industrial, and Hanwha Chemical, etc.
- Seosan Event
 - Date : Saturday, August 22, 2009
 - Venue : Seosan Farmers and Fisheries Cultural Center
 - Participants : About 270 students in their 5th grade from 24 elementary schools in Seosan
 - Program : 5 experience activities, 2 playgrounds, image data watching, etc.
 - For this year's event, all participating students received hand-disinfection and body temperature check-ups (37.5 as standard) before entering the venue to prevent the spread of Influenza A H1N1.



- 'Come! Fun World of Chemistry' Yeosu (Sep. 26), Ulsan (Oct. 10), Busan (Oct. 24) postponed

Due to a review of the event schedule considering the spread of Influenza A H1N1, KRCC held an 'Emergency Meeting for Come! Fun World of Chemistry Event' with the participation of eight people from the Secretariat, General Affairs Committee, the representatives of Organizing Teacher Association on Saturday September 12, 2009. In the meeting, it was determined to hold the event early next year in consultation with regional teacher organizations for a detailed schedule as it was necessary to consider the spread of Influenza A, possible infection through the event, and event restriction and cancellations policy by regional education bodies.



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- ◆ 한국정밀화학산업진흥회 Korea Specialty Chemical Industry Association
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