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The 29th JCCP International Symposium

(Preliminary Report)

Sustainable Development of Oil Downstream Industry —For Energy Supply Security—

The 29th JCCP International Symposium was held on January 26 and 27, 2011 at Hotel Okura Tokyo under the auspices of the Ministry of Economy, Trade and Industry (METI). Some 400 visitors from METI, oil-producing countries, foreign embassies in Japan, government offices, and domestic firms and organizations attended the event. A preliminary report is provided below, to be followed by details of the panelists' presentations in the next issue of *JCCP NEWS*.

1. First Day (January 26): Opening Ceremony

A ceremony marked the opening of the symposium at 2:00 p.m. on January 26. Mr. Yaichi Kimura, President of JCCP, gave an opening address, and Mr. Hisayoshi Ando, Director-General of the Natural Resources and Fuel Department, METI, delivered words of greeting as the guest of honor. These were followed by keynote speeches by H.E. Mr. Arne Walther, Ambassador, Royal Norwegian Embassy in Japan, and H.E. Mr. Ahmed A.A. Al-Shamma, Deputy Minister for Refining and Gas Processing, Ministry of Oil–Iraq.

In his speech, Mr. Yaichi Kimura noted that the world population is continuing to grow, and many more people will be born into this world in the future, so that petroleum will become even more important as a resource that supports human activities. He also said that petroleum could bring diverse opportunities that other resources cannot, but since it is itself a limited resource, people who work in the oil downstream sector must make an effort to develop technologies for even more advanced utilization of petroleum and strive to create a future where the next generation can build affluent lifestyles. Mr. Kimura then explained the theme of this year's symposium, emphasizing that ongoing efforts to address new technology challenges and develop leaders who can initiate changes in the future are the two most important responsibilities of managers in the oil downstream sector.

Representing the Japanese government, Mr. Hisayoshi Ando from METI began his speech by thanking the oil-producing countries for maintaining friendly relations with Japan over many years and contributing to oil security in Japan. He then mentioned that the global oil situation is rapidly changing, and that we must now focus on responding promptly and properly to the slowdown of economic activities, the global warming

The guest of honor, chairpersons, and speakers of the symposium, and Mr. Yaichi Kimura, President of JCCP (center)

issue, and changes in the demand-supply structure. Given this situation, Mr. Ando said that this international symposium is an ideal forum for exchanging views among oil-producing and oil-consuming countries, cultivating mutual understanding, and deepening relationships, and expressed his hopes that it would contribute to stabilizing global oil supply.

The opening ceremony also featured special lectures by a number of authorities in the global oil industry. They included Dr. Fereidun Fesharaki, Chairman, FACTS Global Energy Inc.; Mr. Abdulaziz Alattar, Head of Houston Office, Kuwait Petroleum Corporation; Ms. Huda M. Al-Ghoson, General Manager, Training and Development, Saudi Aramco; and Mr. Masakazu Toyoda, Chairman and CEO, The Institute of Energy Economics, Japan.

2. Second Day (January 27): Discussion Sessions

The second day featured two discussion sessions: Session 1 in the morning, chaired by Mr. Misao Hamamoto (Executive Officer, Manufacturing Division, Showa Shell Sekiyu K.K.); and Session 2 in the afternoon, chaired by Mr. Shogo Shibuya (Managing Executive Officer, Technology & Engineering, Chiyoda Corporation). In Session 1, panelists from Mexico, Malaysia, Nigeria, Kuwait, and Japan discussed "leadership development," and introduced their country's initiatives in that area. In Session 2, panelists from Vietnam, Saudi Arabia, and Japan discussed "technical development," also in reference to challenges being addressed in their countries.

As chairperson of Session 1, Mr. Misao Hamamoto summarized Session 1 discussions as follows: The oil downstream sector in all countries is facing severe international competition. Unless efforts are made to innovate technology and management toward creating competitive companies, the oil downstream sector cannot fulfill its social responsibility of providing stable supplies of oil. The key to building a strong company lies in human resources and their development. In other words, companies can grow only by developing their human resources.

Mr. Shogo Shibuya, chairperson of Session 2, summarized the discussions of the session as follows: Oil-producing countries are actively engaging in heavy oil cracking processes to transform heavy oil into petrochemical materials. Active efforts are also being made to promote biofuels. Furthermore, oil-producing countries and Japan are striving to innovate oil refining and petrochemical technologies so that humanity may continue to enjoy the benefits of the limited resources as long as possible. Although they may have different standpoints, oil-producing and oil-consuming countries share a common commitment to utilize oil and natural gas in even more advanced and effective ways, and should therefore mutually share their experience and technologies toward reforming the oil downstream sector.

Scene from the symposium

At the end of the two days of discussions, Mr. Masataka Sase, Executive Director of JCCP, took the podium for a closing speech. He said that the structure of the oil industry itself is undergoing a major change and is calling for a need to develop leaders to promote this change, and given this situation, we need to develop outstanding leaders by drawing out their fullest potentials and usher in a new era for the oil industry.

Based on lectures and presentations by people at the front line of technical innovation and human resource development in oil-producing countries and Japan, the symposium provided a valuable opportunity for active exchanges of views among all panelists and participants. JCCP will continue to offer such forums for interactions between oil-producing countries and Japan, to further promote mutual understanding among all parties in the oil industry.

<by Hisayoshi Tanda, Administration Dept.>

** The presentation materials from the 29th JCCP International Symposium are available on our website (http://www.jccp.or.jp).*

Joint Press Conference Held with Iraqi Deputy Minister for Refining and Gas Processing

JCCP invited H.E. Mr. Ahmed A.A. Al-Shamma, Deputy Minister for Refining and Gas Processing, Ministry of Oil–Iraq, to give a keynote speech at the 29th International Symposium. Being a central figure in the Iraqi Ministry of Oil, Mr. Al-Shamma received so many interview requests from news outlets that a press conference was scheduled, to be accompanied by H.E. Mr. Lukman Faily, Ambassador of the Republic of Iraq, and Mr. Masataka Sase, Executive Director of JCCP.

The joint conference took place on January 25, 2011, for one hour from 2:00 to 3:00 p.m., in the Clifford Room at Hotel Okura Tokyo, with the attendance of around 20 reporters from various news media inside and outside of Japan. The reporters generally had questions about the potential of Japanese companies to participate in new projects in Iraq. Mr. Al-Shamma avoided making any predictive statement, saying instead that "all relevant matters shall be decided by the new cabinet," and that "nothing has yet been decided." However, he did say that he acknowledges Japanese companies for their high-quality technologies and performance capabilities.

Below is the opening statement given by Mr. Al-Shamma at the beginning of the joint press conference.

First of all, I am pleased to have this opportunity to talk with so many people from the media.

The relationship between Iraq and Japan goes way back to the 1960s, when Japan first provided its assistance in various infrastructure development projects in Iraq's oil, natural gas and power generation industries and other industries. Today, several tens of years after completion of these projects, the infrastructures are now undergoing a period of degradation that requires maintenance. We are hoping the Japanese companies that have cooperated in the initial projects will return to Iraq, this time to implement maintenance projects. Iraq has also implemented various reconstruction projects since 2003 with cooperation from Japan, and through these projects, the Iraqi Ministry of Oil has sought opportunities that could benefit both Iraq and Japan.

Japan has provided training programs in wide-ranging fields in response to our needs for human resource development, which surfaced as a prominent issue in our reconstruction efforts. These programs, made possible with the assistance of the Japanese government, companies, and organizations, have been largely instrumental in the development of human resources in Iraq.

H.E. Mr. Ahmed A.A. Al-Shamma, Deputy Minister for Refining and Gas Processing, Ministry of Oil–Iraq (center);
H.E. Mr. Lukman Faily, Ambassador of the Republic of Iraq (left);
Mr. Masataka Sase, Executive Director of JCCP (right)

Joint press conference

The Iraqi Ministry of Oil has also played a consistent and continuous role in discussions on the formulation of new projects with Japanese companies. For example, with yen loans from Japan we have so far implemented a project for restoration of a crude oil export facility in Basra, a project for rehabilitation of the Basra Refinery, and a project for rehabilitation of the Baiji Refinery.

At present, refineries in Iraq do not have the refining capacity needed to respond adequately to domestic demand for oil products. The supply shortage of oil products is becoming conspicuous, and is calling for continued imports to secure necessary supplies. However, with Japan's cooperation, we are hoping to increase our self-sufficiency of oil products and to acquire the latest technology and knowledge that would allow us to do so. To Iraq's oil industry, Japan's cooperation is indispensable to acquiring new technologies and enhancing technical performance.

It is also important for our two countries to promote cultural exchange. All staff members of the Ministry of Oil who have received training in Japan have returned to Iraq, impressed with the lifestyles and culture of the Japanese people. I think that knowing Japanese history and culture is helpful in deepening relations with Japan and strengthening the result of training. Therefore, in addition to technical exchanges in the oil industry, cultivating cultural exchanges and ties through cooperation between our two countries is extremely important and beneficial.

Lastly, as my closing words of appreciation to Japan, I would like to express my sincerest expectations for Japan's continued cooperation in deepening our mutual relationship. Thank you very much.

<by Hisayoshi Tanda, Administration Dept.>

The 19th Joint GCC-Japan Environment Symposium

—Environmental Challenges and Mitigation Approaches for Sustainable Development in the Oil and Gas Industry—

Commemorative photo taken at the opening ceremony

Background

The GCC-Japan Environment Symposium takes place annually as a forum for information exchange among environmental experts in the GCC countries and Japan, and was held for the 19th time this year.

This year's symposium was jointly organized with Sultan Qaboos University (SQU) in Oman, and was implemented over a three-day period from December 18 to 21, 2010 under the theme, "Environmental Challenges and Mitigation Approaches for Sustainable Development in the Oil and Gas Industry."

Overview

The symposium opened on December 19 with an opening ceremony attended by some 140 participants, including such key figures as H.E. Dr. Saud Al-Bemani, Vice Chancellor of SQU; Dr. Ali Al-Harthy, Dean, College of Engineering, SQU; Mr. Salim Bin Awadh Al-Rubki, Manager, Public Relations & External Communications, Oman Refineries and Petrochemicals Company (ORPC; special supporter of this year's symposium); Mr. Shinichi Yamanaka, Chargé d'Affaires ad interim (Counsellor), Embassy of Japan in Oman; and Dr. Norio Arihara, Professor of the Faculty of Science and Engineering, Waseda University (leader of the Japanese delegation). Dr. Rashid S. Al-Maamari, Director of the SQU Oil & Gas Research Center and chairperson of the Environment Symposium Organizing Committee, gave an opening address, followed by Mr. Yamanaka and Mr. Morihiro Yoshida, Managing Director of JCCP.

Dr. Al-Maamari thanked everyone for attending the symposium, and gave a brief introduction of SQU's relationship with JCCP. The first JCCP project that was implemented at SQU was in 1996, and the most recent was a project that ended in the establishment of a laboratory plant for the treatment of oilfield produced water at Petroleum Development Oman (PDO) last November. Through such projects, SQU has developed close ties with JCCP, PDO and other oil companies in Oman. Dr. Al-Maamari also noted that SQU has co-hosted this environment symposium with Japan twice. As co-organizer once again this year, he hoped the symposium

Scene from the symposium

Mr. Shinichi Yamanaka, Chargé d'Affaires ad interim (Counsellor), Embassy of Japan in Oman

Mr. Morihiro Yoshida, Managing Director of JCCP

would be a forum for meaningful discussions between Japan and the GCC countries as it has been before.

Mr. Yamanaka also mentioned the oilfield produced water treatment project as an example of the long-term technical cooperation between Japan and Oman. He then talked briefly about Japan's contribution to environmental issues and Japan-Arab cooperation in the energy and environment sectors, with references to the Nagoya Protocol, which was adopted by the Tenth Conference of the Parties (COP10) to the UN Convention on Biological Diversity held last year in Nagoya, and the Tunisia Declaration, issued by the Japan-Arab Economic Forum also held last year in Tunisia. Mr. Yamanaka closed his speech with words of expectation that all parties would take the occasion of this symposium to acquire Japan's outstanding oil refining technologies.

Mr. Yoshida, after giving a brief introduction of JCCP and an overview of JCCP technical cooperation projects and training programs, asserted that Japan's advanced environmental technologies would be effective in addressing environmental issues that are raising widespread concern in the GCC countries, and stressed the importance of this symposium.

After the opening ceremony, two speakers gave keynote speeches. From Japan, Prof. Arihara gave a speech on "Opportunities and Challenges in Low-Carbon Energy Developments and Global Warming Countermeasures." On the Omani side, Dr. Yasmeen Al-Lawati, Water Management Team Leader at PDO, gave an opening speech in Session 1.

After these keynote speeches, 19 Japanese and GCC experts gave presentations in five separate sessions, as shown below.

December 19

Session 1: Environmental Issues in the Oil and Gas Industry
Session 2: Alternative Energy
Session 3: Oily Water Treatment

December 20

Session 4: Wastewater and Desalination
Session 5: Environmental Management in Selected Industries

In each session, presentations by GCC speakers particularly focused on topics relating to "water" and "the environment." This is from the fact that the symposium was originally launched as a greening seminar, and indicated the GCC countries' strong continuing interest and concern in the environment and water resources.

A closing ceremony was held after completion of the last session on the 20th. Following a summary of presentations by Mr. Al-Maamari, Dr. Mustaque Ahmed, Ph.D., Director, Center for Environmental Studies and Research (CESAR) gave three recommendations from the general, long-term and short-term points of view. Mr. Koichi Io, Deputy General Manager of the JCCP Technical Cooperation Dept., thanked all symposium participants, SQU and ORPC for their cooperation in the successful implementation of the symposium.

Dr. Norio Arihara, leader of the JCCP delegation (Waseda University)

A participant from a GCC country delivering a presentation

On the 21st, we visited ORPC's Mina Al-Fahal Refinery. After receiving a brief explanation of the refinery, we toured the refinery and observed the refinery's strong commitment to environmental conservation.

Summary

Active discussions took place in all sessions of the symposium, with experts from the GCC countries showing strong interest in the presentations on Japan's advanced environmental technologies.

We hope that this environment symposium has served to deepen relationships between oil-related organizations and companies in the GCC region and JCCP. We are also hopeful that coverage of the symposium in local newspapers and on SQU's official website has contributed to increasing public recognition of JCCP in the GCC countries.

<by Makoto Nakamura, Technical Cooperation Dept.>

FY2010 Joint GCC-Japan Environment Symposium

Opening Ceremony				
	Country	Organization	Name	Presentation Title
Keynote speech	Japan	Faculty of Science & Engineering, Waseda University	Professor Norio Arihara (JCCP Delegation Leader)	Opportunities and Challenges in Low-carbon Energy Developments and Global Warming Countermeasures
Session 1: Environmental Issues in the Oil and Gas Industry				
Chairperson				
Chairperson	Oman	Sultan Qaboos University	Dr. Ahmed Al-Futaisi	
Speakers				
Keynote Speech	Oman	Petroleum Development Oman	Dr. Yasmeen Al-Lawati	Sustainable Development Aspirations and Challenges for an Oil and Gas Operating Company
1	Qatar	Qatar Petroleum	Speaker: Dr. Azhari F.M. Ahmed Co-author: Dr. Ali Hamad Al-Mulla	Mitigating Anthropogenic Air Emissions in Qatar: Sustainable Development Opportunities for the Oil and Gas Industry
2	Japan	Idemitsu Kosan Co., Ltd.	Mr. Naoki Takakura	Environmental & Energy Policy in Japan and Efforts Made by Idemitsu
3	Oman	Oman Refineries and Petrochemicals Company	Mr. Salim Ali Al-Harthy	Cleaner Production in Oman Refineries and Petrochemicals Company LLC
Session 2: Alternative Energy				
Chairperson				
Chairperson	Japan	Faculty of Science & Engineering, Waseda University	Professor Norio Arihara	
Speakers				
1	Oman	Sultan Qaboos University	Dr. Ahmed Al-Busaidi	Jatropha: A Bio-fuel Crop for Oman
2	Japan	Cosmo Oil Co., Ltd.	Mr. Hiroyuki Wada	Challenge to the Development of New Type of Solar Concentration System in Abu Dhabi
3	Japan	JX Nippon Oil & Energy Corporation	Mr. Jun Uehara	Toward New Energy at JX Nippon Oil & Energy
4	Japan	JGC Corporation	Mr. Yuji Saito	Solar Powered Desalination Using Thermoelectric Power Generation

Session 3: Oily Water Treatment				
Chairperson				
Chairperson	Oman	Sultan Qaboos University	Dr. Salim Ali Al-Rawahi	
Speakers				
1	Japan	Shimizu Corporation	Dr. Kazuo Okamura	Treatment & Utilization of the Oilfield Produced Water in Oman
2	Oman	Sultan Qaboos University	Dr. Mahad S. Baawain	Feasibility Study to Upgrade Effluent Water Treatment Facility and Water Disposal System at Marine Outfall
3	Oman	Sultan Qaboos University	Dr. Anton Purnama	Design Recommendations for a Submerged Marine Outfall using CORMIX Simulations
3	Nigeria	Ahmadu Bello University	Dr. Abdulazeez Yusuf Atta	Treatment of Phonelic Waste Water Using Microwave Enhanced Nickel/ Copper Oxides on Alumina Catalysts
Session 4: Wastewater and Desalination				
Chairperson				
Chairperson	UAE	United Arab Emirates University	Prof. Abdel-Mohsen Onsy Mohamed	
Speakers				
1	Kuwait	Kuwait Institute for Scientific Research	Dr. Essam E.F. El-Sayed	Zero Liquid Discharge Desalination for Treatment of Saline Water Waste Streams
2	Saudi Arabia	Saudi Aramco	Mr. Mohammad Abu Naiyan	High Efficiency Biological Nutrient Removal of the Modified Ludzack Ettinger (MLE) Process
3	Bahrain	University of Bahrain	Speaker: Dr. Mohammed Saleh Al-Ansari Co-author: Dr. Nader Al-Masri, Bahrain Centre for Studies & Research	Future Sustainable Desalination Technologies for the GCC
4	Australia	Curtin University	Dr. Hari B. Vuthaluru	Boron Pre-treatment for Seawater Desalination
Session 5: Environmental Management in Selected Industries				
Chairperson				
Chairperson	Oman	Sultan Qaboos University	Dr. Ahmed Sana	
Speakers				
1	Saudi Arabia	Saudi Aramco	Mr. Ali Hommod Al Shamrani	CO_2 Soil Gas Survey Method for Identification of Free Phase Hydrocarbons in Groundwater
2	Saudi Arabia	King Fahd University of Petroleum & Minerals	Dr. Bassam S. Tawabini	Environmental Management of Drilling Fluids Waste: An Overview
3	UAE	United Arab Emirates University	Prof. Abdel-Mohsen Onsy Mohamed	Durability of Cement Kiln Dust-based Sulfur Polymer Concrete
4	Oman	Sultan Qaboos University	Dr. Khalid Al-Rawahy	Transport Sector in Oman, Contribution to Greenhouse Gases Implication for the Future

** Presentation materials from each speaker are available on our website (http://www.jccp.or.jp).*

Iraqi Ambassador to Japan Visits JCCP

On December 15, 2010, H.E. Mr. Lukman Faily, Ambassador, and Mr. Obay N. Al-Taii, Second Secretary, of the Embassy of the Republic of Iraq, visited JCCP and spent close to an hour in pleasant conversation with JCCP officers and executive members and on a tour of the training facilities at JCCP Headquarters.

Ambassador Faily was recently appointed to the Iraqi Embassy in Tokyo in June 2010. He is a businessman who, after studying mathematics and computer science in university, worked for 20 years at a multinational IT company based in the United Kingdom, including several years as its executive officer. In his present post in Japan, Ambassador Faily actively visits Japanese government offices, companies, and educational institutions in an effort to strengthen relations between Iraq and Japan. He said he wanted to pay a visit to JCCP because, after reading *JCCP NEWS* and learning that JCCP and the Iraqi Ministry of Oil are jointly developing human resources and industrial technologies for Iraqi refineries, he wished to know more about JCCP activities and projects.

Having experienced prolonged war, Iraq has gone through extremely difficult times in its aftermath, but is now gradually regaining its stability. For the full recovery of its economy, however, the country must restore its domestic refineries and physical distribution networks and establish a framework for the stable supply of oil products to all corners of the country as quickly as possible. The country's refineries have suffered so much damage in the war that they cannot satisfy domestic demand alone, but must compensate for the lack of supplies by importing oil products. In the years ahead, Iraq must not only focus on restoring the country's three major refineries, but it must also direct its efforts to increasing gasoline production capacity by introducing heavy oil cracking units and to executing its plans to construct four large-scale refineries in response to increasing domestic demand.

Also due to the prolonged period of war, Iraq has lost opportunities to keep up with the waves of innovation in oil refining technologies. The country must therefore introduce the latest technologies to its refineries, and at the same time provide training in those technologies to both senior refinery staff and young engineers, with awareness of the impending generational change in refinery staff members. In December 2009, JCCP began accepting engineers from the Iraqi Ministry of Oil to regular courses and has implemented customized programs in Japan for groups of participants from Iraq. As part of the technical cooperation program, JCCP has also provided continuous technical cooperation for the improvement of asphalt quality and treatment of oilfield-associated water.

Ambassador Faily said he understands that JCCP has maintained good relations with Iraq's Ministry of Oil and wishes the relationship will continue to evolve, as Japan and Iraq are valued friends to each other. In fact, he said that many Japanese engineers resided in Iraq before the war to provide technical cooperation, and there was much that Iraq learned from these Japanese people who worked hard and valued personal ties. The Ambassador repeated his wish to deepen relationships with JCCP by sharing issues for reconstruction of the oil industry in Iraq, and stressed that the Iraqi embassy is willing to help JCCP in any way possible toward this end should JCCP so require.

After his visit to JCCP, Ambassador Faily displayed his support of JCCP activities by participating in three JCCP events: attending the press conference held by H.E. Mr. Ahmed A.A. Al-Shamma, Deputy Minister for Refining and Gas Processing, Ministry of Oil–Iraq (January 25); delivering a brief address at the JCCP International Symposium reception (January 26); and presiding over a completion ceremony for a JCCP customized program held in Japan for a group of Iraqi participants (February 4). Taking the opportunity of this article, we wish to once again thank the Ambassador for his generous cooperation.

<by Hisayoshi Tanda, Administration Dept.>

H.E. Mr. Lukman Faily, Ambassador of the Republic of Iraq (front row, left); Mr. Masataka Sase, Executive Director of JCCP (front row, right)

Executive Meeting
Visit to Mexico

With the aim to strengthen relations with oil-producing countries, Mr. Masataka Sase, Executive Director of JCCP, visited Mexico from October 25 to 30, 2010, and personally exchanged views and information with the management of PEMEX, a state-owned petroleum company and an important JCCP counterpart in Mexico, and with the Japanese Embassy in Mexico and the Mexico Office of the Japan External Trade Organization (JETRO).

1. Purpose of the Visit

Mr. Sase's recent visit to Mexico was the first visit to be made by an Executive Director of JCCP in five years, the last being in 2005. Meetings were arranged with top management members of PEMEX, because PEMEX is an important JCCP counterpart in Mexico. Since its establishment, JCCP has accepted more than 500 participants from PEMEX to its regular courses, although the number temporarily declined last year due to the H1N1 influenza epidemic. Moreover, as Japan has particularly deep ties with Mexico aside from the Middle East countries, JCCP wishes to continue strengthening its relationship with the country. For these reasons, Mr. Sase visited Mexico, accompanied by S. Miyawaki, Deputy General Manager, Training Department, and M. Onai, Operations Department.

2. Meeting with Mr. Miguel Tame Dominguez, Director General of PEMEX

On October 26, Mr. Sase met with Mr. Miguel Tame Dominguez, Director General of PEMEX. Mr. Antonio Alvarez Moreno, Subdirector, Proteccion Ambiental, was also present at the meeting.

Mr. Sase firstly expressed his appreciation to PEMEX for its cooperation in maintaining good relations with JCCP over many years. He noted that JCCP will be celebrating its 30th anniversary next year, and that during this time, JCCP has received more than 500 participants from PEMEX and sent more than 100 experts to Mexico.

In response, Mr. Dominguez thanked JCCP for its many years of support and cooperation. He said that the Salamanca Safety Training Center, which was built with assistance from the Japanese government and JCCP, and the lectures on Japanese technology and safety measures given by Japanese experts under the JCCP Expert Services Program, have been extremely beneficial to PEMEX. He also said that the two organizations should further develop their cooperative relationship based on past accomplishments achieved through personnel and technical exchanges. Mr. Sase agreed, and the two leaders reconfirmed the importance of mutual cooperation in the future.

Additionally, Mr. Sase took the opportunity of the meeting to inform Mr. Dominguez that JCCP is seeking a speaker from PEMEX to give a presentation at the annual JCCP International Symposium, and requested PEMEX's cooperation. He also sounded out Mr. Dominguez's interest in coming to Japan and holding exchanges with relevant parties in the oil industry in Japan under the JCCP VIP Invitation Program, inasmuch as he is a strong supporter of Japan.

3. Meeting with Training and Human Resource Development Managers at PEMEX

After meeting with Mr. Dominguez, Mr. Sase met with members of PEMEX's training and human resource development departments. Attending the meeting were:

Mr. Miguel Tame Dominguez, Director General of PEMEX (second from left)

At PEMEX

Mr. Oscar H. Alva Rodas, Director of HR Process Improvement; Mr. Enrique Rodriguez, Director of Human Resources; Mr. Francisco J. Zurita Erana, Director of Human Resource Development; counterpart personnel of JCCP training; and JCCP graduates.

Mr. Rodriguez welcomed the JCCP delegation and introduced each of the members on the PEMEX side. Mr. Sase did the same for the JCCP side, and JCCP members gave a brief introduction of JCCP activities. We also explained that the fee scheme for accommodation and other expenses for JCCP regular courses will be changing beginning in January 2011, and gave a rundown of the requirements for participation in regular courses. Mr. Rodas then gave an overview of recent activities that have been initiated by PEMEX's personnel department.

PEMEX will be commencing the construction of a new refinery in 2011, and needs to secure sufficient human resources in the near future. However, with many employees slated to reach retirement age around that time, PEMEX not only needs to secure human resources, but it must also take measures to enhance employee quality, and has therefore formulated future policies for its training system. Mr. Sase has taken a look at these training policies, and expressed his wish to cooperate in any way possible. However, the first and foremost important task is to engage in mutual exchange of information between the two organizations.

4. Courtesy Call on JETRO Mexico

After visiting PEMEX, Mr. Sase paid a courtesy call on the JETRO Mexico, located in Mexico City. Mr. Takahiro Okazaki, General Director, and Mr. Takao Nakahata, Director, Promotion of Economic Exchange, provided valuable information about economic relations between Japan and Mexico, and about recent approaches to PEMEX made by Japanese companies. They explained that Japanese companies are facing a serious challenge against other foreign companies who are steadily increasing the momentum of their activities in Mexico.

Messrs. Okazaki and Nakahata also spoke about Mexico's macro economy in reference to the oil industry. They said that the Cantarell oilfield has long been regarded as Mexico's prize oil field, but its production has been declining of late to the point that the country is now focusing concentrated efforts on the development of new oil fields. At present, large expectations are placed on the Chicontepec oilfield and the offshore oil field discovered off the southwestern coast of the country. Additionally, as mentioned earlier, PEMEX is building a new refinery and modernizing its existing refineries, and is steadily moving forward with plans for the construction of secondary processing units and heavy oil cracking units, in particular, at all of its refineries. By acquiring detailed information on such current situations

Mr. Oscar H. Alva Rodas (second from front); Mr. Enrique Rodriguez (far back); Mr. Francisco J. Zurita Erana (front)

Mr. Takahiro Okazaki (right front), and Mr. Takao Nakahata (right back), at JETRO Mexico

in Mexico, the JCCP delegation gained a sense of the direction that JCCP training programs should take in the future in response to PEMEX's anticipated needs.

5. Courtesy Call on the Japanese Embassy in Mexico

On October 27, Mr. Sase paid a courtesy call on the Japanese Embassy in Mexico, and met with H.E. Mr. Masaaki Ono, Ambassador, and Mr. Kikuo Take, Secretary.

Mr. Sase firstly thanked the embassy for its continued support of JCCP's activities in Mexico, and explained that JCCP has enjoyed friendly relations with PEMEX since its establishment and has received more than 500 participants to date to its regular courses. Ambassador Ono said he is pleased that JCCP and PEMEX have cultivated a long cooperative relationship, and expressed his wish that the relationship would be maintained in the future by valuing the role of JCCP graduates.

The Ambassador also noted that PEMEX has been slow to open its crude oil and other underground resources to foreign capital due to constitutional restraints, but said Japan, as a whole, should exercise wisdom in seeking what it can do and provide the necessary technical cooperation.

6. Summary

2010 was a commemorative year for Mexico. It marked the 200th anniversary of its independence, the 100th anniversary of the Mexican Revolution, and the 400th year of Japan-Mexico relations. Main streets

H.E. Mr. Masaaki Ono, Ambassador to Mexico (second from right)

everywhere were filled with festive decorations in celebration of these anniversaries.

As Mexico is the central country in the Latin American region where important oil-producing countries are situated, Mr. Sase's visit to Mexico to hold meetings and exchanges of views with the top management of PEMEX was extremely meaningful to JCCP. Mr. Sase reaffirmed the need to further strengthen JCCP's ties with PEMEX through continuous exchanges of technology and information so that JCCP activities will benefit PEMEX and its major undertaking of constructing a new refinery and modernizing all of its existing refineries.

We would like to extend our deepest appreciation to all who received and supported the JCCP delegation during our visit to Mexico. Thank you very much.

<by Mieko Onai, Operations Dept.>

Basic Agreement on Building a Cooperative Relationship with OAPEC

On December 10, 2010, JCCP and the Organization of Arab Petroleum Exporting Countries (OAPEC) entered into a basic agreement to build a cooperative relationship based mainly on the joint organization of seminars and joint implementation of technical studies in the oil downstream sector.

1. Japan-Arab Economic Forum

Mr. Masataka Sase, Executive Director of JCCP, and Mr. Morihiro Yoshida, Managing Director of JCCP, attended the Second Japan-Arab Economic Forum held in Tunisia on December 11 and 12, 2010, and took the occasion to hold a conference with members from OAPEC and sign a Letter of Intent (LOI) regarding the agreement to build a cooperative relationship. JCCP and OAPEC signed the LOI on the day prior to the Forum in the presence of Mr. Akihiro Ohata, Japanese Minister of Economy, Trade and Industry, and Mr. Amre Moussa, Secretary General, the League of Arab States. Around ten members from the media were also present to cover and take pictures of the event. The signing of the LOI was announced to all participants of the Forum on the first day (December 11).

The building of a cooperative relationship between JCCP and OAPEC seemed to create a sense of expectation in the Forum. In fact, the Tunisia Declaration, which was adopted by the Forum, acknowledged the significant role of OAPEC in maintaining stable trade relations between Japan and the Arab countries in areas that include oil and natural gas, and Mr. Moussa specifically mentioned the two organizations' cooperative relationship in his closing speech.

2. Background to the Agreement

The idea for the cooperative relationship between JCCP and OAPEC began to take shape last May, when the OAPEC Secretariat sounded out the possibility of receiving cooperation from JCCP. The OAPEC Secretariat had been seeking to collaborate with extra-regional organizations in conducting studies and research and holding seminars on issues relating to the oil downstream sector and the oil industry in general, and approached JCCP as a potential candidate.

Signing of the LOI by
Mr. Abbas A. Naqi, Secretary General, OAPEC, and
Mr. Morihiro Yoshida, Managing Director of JCCP
(with Mr. Akihiro Ohata, Japanese Minister of Economy, Trade and Industry, and Mr. Amre Moussa, Secretary General, the League of Arab States, bearing witness)

After numerous working-level discussions between JCCP and the OAPEC Secretariat, Mr. Abbas A. Naqi, Secretary General, OAPEC, and Mr. Morihiro Yoshida of JCCP agreed to a framework for the cooperative relationship in a direct meeting, and came to sign the LOI two months later.

3. Overview of OAPEC

OAPEC was established in 1968. Headquartered in Kuwait, it currently operates in ten countries. In addition to the Council of Ministers that convenes twice a year, the organization carries out its functions and responsibilities through the General Secretariat, which is composed of four departments: (1) the Finance and Administrative Affairs Department; (2) the Information and Library Department; (3) the Economics Department; and (4) the Technical Affairs Department. It is the Technical Affairs Department that will be directly engaging in cooperation with JCCP.

Leaders of the Arab world assembled on stage

4. Anticipated Advantages of the Cooperation

JCCP has thus far engaged in implementing training programs, technical cooperation programs, international symposiums, VIP invitation programs, and research programs. Technical cooperation programs, in particular, have been implemented mainly with individual countries. However, by establishing a cooperative relationship with OAPEC, JCCP will be able to establish multi-tiered relationships with relevant oil-producing countries, since cooperation with the multilateral organization essentially means cooperation with its members, which consist of Arab petroleum exporting countries. Furthermore, as the OAPEC Secretariat has direct connections to petroleum ministers and comparable officers in all member countries, establishing a closer relationship with the secretariat as a consequence of the cooperative relationship would allow JCCP to also partake in the network of leading figures in the oil industry in OAPEC member countries. This vision moreover accords with JCCP's establishment objectives to strengthen friendly relations with governmental organizations of worldwide oil-producing countries and contribute to securing stable supplies of oil for Japan.

Mr. Abbas A. Naqi, Secretary General, OAPEC, and Mr. Masataka Sase, Executive Director of JCCP, announce the signing of the LOI to participants of the Second Japan-Arab Economic Forum

To OAPEC, JCCP represents Japan, a major oil-consuming country possessing superior oil downstream technologies, so creating ties with JCCP is expected to facilitate the flow of advanced technologies and information to the Arab countries, promote personal exchanges among experts, and contribute to increasing technical capabilities in member countries.

5. Future Plans

A conference of the OAPEC Council of Ministers held in Cairo on December 25, 2010 officially approved the initiative to build a cooperative relationship with JCCP, so hereafter the two organizations will be implementing specific activities, including joint technical seminars and joint technical surveys. We intend to pursue this cooperation with support from our member companies.

<by Hiroshi Iida, Technical Cooperation Dept.>

Committee for the Survey of Oil Downstream Industries in Oil-producing Countries: Invitation of the Iraqi Ministry of Oil

The JCCP Committee for the Survey of Oil Downstream Industries in Oil-producing Countries (chairperson: Mr. Koji Hotta, Advisor, Cosmo Research Institute) invited to Japan a delegation of four members affiliated with Iraq's Ministry of Oil, from November 29 to December 3, 2010, to exchange information and views on the status of refinery rehabilitation and construction projects in Iraq and on future cooperation issues between JCCP and the Ministry. The four members were as follows: Ms. Nidhal Ali Alnasser, Expert, Studies and Planning and Follow up Directorate; Mr. Saadoon Jasim Mohammed, Chief Engineer, North Refineries Company; Mr. Abdul Sadeq Mohammed Ali Hassan, Senior Chief Chemical Engineer, Midland Refineries Company; and Ms. Shaymaa Fadhil Majeed, Junior Process Engineer, Midland Refineries Company.

Each of the four members is currently in charge of refinery rehabilitation or the formulation of future refinery construction plans in the Ministry of Oil or a refinery governed by the Ministry.

1. Current State of Refineries in Iraq

(1) Crude oil and pipelines

Crude oil deposits in Iraq are distributed in the southern Basra area, the northern Kirkuk area, and the southeastern area near the Iranian border. Currently, crude oil from Basra and Kirkuk is being produced and exported as Basra Light Crude (API34) and Kirkuk Crude (API35). A pipeline stretches southward from

Present and Planned Refining Capacities in Iraq (unit: BPSD)

		Refinery	Present (nominal) capacity	Actual capacity at present	Planned future capacity	Year of completion
Existing refineries	Large-scale refineries	Baiji	310,000	217,000	310,000	
		Basra	140,000	109,000	210,000	2011
		Daura	140,000	79,000	210,000	
		Total	590,000	405,000	730,000	
	Small-scale refineries (skid-mounted)	Najaf	30,000		30,000	
		Samawa	30,000		30,000	
		Diwanya	20,000		20,000	
		Kirkuk	30,000		30,000	
		Kasak	10,000			
		Qayarah	20,000		20,000	
		Seeniyah	30,000		30,000	
		Haditha	16,000		16,000	
		Al-Nassiriya	30,000		30,000	
		Maissan	30,000		30,000	
		Total	246,000	107,000	236,000	
		Total of existing refineries	836,000	512,000	966,000	
New refineries	Large-scale refineries	Al-Nassiriya			300,000	2015
		Maissan			150,000	2015
		Kirkuk			150,000	2015
		Karbala			140,000	2014
		Total			740,000	

Basra to a terminal in Fao, from where crude oil is exported to the Asia-Pacific region. Another pipeline runs northward from Basra, through central Iraq, to Ceyhan in Turkey, from where crude oil is exported to Europe and the Americas.

(2) Refineries

Three large-scale refineries are located along the pipelines that traverse the country in the north-south direction. From the south, they are the Basra Refinery (140,000 b/d), the Daura Refinery (140,000 b/d), and the Baiji Refinery (310,000 b/d). As cities in Iraq are scattered like islands in the desert, the refineries supply oil products in response to demands in major cities in their vicinity, such as Basra, Baghdad, and Baiji. Other cities situated at farther distances from these refineries receive supplies of oil products from small-scale (10,000 b/d) skid-mounted refineries built in their environs. Their feedstock is mostly Basra Light Crude and Kirkuk Crude.

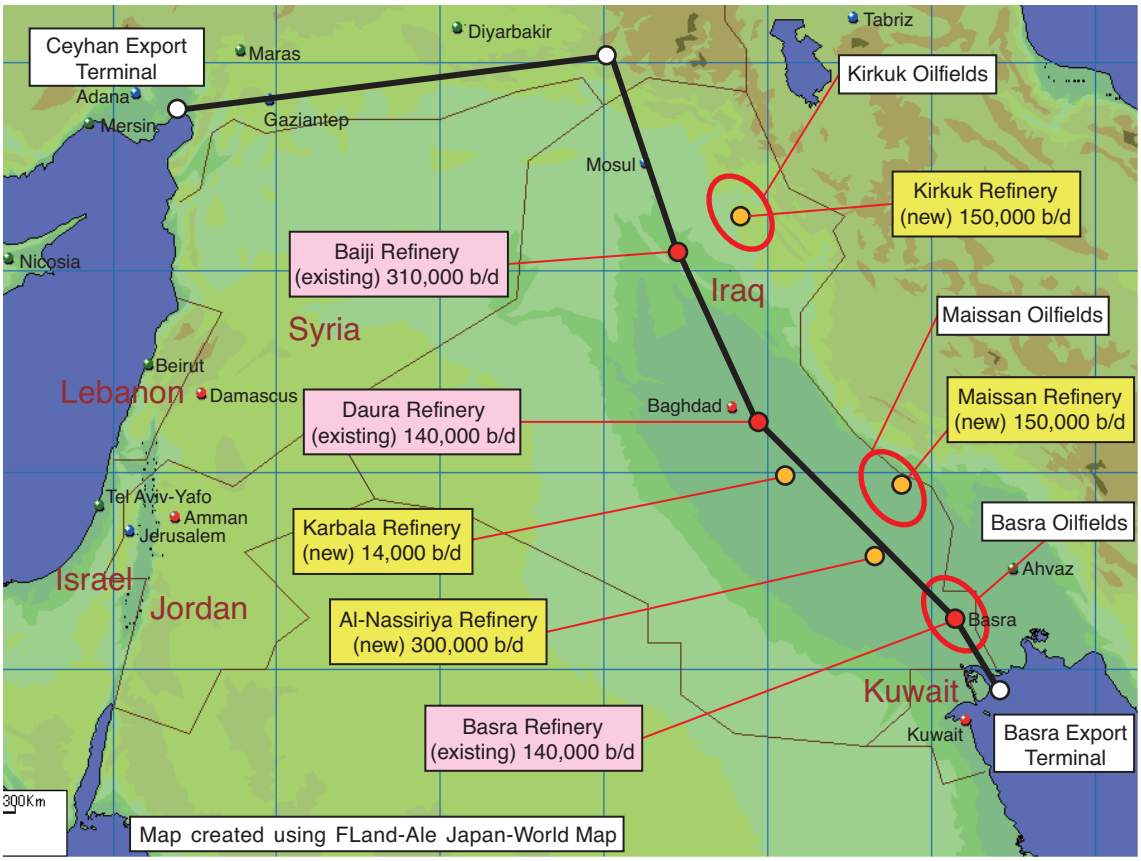
(3) Supply and demand for oil products

Refineries in Iraq have suffered serious damage from the series of wars and the economic sanctions imposed on the country during those wars, and have not yet been fully repaired. The country's nominal refining capacity is 830,000 b/d, but its actual refining capacity is estimated as 510,000 b/d, which causes a constant shortage of oil products.

However, with a gradual improvement in security, the country's economy has begun to show signs of recovery, and demand for oil products and gasoline, in particular, has begun to grow so much so that domestic refineries alone are unable to provide sufficient supplies. To compensate for the shortage, the country is relying on imports, but the cost of importing roughly 2 million ton/year of oil products (corresponding to approx. 1.5 billion USD) is weighing heavily on the national economy.

(4) Plan for increasing future refining capacity

The Iraqi Ministry of Oil is taking measures to strengthen the country's self-sufficiency of oil products. At existing refineries, it is increasing gasoline production capacity by introducing FCC/RFCC units and other cracking units. It is also planning to construct state-of-the-art refineries equipped with large-scale cracking units in the four major cities of Karbala (Karbala Refinery, 140,000 b/d), Al-Nassiriya (Al-Nassiriya Refinery, 300,000 b/d), Maissan (Maissan Refinery, 150,000 b/d),



Oil situation in Iraq

and Kirkuk (Kirkuk Refinery, 150,000 b/d). Once these four refineries are completed, the Ministry will have sufficient capacities to fulfill its domestic demands and intends to sequentially decommission the small-scale skid-mounted refineries.

Because Iraq has large amounts of heavy crude oil with an API gravity of 28 or lower, the Ministry of Oil plans to mainly export its lighter crude oils such as Basra Light Crude and Kirkuk Crude, and to process heavier crude oils at the new refineries. This means that a large burden will be placed on heavy oil cracking units, and that advanced technologies will be needed.

Iraq has lost opportunities to keep up with technical innovation on account of the prolonged wars. Therefore, it has urgent needs for advanced technologies and large amounts of funds to accomplish its goal of constructing refineries of considerable scale and to take them to the level of stable operations in a matter of several years. Based on this awareness, the Ministry of Oil is requesting technical cooperation from foreign countries in introducing oil upgrading units at its existing refineries and in designing, constructing, and operating its new refineries. It is also seeking foreign investment to raise construction funds.

2. Purpose of the Invitation

The purpose of the invitation was to exchange information with the Iraqi Ministry of Oil on its plans for rehabilitation of existing refineries and the installation of new facilities in the four refineries slated to be constructed, and to exchange views on Iraq's future needs for technical cooperation. The members were also invited to visit the refineries and research institutes of representative oil companies in Japan to gain exposure to Japan's heavy oil cracking technologies.

3. Agenda in Japan

November 29

JCCP Committee for the Survey of Oil Downstream Industries in Oil-producing Countries

On November 29, the Iraqi delegation attended a meeting of the Committee for the Survey of Oil Downstream Industries in Oil-producing Countries held in the 57th floor conference room at JCCP Headquarters, and exchanged information with the committee on the projects for rehabilitation of existing refineries and construction of new refineries.

At JCCP Headquarters (Nov. 29)

The committee consisted of Mr. Koji Hotta (Advisor, Cosmo Research Institute) as chairperson; Mr. Masaaki Itoi (Idemitsu Kosan Co., Ltd.); Mr. Masashi Onishi (Cosmo Research Institute); Mr. Takaaki Koide (JX Nippon Oil & Energy Corporation); and Mr. Shuichi Funatsu (JGC Corporation). Several members from the JCCP secretariat also attended the meeting, including H. Tanda, General Manager, Planning; M. Kitahara, Manager, Planning and Public Relations; and M. Maejima, Assistant Manager.

The main point of the discussion was as follows: The Ministry intends to export its lighter crude oils such as Basra Light Crude and Kirkuk Crude as a source of foreign currency revenue, and to process its heavier crude oils at the four refineries that it plans to construct soon. This requires the introduction of heavy oil upgrading units to the new refineries. To construct the new refineries equipped with state-of-the-art equipment, the Ministry is inviting foreign technologies and funds.

November 30

Visit to the Head Office of JGC Corporation (Yokohama City, Kanagawa)

On November 30, the delegation visited the head office of JGC Corporation in Yokohama City, Kanagawa. There they received an explanation of the world's upgrading processes in terms of their characteristics, such as catalytic processes and thermal cracking processes, from Mr. Shuichi Funatsu, Associate Executive Officer and Deputy General Manager of Engineering Division (and a member of the JCCP Committee for the Survey of Oil Downstream Industries in Oil-producing Countries), and process engineers, from the perspective of an engineering company.

At JGC Corporation (Nov. 30)

December 1

Visit to Idemitsu Kosan Co., Ltd.'s Chiba Refinery (Ichihara City, Chiba)

On December 1, the delegation members visited Idemitsu Kosan Co., Ltd.'s Chiba Refinery, where they were welcomed by Mr. Shigeru Tamura, Deputy General Manager of the Refinery, Mr. Masayuki Wakabayashi, General Manager of the Technology Training Center, and refinery staff members. After learning about the background to the introduction of heavy oil upgrading units at Idemitsu and receiving an overview of the units and the technical support framework of the refinery, the members observed the operations of an actual atmospheric residue desulphurization (ARDS) unit and FCC unit in the refinery, and in the afternoon toured the catalyst evaluation bench plants inside the Advanced Technologies Research Laboratories. Based on their broad knowledge of various heavy oil upgrading processes employed throughout the world, the members asked pointed questions about detailed aspects of upgrading operations.

At Idemitsu Kosan's Chiba Refinery (Dec. 1)

December 2

Visit to the Research and Development Center of Cosmo Oil Co., Ltd. (Satte City, Saitama)

On December 2, the members visited the Research and Development Center of Cosmo Oil Co., Ltd. in Satte City, Saitama, and received a warm welcome from Mr. Masaaki Kawatsuki, General Manager, and staff members. The R&D Center supports the operations of Cosmo Oil's refineries by evaluating and developing catalysts. The staff members gave a brief presentation on the characteristics of catalysts developed by the R&D Center, and introduced the catalyst pre-production and evaluation unit that they actually use.

The staff members lectured that technical support for catalysts, processes, and maintenance is important to ensuring continuous operations of large-scale refinery equipment such as FCC units and ARDS units, and emphasized the need for oil companies to develop a technical service framework.

At Cosmo Oil's Research and Development Center (Dec. 2)

December 3

Visit to the Negishi Refinery and Central Technical Research Laboratory of JX Nippon Oil & Energy Corporation (Yokohama City, Kanagawa)

On December 3, the delegation visited the Negishi Refinery of JX Nippon Oil & Energy Corporation in Yokohama City, Kanagawa in the morning, and the company's Central Technical Research Laboratory in the afternoon. At the refinery, they were warmly greeted by Mr. Hitoshi Nakamura, Deputy General Manager, Negishi Refinery. After receiving a brief presentation

on JX Nippon Oil & Energy Corporation's heavy oil upgrading technologies, the delegation members toured the refinery. At the research laboratory, they were welcomed by Mr. Chikanori Nakaoka, Group Manager, Catalysis R&D Group, Fuel Research Laboratory, Research & Development Division, and other staff members, who gave an overview of their catalyst development and evaluation activities and provided a tour of the catalyst evaluation bench plant and other research facilities.

At JX Nippon Oil & Energy Corporation's Negishi Refinery (Dec. 3)

4. Requests from the Iraqi Ministry of Oil

As a result of the Iraqi delegation's visit to Japan, the Iraqi Ministry of Oil made the following requests to JCCP. We will reply to the Ministry upon consultation with the Committee for the Survey of Oil Downstream Industries in Oil-producing Countries, and at the same time apply them to improving future JCCP training and technical cooperation programs.

- The Ministry wishes young staff members to acquire professional knowledge of heavy oil upgrading processes, because in order to design, construct, and operate refineries for heavy oil upgrading in Iraq, it is necessary to increase the number of people who possess deep understanding of upgrading technologies.
- The Ministry wishes to provide its operators technical training in refinery operations, so that they can become capable of operating state-of-the-art upgrading processes based on proper knowledge of the process principle, equipment structures, chemical engineering, and basic unit operations.
- Existing refineries in Iraq are equipped with lubricant production units, but these units need to be modernized. The Ministry thus seeks training to acquire the latest technologies in the production of lubricants.

The Iraqi delegation spent a short but busy week in Japan, actively relaying the refinery situation in Iraq to JCCP members while also absorbing Japan's refining technologies. We intend to review the information exchanged with the delegation, and encourage future cooperation with them.

Detailed results of the information exchange with the Iraqi Ministry of Oil will be provided in the FY2010 Report on the Survey of Oil Downstream Industries in Oil-producing Countries.

<by Hisayoshi Tanda, Administration Dept.>

Total Number of Training Participants Surpasses 20,000

We are proud to announce that JCCP has reached another milestone in its 29th year of establishment when it received the 20,000th participant to a regular course. Mr. Muhsen Abdullah Hussain, an engineer who works in the Technical Service Department at the Shuaiba Refinery of Kuwait National Petroleum Company (KNPC), participated in the course on "Quality Management of Refinery Products" (TR-19-10) which began on February 8, and became the commemorative 20,000th participant.

Since its establishment in November 1981, JCCP has continued to offer an average of 25 JCCP-initiated regular courses and member company courses every year, and has invited large numbers of participants from oil-producing countries in the effort to promote exchanges of oil downstream technologies between Japan and oil-producing countries. Many of the 20,000 participants who have taken part in a JCCP training program in the past have gone on to assume important posts in governmental institutions and oil companies in their respective countries and are taking active leadership roles in the oil downstream sector in oil-producing countries. These people are also playing important roles in supporting Japanese operations in oil-producing countries, based on their knowledge and understanding of Japan. Mr. Ahmad S. Al Jamez, Deputy Managing Director of the Shuaiba Refinery where Mr. Hussain works, is also a past participant of JCCP.

Mr. Hussain is a bearer of KNPC's future. We hope he will introduce what he has learned of Japanese technologies and culture through JCCP training to Kuwait and, with his advanced understanding of Japan, we hope he will eventually rise to the top management of the company.

Through the past 29 years, JCCP has been able to receive a steady stream of participants from oil-producing countries to its training programs owing to the oil-producing countries' kind understanding as well as expectations of JCCP, and also owing to the generous cooperation of JCCP members companies and cooperating companies in Japan. To respond to the expectations of oil-producing countries, we will continue implementing training programs that respond to their needs and will devote our further efforts to promoting personnel and technical exchanges with oil-producing countries.

Mr. Muhsen A. Hussain, the 20,000th participant

Message from Mr. Muhsen Abdullah Hussain (KNPC / Kuwait)

First, I would like to thank you for this honor of becoming the commemorative 20,000th participant. It fills me with pride and great pleasure to have been nominated and accepted to participate in the "Quality Management of Refinery Products" course organized by such an esteemed organization as Japan Cooperation Center, Petroleum (JCCP). The course provided intensive training about Japanese culture, work ethic, quality control standards, and the latest equipment in Japan, and has been even more delightful than I had expected.

I would like to take this opportunity to express my special thanks to Mr. Masataka Sase, Executive Director, and particularly to JCCP coordinators/lecturers Messrs. Yuasa and Takahashi for their consistent support in making this program a success. I also wish to extend my special thanks to the JCCP staff who have worked so hard to make sure our stay in Japan is as comfortable and educational as possible. Last, but not least, I wish to thank all my colleagues for demonstrating great teamwork, which made this experience both exciting and fulfilling.

New Regular Course on "Turnaround and Inspection"

The Middle East countries have long been working to increase equipment reliability in their refineries and to reduce conservation costs, and have recently turned to JCCP to provide training in the actual practices of planning and implementing turnaround maintenance in Japan's refineries.

In response to this request, a new course titled "Turnaround and Inspection" (IT-1-10) was designed and offered for the first time this fiscal year to middle-level mechanical engineers in departments in charge of turnaround maintenance and daily maintenance, who have five years or more experience working in a refinery, or who have equivalent or higher qualifications. The course ran for a net of ten days, from November 29 to December 10, 2010.

Participants of the course

1. Lectures and Offsite Training

Drastic changes that are recently occurring in external environment factors, such as the rise of crude oil prices and increased foreign exchange risks, and the declining domestic demand for oil are weighing heavily on oil companies in Japan. To increase their competitiveness, these companies are now placing management resources on measures for increasing the operating rates of existing facilities and improving their efficiency and productivity. Under this situation, turnaround maintenance, which is prescribed and obligated by law in Japan, is becoming an important management issue.

In keeping with the reality of the oil industry in Japan, the new course was designed to provide best practices in turnaround maintenance, including points for consideration, work process management, and risk management at the planning, implementation, and startup stages after turnaround maintenance, as well as training in the latest conservation technologies. Through these best practices and knowledge of technologies that help improve facility productivity and efficiency and ensure low-cost, high-quality maintenance management, the course aimed to enhance the management of maintenance plans that place importance on preventive maintenance, reliability, and equipment upgrading.

We created the course program around the following topics and issues, and selected appropriate companies and organizations to provide practical training.

(1) Lectures
1) Outline of Petroleum Industry in Japan
2) Planning and Execution Management of Turnaround Maintenance & Inspection in Japanese Refineries
3) Maintenance Technology and Human Resource Development of Contractor

(2) Practical training
1) Latest Maintenance Technologies and Responses to Maintenance Management Overseas
2) Overhaul Technologies for Boilers and Other Static Equipment
3) Introduction and the Latest in Non-destructive Inspection Technologies
4) Reliability Improvement and the Latest Technologies in Rotary Machinery and Pressure Vessels
5) Latest Maintenance Technologies of a Plant Maintenance Company
6) Promotional Framework and Case Examples of Maintenance Planning & Scheduling in the Refinery

2. Participants

A total of 15 people from ten countries mainly in the Middle East were selected to participate in the course, giving preference to those who engage in or have

relevance to turnaround maintenance work. Additionally, to provide a wide forum for mutually sharing knowledge and experience, participants were selected from various age groups—four were in their 20s, seven in their 30s, three in their 40s, and one in the 50s.

3. Results

3.1 Lectures at JCCP

The lecture on "Outline of Petroleum Industry in Japan" provided an overview of the situation surrounding the oil industry in Japan, and "Planning and Execution Management of Turnaround Maintenance & Inspection in Japanese Refineries" introduced general maintenance activities and their objectives and practices, and outlined the certification system that obligates periodical maintenance. The latter lecture also presented case examples of accidents that have occurred in petroleum complexes as a result of causes related to turnaround maintenance, introduced Total Productive Management (TPM) activities as an effective tool for maintenance, and explained the importance of voluntary efforts in daily maintenance activities.

The lecture on "Maintenance Technology and Human Resource Development of Contractor" was given by Mr. Inadome and Mr. Yoshimura from Sankyu Inc. They lectured on maintenance technologies and human resource development from the standpoint of a maintenance company. After explaining the company's human resource development system for maintenance managers in Japan and abroad, Mr. Yoshimura used case examples to discuss the company's role in improving the technical capabilities of maintenance staff. In particular, the case example he presented on a competition for welding engineers captured the strong attention of the participants, many of whom asked whether engineers from their countries could also participate in it.

By having spent almost a year discussing and preparing this lecture content, the lecture of Sankyu Inc. presented deep knowledge in an effective manner, and effectively promoted participants' understanding of the workings of a contractor.

3.2 Training at a Refinery and Factories

(1) JGC Corporation, Head Office:
"Latest Maintenance Technologies and Responses to Maintenance Management Overseas"

The staff of JGC Corporation first talked about the company's commitment to ensuring proper turnaround maintenance of refineries and facilities as a contractor, and presented an overview of turnaround maintenance activities. They then described the company's activities in the Operation & Maintenance (O&M) sector abroad, in terms of their distinct characteristics. The participants showed strong interest in the asset management inspection maintenance system which JGC is currently developing, and even expressed their wish to consider adopting the system at each company. A lecture also covered the company's support system for contemplating HSE risk management, plant life extension program, and an outline of its noise and vibration diagnosis system. As a whole, the training at JGC Corporation provided a general understanding of the attitude and efforts regarding turnaround maintenance by contractors.

(2) Mitsubishi Heavy Industries, Ltd., Yokohama Machinery Works Kanazawa Plant:
"Overhaul Technologies for Boilers and Other Static Equipment"

The staff of Yokohama Machinery Works Kanazawa Plant gave a lecture on typical boiler troubles that Mitsubishi Heavy Industries has experienced in the past and their countermeasures, using many examples and an easy-to-understand textbook. Actual samples on display in an exhibit room provided direct reference to example trouble cases, and brought beneficial effects to the training.

(3) Non-Destructive Inspection Co., Ltd., Head Office and Laboratory:
"Introduction and the Latest in Non-destructive Inspection Technologies"

Non-destructive inspection is considered the most important method of facility inspection and diagnosis, and is indispensable to the planning and implementation

Training at Non-Destructive Inspection Co., Ltd.

of turnaround maintenance. As the largest company of its kind in Japan, Non-Destructive Inspection Company plays a prominent role in various inspection technologies. For this new course, staff members of the company provided detailed and easy-to-understand explanations of the latest non-destructive inspection technologies, with a focus on methods for detecting welding defects and corrosion. Hands-on training was also provided using actual machines and samples simulating various situations, to demonstrate the high precision of these machines. Furthermore, an opportunity to observe the research facility where the latest technologies are being developed rounded out the well-organized program that was highly appreciated by all participants.

(4) Kobe Steel, Ltd., Takasago Works:
"Reliability Improvement and the Latest Technologies in Rotary Machinery and Pressure Vessels"

Lectures were given on the structures and applications of compressor types manufactured by Kobe Steel (reciprocal, screw, and centrifugal compressors), and elicited many questions from the participants, many of whom have strong interest in Kobe Steel compressors because they actually use them in their country. They especially seemed to appreciate the troubleshooting section that was included in their handout as extremely helpful, although it was not covered in detail in the lecture. The lecture on pressure vessels enhanced general understanding by using an introductory video that has just recently been produced, and also provided knowledge of key technical details in an easy-to-understand manner. In addition to the lectures, staff members of Takasago Works responded readily to each and every question the participants posed, even during the tour of the pressure vessel production site, and established good rapport with the participants.

(5) Shinko Plantech, Isogo Factory:
"Latest Maintenance Technologies of a Plant Maintenance Company"

From the standpoint of a maintenance company, the staff of Isogo Factory gave a detailed lecture on elemental technologies that are needed in each stage of turnaround maintenance. Beginning with an overview of the planning, implementation, and re-startup stages of turnaround maintenance, they then defined in detail the roles and responsibilities of the Japanese-owner side and the maintenance company. The content was presented in such a way that it allowed the participants to easily make comparisons with the situation in their own countries. The staff then discussed important maintenance work procedures by taking the flange as an example, and "visualized" the explanation by providing a demonstration of an actual flange-tightening task in the worksite. Following this, they led the participants to a laboratory where various troubles are analyzed using analysis equipment and machine property measuring instruments, and provided an overview of trouble cases relating to materials and welding and their analyses. Actual demonstrations, such as of SEM+EDS analysis, destruction surface monitoring, Charpy impact test, and weld bending test, helped facilitate understanding of the significance of maintenance technologies. Lastly, a brief explanation was given of the databank that is being created by the High Pressure Gas Safety Institute of Japan. All in all, the training at Isogo Factory was highly informative and well arranged, and was highly appreciated by the participants.

(6) Idemitsu Kosan Co., Ltd., Chiba Refinery:
"Promotional Framework and Case Examples of Maintenance Planning & Scheduling in the Refinery"

The staff of Chiba Refinery gave a lecture that detailed the organizational framework of the refinery and the role of each department in turnaround maintenance management, as well as clarified the relationship and role of contractors. They also gave an explanation of turnaround maintenance periods in relation to laws and regulations in Japan, and described step-by-step the process of turnaround maintenance using photographs. At the refinery worksite, the staff showed the participants the original copy of a P&I-based turnaround maintenance planning and implementation manual which the Operations Division took the initiative in promoting, and described the steps involved in the management of

At the Chiba Refinery of Idemitsu Kosan Co., Ltd.

turnaround maintenance activities, from the preparation stage to the implementation, completion inspection, and restart stages. The meticulous care and attention involved in turnaround maintenance at the refinery seemed to impress the participants. In particular, matters regarding production site confirmation, which have high relevance to the participants' own duties, elicited strong interest and questions, and sparked active discussions.

4. Participants' Evaluation of the Course

Upon completion of training at each of the above companies and facilities, participants were asked to fill in an evaluation form on the relevant program.

The overall evaluation of the course content and level was positive. To further improve the course, there were some suggestions to present a larger number of case examples, and to consider the involvement also of departments in charge of reliability.

Evaluations for course management were high. Most of the participants said the course was relevant to their own duties, and that it would benefit them after their return to their countries.

Feedback from the participants included the following points. We will consider them as reference for improving the course for next year.

- Some lecturers need to improve their English-speaking ability.
- The course should be extended by a few days in order to effectively cover all of the lectures that were actually given in the course.
- Contents regarding the scope and planning of turnaround maintenance could be enhanced.
- Please provide practical training at an actual site where turnaround maintenance is being performed, if possible.
- Please consider including a discussion session with departments in charge of reliability improvement.

5. Observations

This "Turnaround and Inspection" course was offered for the first time after a preparatory period of almost a year discussing and consulting with cooperating companies regarding the training content. To distinguish it from the existing "Maintenance Management" course and to avoid providing only a generalized knowledge of the subject matter, we encouraged the cooperating companies to focus solely on issues related to turnaround maintenance. Judging by the results, we believe we have achieved this goal.

The next time we offer this course, we will consider allotting an entire day to examining case studies. We will also consider inviting interested staff members from cooperating companies to attend the case study session so that effective discussions could be held on the spot. As a distinctive feature of an intensive course, we need to offer opportunities for deeper and more specialized discussions on specific topics than regular courses.

The lecturers of training at the refinery and factories are professionals who have been selected to represent the technical expertise of their respective companies, but to establish even better communication with participants, we might consider asking someone who both speaks English and has technical knowledge to sit in on the lectures or engaging the services of a language interpreter.

We have been able to finish the new course successfully owing to the strong support of cooperating companies. We were also blessed with outstanding participants from diverse countries, and enjoyed sharing and discussing various issues with them. We will lend an ear to their proposals for improving the course in the future, and will strive to develop the course into one that is even more beneficial to all JCCP participants.

<by Fumihiro Tone, Training Dept.>

CPO Seminar on "Refinery Offsite Operations" Held at PETROBRAS

1. Background

This seminar was implemented in response to a strong request made by a participant from Brazil's state-run oil company, PETROBRAS, who participated in a regular course in 2008. The request was for a seminar, to be held in Brazil, that would provide PETROBRAS employees an overview of recent developments and information relating to refinery offsite departments in Japanese oil companies.

2. Seminar Overview

A five-day seminar was organized to be held from August 30 to September 3, 2010, in a training room at PETROBRAS University, located in Rio de Janeiro. The team of lecturers included K. Kojima from JCCP (Training Dept.); and from outside companies, Mr. Yukinori Kawashima from Cosmo Oil Co., Ltd. (Head Office Technology Dept.), Mr. Tetsuo Nagayama from JX Nippon Oil & Energy Corporation (Head Office Overseas Operations Dept.), and Mr. Hisamichi Kobayashi from Idemitsu Kosan Co., Ltd. (Operations Section, Tokuyama Refinery). Lectures mainly covered the flow of oil products in the refinery and offsite operations in general, such as tank storage, inventory management, blending treatment, quality control, and delivery of oil products.

3. Details

On the first day, lectures were given on Japan's oil industry in general and the global energy situation. The first lecture mainly covered the importance of securing stable oil supplies to Japan and the unique characteristics of the oil industry in Japan, in reference to differences between Japan and Brazil, with Japan being an oil-consuming country with private oil companies, and Brazil being an oil-producing country with state-run oil company. The second lecture covered a number of issues of worldwide concern, including global warming, environmental issues, and the future outlook of primary energy demand.

On the second day, a lecture was given on general aspects of refinery offsite departments, with a focus on the organization and role of offsite departments, their relationship with the head office, and their position within the refinery. Questions from the participants centered on refinery organization and framework, emergency contact systems, employee training, and human resource development.

On the third day, a lecture was given on tank layout

Participants of the seminar

in the refinery and the maintenance and inspection of tanks and pipelines. In addition to providing a basic understanding of tank layout, the lecture also covered the principles of setting tank volumes for crude oil, semi-finished products, products, and of setting capacities at docks and tanker shipment terminals. Many of the questions from the participants were regarding quality maintenance and measures in Japan, particularly in relation to corrosion and leakage found during pipeline maintenance and inspection. The large differences in the environmental and geographical conditions of refineries between Brazil and Japan seemed to stimulate participants' interest in the quality management of products and the maintenance management of pipelines.

On the fourth day, a number of lectures were given on the efficiency and safety of product shipment; product blending and quality assurance; and strategies and the reality of stockpiling crude oil, semi-finished products, and products. These lectures highlighted TPM and other safety activities, environmental initiatives, and grievance resolution in the refinery. The participants' questions were strongly concentrated on TPM activities and employees' interactions with management in Japanese oil companies.

On the fifth day, a lecture was given on production plan optimization and loss management in offsite areas. The participants noted that PETROBRAS has established a department dedicated to optimization to actively explore actual optimization methods and practices, and will be directing further resources to optimization in the future.

4. Summary

The seminar enjoyed a large turnout, with some 40 participants from refineries throughout Brazil. Although it took several hours for many of the participants to reach the seminar venue, with the country being so incomparably larger than Japan, they were nonetheless more than willing to make the trip to acquire Japan's technologies and knowledge. In the final evaluation form, many participants indicated their wish to participate in a customized program in Japan (CPJ), so we hope to realize their wish in the near future and organize a program that could benefit a large number of participants.

Seminar scene

PETROBRAS is the largest comprehensive oil company in the southern hemisphere and one of the largest energy companies in the world, but in the downstream sector they are still in the developing stages. JCCP therefore wishes to provide ongoing cooperation through these seminars.

For three of the four Japanese lecturers, this was their first trip to Brazil. Despite some jet lag, we were able to complete the seminar successfully with the support and cooperation of the seminar staff members on the PETROBRAS side, we were able to complete the seminar successfully. For this we are truly grateful to PETROBRAS.

<by Kazuo Kojima, Training Dept.>

CPO Seminar on "Human Resource Development" Held at Saudi Aramco

A Customized Program-Overseas (CPO) on "Human Resource Development" was held from October 9 to 13, 2010, at the Yanbu Refinery in Saudi Arabia.

Participants of the seminar after the closing ceremony

1. Background

This seminar was realized in response to a request from a participant of a regular course on "Training Management" (TR-17-10) implemented in December 2009. The participant, a manager in charge of training in the Yanbu NGL Fractionation Department at Saudi Aramco, made the request after returning to Saudi Arabia and obtaining the approval of his company. JCCP obliged, and this became the first seminar on human resources to be held in Saudi Arabia.

2. Lecturers

Mr. Hiromasa Tanaka (Professor, Meisei University)
Mr. Hideki Otsuka (Human Affairs Dept., JGC Corp.)
Mr. Akio Hoshino (Training Dept., JCCP)

3. Seminar Overview

The seminar was held over a five-day period. Following an opening seminar, a lecture on "Japanese-style HRM and Corporate Training" was held on this day and half of the next, and provided an overview of HRM and HRD issues. The latter half of the second day was spent on a lecture titled "Kaizen General," which focused on "creating a Kaizen mind" as a perspective of training-related programs. The third and fourth days featured a seminar on training theories by Professor Tanaka, and the last day was devoted to an introduction of the personnel system employed by JGC Corporation and its corporate training activities. Finally, the seminar ended with a closing ceremony.

Opening speech by the director of the Yanbu NGL Fractionation Department

4. Details of the Seminar

[Day 1 and first half of Day 2]
"Japanese-style HRM and Corporate Training"

The seminar began with an opening speech by Mr. Mohammad N. Al-Naghash, Director of the Yanbu NGL Fractionation Department.

Then, a lecture was given for a day and a half on Japanese-style HRM and corporate training, divided into the following four parts.

(Part 1) History of Japan and the Japanese mentality
(Part 2) Japanese-style organizational teamwork and the substance of Japan's high economic growth
(Part 3) Characteristics of Japan's human resources and the reality of corporate training
(Part 4) Recent changes in Japanese society and companies and future corporate training issues

Throughout the lecture, there were many questions and comments from the participants, which at times developed into active discussions among them and set the tone for a highly successful program.

[Latter half of Day 2]
"Kaizen General"

The goal of this lecture is to provide knowledge of the Kaizen concept and the unique Kaizen mind of the Japanese people. It explained the process of introducing Kaizen activities, the "5S" method of achieving Kaizen, and "The Toyota Way" as an example of the result of accumulating Kaizen efforts, to examine what is needed to establish a "Kaizen mind" in the workplace. Most of the participants seemed new to the principles presented and listened to the lecture with strong interest, in their capacities as refinery trainers and managers.

One of the participants noted that the Kaizen concept is similar to the "Six Sigma" strategy he learned about in a previous training program and asked to be allowed to introduce it, so the lecture was suspended for several minutes while the participant introduced the strategy to the other participants.

[Days 3 and 4]
"Training Program Planning and General Training Theories"

This lecture is a regular program of the JCCP course on Training Management, which is given by Professor Hiromasa Tanaka of Meisei University over two days. It introduces the comprehensive knowledge needed to implement education and training, including survey methods for training needs, training program designing, and evaluation of training results. Owing in part to Professor Tanaka's proficiency in English, the lecture was a very well-received and high-level program that captured the participants' strong interest.

[Day 5]
"Personnel Management System and Training System in an Engineering Company"

The lecture began with an overview of the personnel system at JGC Corporation with a focus on the company's current salary and evaluation systems, and also covered employees' career path structure in the engineering company. After the first four days of lectures on an overview of HRD and training theories, this was the only lecture that introduced the reality of corporate training in specific terms.

After all of the programs were completed, the seminar closed with a closing speech by Mr. Husain M. Asiri, Operations Division Superintendent, Yanbu NGL Fractionation Department, and the presentation of completion certificates by A. Hoshino.

5. Summary

(1) The group of participants comprised 24 high-level employees above superintendent level and below manager level in charge of training. They came to Yanbu to attend the seminar from Saudi Aramco's head office and its refineries and terminals located throughout Saudi Arabia. From the beginning to the end of the seminar, they displayed earnest attitudes and frequently asked questions, raised new issues, and sought the lecturers' opinions. As mentioned earlier, their questions and comments at times stimulated active discussions among themselves.

(2) We assumed that the Middle East countries, and particularly Saudi Arabia, are much more "Americanized" than Japan. Therefore, we thought that an (American-style) "performance-based work environment" had already taken root in Saudi Arabia, compared to Japan, because it was only about ten years ago that Japanese companies began reviewing their seniority system, which had been an important factor in Japan's rapid economic growth. In this respect, we were worried whether information concerning present personnel systems in Japan would provide helpful knowledge to Saudi Arabia.

There was no need to worry, however, as the participants gave full and concentrated attention to the lectures on Japanese-style HRM and HRD, which seemed to capture their interest as new concepts. In addition to raising many questions and expressing their views, they also engaged in active discussions among themselves. Moreover, practically all participants took an active part in the seminar—whereas in most cases only a certain handful of participants engage in this type of active behavior—and demonstrated the high level of Saudi Aramco's employees and their outstanding English skills.

Discussions during a lecture presentation

Small seminar at Yanbu Industrial College

Students asking many questions after the seminar

6. Small Seminar at Yanbu Industrial College

The team of Japanese lecturers gave a special small seminar at Yanbu Industrial College, a regional college located in Yanbu City, on the night of the fourth day of the seminar. The faculty and students of the college, as well as HR managers from local companies, were invited to attend. It was held in response to a separate request from Saudi Aramco based on the wishes of the university aiming to achieve globalization.

Held in a large auditorium at the university, the seminar drew an audience of more than 100 faculty members, students, and other interested parties. After A. Hoshino and Prof. Tanaka gave short presentations, a surprising number of people took part in the subsequent Q&A session. The two major questions were the following.

(1) How do Japanese companies retain outstanding personnel?

(2) What are the differences between an individualism-oriented organization and a teamwork-oriented organization?

There were more questions than could be answered in the allotted time of the seminar, and because of this, many participants came up to the podium to ask questions after the close of the seminar. They mainly asked the following (replies omitted).

(1) What is the best way to create teamwork?

(2) How is Japan able to treasure its traditional culture while at the same time developing modern scientific technologies?

(3) What is important to continuing Kaizen?

The lecturers were impressed with the participants' pure drive and enthusiasm that was clearly evident in their eyes and behavior, qualities we are seeing less of in Japan today. With a large population of such young people, Saudi Arabia is certain to develop into an even greater power.

7. Observations

Yanbu, the city we visited for the seminar, is situated on the western coast of Saudi Arabia, north of Mecca and Jeddah, facing the Red Sea. It is a regional city comprising a large industrial zone, which has developed from its origin as Saudi Aramco's shipping terminal, and quiet towns. This was the Japanese lecturers' first visit to Saudi Arabia, and it exposed us to a world of Islam that is unlike that of other Middle East countries.

After the seminar, we visited JGC Gulf International, a local subsidiary of JGC Corporation located on the eastern cost of the country in Al-Khobar, to hold an exchange of information. The sight of the large city that differed from Yanbu opened our eyes to another aspect of Saudi Arabia.

<by Akio Hoshino, Training Dept.>

Prof. Hiromasa Tanaka, Meisei University

Mr. Hideki Otsuka, JGC Corporation

A. Hoshino, JCCP

CPO Seminar on "Maintenance Management" Held at Khartoum Refining Company

1. Background

Sudan began exporting crude oil in 2000, and has since increased its export volume yearly, to become a crude oil exporter on par with Indonesia and Vietnam today, in terms of countries outside of the Middle East. Nile Blend, its principal product, is well known as a low-sulfur, extremely high-quality crude oil, and contributes to Japan's stable supply of crude oil. Based on this relationship between Sudan and Japan, JCCP has already received some 20 participants from Sudan to its regular courses since participation of the first Sudanese participant in October 2009.

Last July, when Mr. Masataka Sase, Executive Director of JCCP, made an official visit to Sudan, he met with Mr. Salah H. Wahbi, President and CEO of SUDAPET, and reconfirmed the significance of building a mutually cooperative relationship between the two organizations. As the first step, a Customized Program-Overseas (CPO) on refinery maintenance management was held (Jan. 17 – 20, 2011) in response to a request from the Khartoum Refining Company (KRC).

In front of the KRC Training Center

2. Seminar Overview

The seminar was designed as follows to incorporate all contents requested by KRC.

- Day 1: Maintenance management in Japanese refineries (rotary machines)
- Day 2: Inspection and diagnosis of rotary machines in the refinery
- Day 3: Management of industrial water used in the refinery
- Day 4: Maintenance management in Japanese refineries (static equipment)

Lecturers were given by two lecturers from JCCP's Training Department (S. Miyawaki and K. Saito) and two outside experts, Mr. Shigeto Nishi from Hitachi Plant Technologies, Ltd. and Mr. Takashi Suzuki from the Suzuki Technology Office.

The seminar took place at the KRC Training Center, located adjacent to the Khartoum Refinery. As a state-of-the-art training facility designed exclusively for the refinery, it is outfitted with the latest functions and equipment, including a projector screen that doubled as a writing board, and provided the optimum environment for implementation of the seminar. Owing to the foresight and detailed attention of Mr. Eltayeb Koko Mousa, Manager, KRC Training Department, the facility also boasts a complete array of audio-visual training equipment.

With the seminar being the first of its kind to be held at KRC, Mr. Ali A. Rahman Mohamed, Deputy General Manager of KRC, personally expressed his warm welcome and high expectations of the seminar to the Japanese lecturers on the day before the seminar. He especially noted the following: KRC's wish to learn from Japan's best examples for the future development of Sudan; its expectations of JCCP's various training programs, including courses on the latest advanced technologies; its aim to become a model next-generation refinery as a key refinery mandated with the responsibility of supplying oil products, the "blood of the industry"; and its urgent need to develop Sudanese

Lecture scenes from Day 1 (upper left), Day 2 (upper right), Day 3 (lower left), and Day 4 (lower right)

engineers who will support the next generation. This all seemed to indicate the entire nation's strong expectations of the role of KRC in realizing the country's future development potential.

The first half of the seminar centered on topics related to the maintenance management of rotary machines, the heart of safe and stable operations in the refinery, and was attended mainly by mechanical engineers having strong interest in the subject, as expected. Many of the questions raised by the participants during the lectures had to do with specific concerns of the maintenance managers themselves in their respective areas. For example, they asked about the significance of communication between maintenance managers and operations engineers in the refinery, and about the implementation and examples of improvement measures in their actual duties. Such questions are also frequently asked in JCCP regular courses, because there is a particularly strong need for maintenance management of replacement parts for refinery facilities and equipment, and the timely procurement of such parts from foreign countries is an issue that directly relates to the reality of maintenance management in refineries. As a common issue among refineries, the participants of this seminar in Sudan also asked similar questions and engaged in active discussions among themselves as they reaffirmed the significance of the issue.

As a new initiative, the Japanese lecturers, accompanied by maintenance facility managers, visited the refinery's workshop that also provides on-the-job training to maintenance engineers, to conduct direct, onsite training. The opportunity allowed the lecturers a glimpse into actual maintenance activities in the refinery, as well as provided valuable hints for designing even

Onsite training through a workshop

Onsite training at a water quality control facility (input point on the Nile River)

more practical and beneficial customized seminars in the future.

The lecturers also had the opportunity to visit a water quality control facility located adjacent to the intake point of industrial water used by the refinery (floating pump station installed along the Nile River) and assess the water quality management situation. The experience provided extremely meaningful insight for promoting and translating the content of the seminar lectures into action.

Lecturers and participants after the closing ceremony

3. Summary

The African region is composed of a large number of important oil-producing countries, but this seminar was the first customized seminar to be held in Africa in eight years after the previous seminar in 2002 (maintenance management seminar in Nigeria). In the preparatory stage, the functions and performance of facilities at the KRC Training Center (mainly AV equipment to be used in the lectures) were assessed in detail, and close coordination was maintained with the KRC counterpart to ensure the smooth implementation of the seminar. As a result, the entire schedule ran as agreed and planned, and greatly relieved the lecturers and all staff concerned. The initial objectives of the seminar were able to be achieved also owing to a variety of other factors. It greatly helped that KRC had arranged an optimal team of training center staff members, and that the participants kept regular times and allowed the lecturers to begin each session on time and to almost effortlessly cover all the lecture contents they had planned in advance. Furthermore, the participants as a whole, including those who have participated in a JCCP course in the past, engaged in mutual discussions concerning the seminar topic, and created a forum for meaningful interaction and exchanges of views.

The seminar was held around the same time as the referendum on independence for Southern Sudan. A monitoring organization led by former US President Jimmy Carter and various other foreign missions were in Sudan to monitor the referendum, media outlets from around the world were providing local coverage of the referendum in response to worldwide concerns, and BBC and CNN were seen relaying daily news about the voting situation and interviews with local residents. Soon after completion of the seminar (on Feb. 7, 2011), the President of Sudan officially announced the final results of the referendum, with 98.83% voting in favor of independence, and news of Southern Sudan's independence in July raced around the world. Given this historical announcement, JCCP feels mounting importance to establish the direction of its activities and cooperative relationship based on an accurate assessment of development trends in the global oil industry and in consideration of the role of Northern and Southern Sudan in the production of oil.

<by Shintaro Miyawaki, Training Dept.>

CPJ Seminar on "Petroleum Marketing and Physical Distribution" for ADNOC

1. Background

The ADNOC Group has always had a strong wish to provide broad knowledge of the entire series of operations involved in the oil upstream to downstream sectors to all employees, including those who engage in marketing activities, as part of its human resource development and training initiatives. Based on this understanding, JCCP members paid a visit to ADNOC and presented a proposal for implementing a Customized Course–Japan (CPJ) to the managers of the human resources and marketing departments. In line with ADNOC's needs, we proposed to cover the overall flow of oil in Japan, from the receiving and stockpiling of crude oil to the refining and marketing of oil products. The relevant managers strongly agreed to our proposal, and thus the seminar came to be implemented.

2. Seminar Overview

Upon consultation with the human resources manager at ADNOC, the seminar was decided to be held over 11 days, to minimize any burden on the participants' work duties. A full agenda was planned from October 5 to 15, 2010, filled with offsite training programs at an oil storage terminal, a refinery, a sales office, and an oil supplier, in addition to lectures at JCCP Headquarters.

A total of 10 members participated in the seminar, including four from the ADNOC Head Office, three from ADNOC Distribution (a marketing subsidiary), two from TAKREER (a refining subsidiary), and one from ADNATCO-NGSCO (a shipping subsidiary). The majority of the participants were young, middle-level employees at an average age of 34, and included one woman.

3. Content of the Seminar

The lectures at JCCP Headquarters focused on Japan's oil industry and the state of oil marketing and physical distribution, while also providing a global perspective on the world's energy situation. Japan's oil industry and the importance of stable oil supplies in a country without oil resources were described through comparisons between UAE and Japan in terms of the differences between an oil-producing country and an oil-consuming country, and the differences between private oil companies and state-run oil companies. The lecture on the world's energy situation provided an overview of such global concerns as global warming, environmental issues, and the forecast of primary energy demand in the future.

The offsite training sessions took place at the Fukuoka Branch Office of Cosmo Oil Co., Ltd., Shirashima Oil

Observation of a fueling operation by San-ai Oil at Haneda Airport

At a Cosmo Oil service station

Storage Company, Ltd., the Negishi Refinery of JX Nippon Oil & Energy Corporation, and the Haneda Branch Office of San-ai Oil Co., Ltd.

At the Cosmo Oil Fukuoka Branch Office, the participants received a lecture on the head office functions of an oil distributor and its sales policies, and on the sales branch's independent sales strategies. Then they inspected the actual operations of the latest service station. Questions focused on the sales activities of the branch office, and particularly on the relationship and contract between a primary distributor (*tokuyakuten*) and a dealer, because the *tokuyakuten* system is Japan's unique commercial practice.

Shirashima Oil Storage Terminal gave a lecture on the organizational function and role of the world's first oil storage base on the ocean, with a special focus on safety and environmental measures that are of paramount importance to the base, followed by a tour of the deck on the storage ship. Needless to say, it seemed that the whole concept of needing a national oil reserve was foreign to the participants from an oil-producing country.

JX Nippon Oil & Energy Corporation's Negishi Refinery gave a lecture on the organizational function, characteristics, and role of Japanese refineries, and took the participants on a tour of a computer-controlled, state-of-the-art lubricant loading process and product shipping facility. Japan's diversified physical distribution systems and thorough quality management, in particular, seemed to capture the participants' interest.

San-ai Oil's Haneda Branch Office gave a lecture on the process and management of the jet fuel storage and shipping facility, which comprises the core business of the company, and allowed the participants to actually step onto the apron of the airport to observe firsthand the fueling of an aircraft. Just around this time, Haneda Airport was preparing for the opening of its new runway. Fortunately, the participants were allowed to take a look inside the soon-to-be-opened terminal.

At Shirashima Oil Storage Terminal

4. Summary

The 11-day time span of the seminar was decided upon prior consultation with ADNOC counterparts, but many of the participants noted in their evaluation form that 11 days was too short, and that two weeks may have been more appropriate. We would like to take these comments into consideration when planning future CPJ seminars.

With respect to the content of the course, it seemed the participants were generally satisfied that they were able to learn about the entire flow of oil in Japan, from the receiving and stockpiling of crude oil to the refining and marketing of oil products. We are especially glad that the participants gave high marks to all of the offsite programs, because the weight of this particular seminar was placed on offsite training with the intention of providing information and knowledge of oil marketing and distribution more from firsthand observations and experience than from classroom lectures, in contrast to regular training programs on technical issues.

We feel that this seminar has brought JCCP and Japan closer to ADNOC employees, and hope that it will contribute to the stable supply of oil to Japan.

<by Kazuo Kojima, Training Dept.>

CPJ Seminar on "Environmental Management in the Refinery" for Iraq

A Customized Program-Japan (CPJ) on "Environmental Management in the Refinery" (CPJ-26-10) was held for a group of participants from Iraq, from November 9 – 19, 2011.

1. Background

The course was organized in response to a request from the Iraqi Ministry of Oil, and was attended by a group of engineers from Iraqi oil companies selected by the Ministry. It was implemented following a well-received CPJ on "Heavy Oil Upgrading" (CPJ-25-10) that was held for a different group of Iraqi participants from October 13 – 28, 2010.

In Iraq today, there is rapidly increasing interest in environmental management. For example, there are moves to undertake the environmental impact assessment (EIA) of the East Baghdad Field by independent efforts. Given this trend, the Iraqi Ministry of Oil requested a course on environmental management, and JCCP readily consented.

A curriculum mutually approved by JCCP and the Ministry was designed through preliminary consultations between the two organizations concerning the content of lectures.

2. Planning

To provide practical training as strongly sought by the Iraqi Ministry of Oil, the course was designed beyond the bounds of a regular course on environmental management to incorporate topics of particular need to the Iraqi side, such as environmental risk assessment, CDM (clean development mechanism), noise restrictions, simulation of air pollutant dispersal, and flare gas recovery. It also included a visit to Chugai Technos Corporation for the very first time. Based in Hiroshima City, the comprehensive engineering company offered a highly practical training program that included a detailed examination of environmental measurements.

3. Participants

The 11-member group from Iraq (8 men, 3 women) comprised 2 participants each from the North, Midland, and South Refineries, 2 each from the North and South Gas Companies, and 1 from the Petroleum Research Center. In terms of age, 4 were in their twenties with the youngest participant being 26, 2 were in their thirties, 3 were in their forties, and 2 were in their fifties, with the oldest participant being 55. Their average age was 38.

Participants and JCCP staff

4. Training at JCCP

(1) Japan's Oil Industry

This lecture covered diverse aspects of the oil industry in Japan, including the following: primary energy trends in Japan; the status of petroleum within Japan's total energy composition (petroleum share and its significance); the physical distribution of crude oil and oil products from import to sales; and primary petroleum distributors, their share, and the locations and capacities of their refineries. The participants said the lecture effectively provided a comprehensive picture of the oil industry in Japan.

As refinery operations are becoming increasingly challenging in recent years even by Iraq's state-run oil companies, we believe the participants gained a useful frame of reference by learning about the intensely competitive situation of Japan's oil industry.

(2) Wastewater Reutilization and Seawater Desalination

This lecture covered such topics as the situation regarding water utilization in Japan, membrane filters, reverse osmosis and other membrane processing technologies, and seawater desalination projects being implemented in countries such as Qatar and Saudi Arabia. In addition to contents normally provided in the regular environmental management course, it also placed particular focus on the treatment of oilfield-associated water, to provide a wider scope of information.

(3) Flare Gas Recovery in the Refinery

In addition to flare gas recovery, this lecture discussed the reduction of greenhouse gases as a global warming countermeasure and topics related to energy conservation technologies. The introduction of the Packinox heat exchanger, in particular, captured the participants' strong interest as it was the first time they had heard of the apparatus, so much that additional reference materials were handed out to all participants after the lecture.

(4) Air Pollution Prevention Measures in the Refinery

This lecture covered measures for SOx reduction through FGD (flue gas desulfurization), measures for NOx reduction through the use of ultra-low NOx burners (Free Jet and SMR INFURNOx burners, etc.), and other air pollution prevention measures, as well as topics related to risk assessment and CDM (clean development mechanism) that are not normally included in the regular environmental management course but were included by request from the Iraqi side.

(5) Water Pollution Prevention Measures

This lecture introduced the various biological, chemical, and physical water treatment methods that Japan has developed through its history of water pollution. It also discussed specific cases of sewage treatment and pure water production, and captured the participants' strong interest.

(6) Tank Sludge Treatment

This lecture covered such topics as prevention methods for the sedimentation of tank sludge, tank cleaning methods, COW (crude oil washing), topper charging after COW, and final sludge treatment. Although it was a short lecture, it provided succinct explanations of essential points, and was well received by the participants.

(7) Soil and Groundwater Remediation

In this lecture, the current situation and legal regulations concerning soil and groundwater pollution in Japan and Europe were introduced in reference to case examples, and an overview was given of remediation technologies that are used today. Additionally, topics concerning the reutilization of refinery wastewater, which are not normally covered in the regular environmental management course, were discussed based on materials that were specially prepared for this CPJ. The broad-ranging and easy-to-understand lecture was appreciated by all participants.

5. Offsite Training

(1) Chugai Technos Corporation, Hiroshima Head Office

At the Hiroshima Head Office of Chugai Technos Corporation, staff members provided a lecture on water quality measurements mainly with respect to COD and suspended solids, as well as on atmospheric measurements and noise measurements, and discussed topics related to environmental impact assessment and simulations of air pollutant dispersal in an easy-to-understand manner. After gaining general knowledge from the lecture, the participants divided into two groups to observe actual measuring activities in the field and further their understanding. The participants noted

Offsite training at Chugai Technos Corporation

with approval that the opportunity to not only observe measuring activities, but to also witness a demonstration of measurement methods, helped them better understand measurement processes.

As this was the first time for Chugai Technos Corporation to receive JCCP participants as a facility for offsite training, the company spent a considerable amount of time making advance preparations, and the president and all relevant staff members divided responsibilities and practiced their respective roles. As a result of the practice, the company provided an extremely in-depth yet understandable training program.

(2) Cosmo Oil Co., Ltd., Sakaide Refinery

At the Sakaide Refinery, an overview was given of the company and refinery, followed by a tour of the refinery site with a focus on the wastewater treatment facility, and a lecture on environmental management in the refinery. The participants had many questions and expressed so much interest in the wastewater treatment facility that additional reference materials on wastewater treatment were hastily prepared and handed out to all participants.

6. Observations

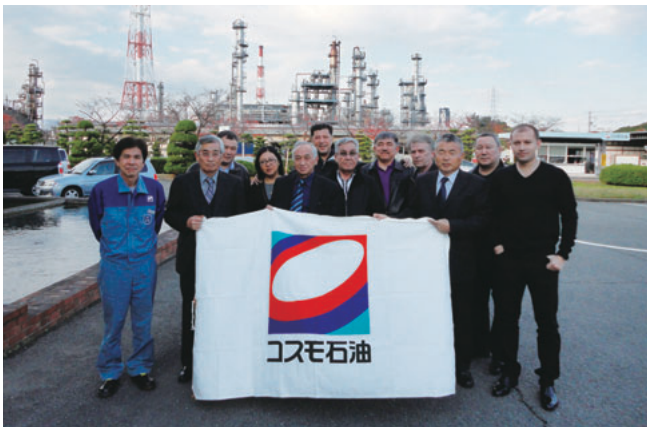
This course was held following the implementation of a CPJ on heavy oil upgrading for Iraq last October. All programs were carried out as planned without any trouble, and the 11-member group of Iraqi participants, who displayed serious and earnest attitudes throughout the course, successfully completed their training in Japan.

In response to a request from the Iraqi side, the participants were given an assignment on the first day, to "identify a problem area in their respective work, and submit a possible solution to that problem on the final day of the course, based on what they have learned." These reports will be sent to Iraq at a later date, and will also serve as a reference for future evaluation of the participants. Based on this awareness, all participants engaged in their training in a positive manner, with the clear objective of acquiring possible solutions to their problems.

Environmental management is one of the most needed technologies to Iraq's oil industry, to ensure safe and sound refinery management, as well as to allow the expansion of refinery capacity and construction of new refineries in the future. JCCP feels that having gathered environmental management engineers from Iraq and successfully implemented this type of training program in Japan has great meaning to the future of both Iraq's and Japan's oil industries.

<by Shigeyoshi Takahashi, Training Dept.>

CPJ Seminar on "Total Quality Management" for KazMunayGas



At Cosmo Oil's Sakai Refinery

1. Background

This course was implemented in response to a request from KazMunayGas (KMG), Kazakhstan's state-run oil and gas company that is recently garnering worldwide attention for its oil and uranium resources.

KMG and its group companies have introduced international standards for quality management (ISO 9000) and environmental management (ISO 14000) in 2006, and are promoting a unified management system that includes industrial safety standards (OHSAS 18000), but the effectiveness of this initiative still needs to be examined. For this reason, a group composed of CEO-class managers from across KMG and its group companies was organized to take part in a CPJ to learn about the total quality management (TQM) initiatives of Japanese companies, and to acquire information on actual situations concerning TQM and its operational know-how.

2. Seminar Content

The training program was roughly divided into two parts. The first part was composed of lectures at JCCP Headquarters, including those conducted by JCCP lecturers and those conducted by outside lecturers. The second part was composed of offsite training programs that were designed to provide practical field training in relevant technologies and activities at two refineries and one instrumentation device manufacturer.

2.1 Training at JCCP

First, a lecture was given on the current situation of Japan's oil industry. Then, over the next two days, a series of lectures covered the following topics in detail to provide a comprehensive understanding of TQM in Japan: the quality improvement cycle; establishment of a system for continuous improvement; the background, necessity and effects of quality management; the TQM concept; strategies and specific policies concerning customer satisfaction; and the 5S activities. By examining TQM systematically and specifically introducing practical TQM procedures, the lectures at JCCP Headquarters seemed to measure up to the expectations of the Kazakh group. All participants focused strong attention on the lectures until the very end.

Lecture at JCCP Headquarters

2.2 Offsite Training

- **Cosmo Oil Co., Ltd., Sakai Refinery**

After introducing the refinery and giving an overview of its operations, staff members of the Sakai Refinery talked about quality management, improvement activities, and campaigns related to quality management that are implemented by the refinery. In the afternoon, the focus of the program was placed on the profit improvement project that the refinery is implementing under the consultancy of KBC, and explanations were given of the improvements that have been achieved to date and the effectiveness of the project in terms of profit amount. As there were some participants who have experienced a similar type of project, the group raised many questions and engaged in extremely active discussions.

At the Negishi Refinery of JX Nippon Oil & Energy Corporation

At the Mitaka Head Office and Plant of Yokogawa Electric Corporation

- **JX Nippon Oil & Energy Corporation, Negishi Refinery**

The staff of the Negishi Refinery gave an overview of the refinery, introduced the equipment composition and flow of oil in the refinery, its heavy oil cracking units such as RDS and RFCC, and the refinery's responses to the latest trends toward clean fuels. They then provided a tour of the test analysis laboratory, which serves as the center of quality management in the refinery, and explained its functions. In the afternoon, detailed explanations were given of the actual state of quality management in the refinery and the profit improvement program, which the refinery has pursued to date.

The Negishi Refinery has large numbers of various types of secondary units, and the tour of its test analysis laboratory impressed the participants with its extensive array of facilities. The extremely detailed explanations of the profit improvement program seemed to also satisfy the participants' interest and provoked further thoughts among them.

- **Yokogawa Electric Corporation, Mitaka Head Office and Plant**

The training program at Yokogawa Electric began with a welcome address by the director of the Global Engineering Business Headquarters, and included an introduction of the company's most recent operations and the functions of the latest DCS system, by their respective managers. It also included a tour of the company's Kofu Factory. To provide greater understanding of the company's management of product quality and management systems, the participants visited the Kofu Factory by chartered bus and observed in detail the production lines and quality management systems of various products. The extremely meticulous and hospitable attention of all staff members was greatly appreciated by all participants.

3. Evaluation and Impressions

Notwithstanding the course's short duration of just nine days, it included visits to two refineries and one instrumentation device manufacturer, and provided deep knowledge of the TQM situation in Japan's industries. The efficient course coordination and arrangement efforts of JCCP were highly appreciated by the Kazakh group. Because the group was composed of CEO-class managers from across KMG and its group companies, the participants had extremely sharp and incisive questions about important points that pertained to their respective fields. This seemed to indicate their strong desire to learn about the TQM initiatives of Japanese companies and the actual status of TQM in Japan, as well as to acquire operational know-how about TQM activities.

The Kazakh Ambassador to Japan lent his presence to the closing ceremony, and affirmed Kazakhstan's wishes to strengthen relations between the two countries and its expectations of JCCP activities.

<by Yoshiaki Ueno, Training Dept.>

Closing ceremony

Saudi Aramco Vice President and Aramco Overseas Company President Visit JCCP

Since the year before last, JCCP and Aramco Overseas Company (AOC), a subsidiary of Saudi Aramco, have engaged in discussions toward the implementation of a Customized Program-Japan (CPJ) for Saudi Aramco's Materials Supply Organization. Upon reaching an agreement on the course program, an agreement signing ceremony for implementation of the CPJ was held on December 1, 2010 at JCCP Headquarters, with the attendance of representatives from Saudi Aramco and AOC, and Mr. Masataka Sase, Executive Director of JCCP.

Representatives from Saudi Aramco included Mr. Munir Rafie, Vice President, Material Supply, and Mr. Abdullah Al-Warthan, Manager, Projects Purchasing and Strategic Sourcing Department. Representatives from AOC included Mr. Ahmed Al-Zayyat, Managing Director; Mr. Abdulmonem Al-Momin, Manager Purchasing, Logistic & Contracting Department; Mr. Ahmed Al-Zahrani, Chief Representative of the Tokyo Office; and two key members from the Tokyo Office.

Many refinery operations and maintenance engineers from Saudi Aramco have participated in JCCP training programs to date. Therefore, JCCP readily agreed to implement the CPJ in response to a request from Saudi Aramco's Materials Supply Organization. Around ten university graduate-level employees from the organization will be invited to Japan to acquire comprehensive knowledge of Japan's oil industry through exchanges of information with Japanese oil companies and practical training at materials manufacturing companies in Japan. At the same time, the program will offer participants an opportunity to learn about Japanese business practices, job performance, and work ethics.

After the signing of the CPJ agreement by Mr. Al-Zayyat and Mr. Sase, JCCP staff members introduced JCCP's activities and facilities to the Saudi delegation and promoted deeper understanding of JCCP.

We believe that the visit by key figures from Saudi Aramco and AOC has laid the foundation for widening relationships between JCCP and Saudi Aramco, which we consider one of our most important counterparts in the Middle East.

<by Akio Yamanaka, Operations Dept.>

Signing Ceremony:
Mr. Ahmed Al-Zayyat, Managing Director of AOC, and Mr. Masataka Sase, Executive Director of JCCP, shake hands after signing the agreement

Address by Mr. Munir Rafie, Vice President of Material and Supply, Saudi Aramco

JCCP Regular Courses Completed in November 2010 – January 2011

TR-16-10 Training Management
November 22 – December 9, 2010 **Lecturer: Akio Hoshino**

Content: Overview of Japanese Oil Industry; Japanese-style Human Resource Management & Development; HRD of Oil Company in Japan; HRM & TPM at Refinery; Kaizen General & Kaizen examples at a Refinery; HRD of Engineering Company; Training Program Development by University Professor; Rational Thought and Team Consensus Building

Site visits: JX Nippon Oil & Energy Corporation (Head Office); Idemitsu Kosan Co., Ltd. (Tokuyama Refinery); JX Nippon Oil & Energy Corporation (Mizushima Refinery); JGC Corporation; Meisei University

Country of participants: Bahrain China, Indonesia, Libya, Myanmar, Nigeria, Oman, Pakistan, Saudi Arabia, UAE, Vietnam

<11 countries / 16 participants>

TR-17-10 Information and Control Systems Utilized in Refineries
November 22 – December 9, 2010 **Lecturer: Kazuhiro Suzuki**

Content: Petroleum Industry in Japan; Outline of Distributed Control System (DCS); Trend of Information and Control Systems; Process Control Theory; Hands-on Training of Process Control; Operation Support System; Outline of Alarm Management; Modernization of Instrumentation

Site visits: Yokogawa Electric Corporation (Mitaka Headquarters); Emerson Japan Ltd. (Mizushima Solution Center); JX Nippon Oil & Energy Corporation (Mizushima Refinery); Idemitsu Kosan Co., Ltd. (Chiba Refinery); JGC Corporation

Country of participants: Indonesia, Kazakhstan, Libya, Mexico, Nigeria, Oman, Saudi Arabia, Sudan, UAE, Vietnam, Yemen

<11 countries / 14 participants>

TR-18-10 Energy Saving for Profitability Improvement
January 11 – January 28, 2011 **Lecturer: Bunsuke Kariya**

Content: Petroleum Industry in Japan; Simulator Practice; Energy Saving of Refineries; Pinch Technology; Recent Energy Saving Technology 1 (Furnace, Rotating Machinery, Multiple Sites Pinch Technology); Recent Energy Saving Technology 2 (Energy Conservation Design, Co-generation); Case Study

Site visits: JX Nippon Oil & Energy Corporation (Negishi Refinery); Toa Oil Co., Ltd. (Keihin Refinery); TLV Co., Ltd. (Head Office, Kakogawa Factory); Mitsubishi Heavy Industries, Ltd. (Nagasaki Shipyard & Machinery Works)

Country of participants: Colombia, India, Indonesia, Iraq, Kuwait, Mexico, Myanmar, Pakistan, Thailand, UAE, Sudan, Vietnam

<12 countries / 13 participants>

IT-1-10 Turnaround and Inspection
November 29 – December 10, 2010 **Lecturer: Fumihiro Tone**

Content: Outline of Petroleum Industry in Japan; Planning and Execution Management of Turnaround Maintenance & Inspection in Japanese Refineries; Maintenance Technology and Human Resource Development of Contractor; Latest Maintenance Technologies and Responses to Maintenance Management Overseas; Overhaul Technologies for Boilers and Other Static Equipment; Introduction and the Latest in Non-Destructive Inspection Technologies; Reliability Improvement and the Latest Technologies in Rotary Machines and Pressure Vessels; Latest Maintenance Technologies of a Plant Maintenance Company; Promotional Framework and Case Examples of Maintenance Planning & Scheduling in the Refinery

Site visits: JGC Corporation (Headquarters); Mitsubishi Heavy Industries, Ltd. (Yokohama Works); Non-Destructive Inspection Co., Ltd. (Headquarters); Kobe Steel, Ltd. (Takasago Equipment Plant); Shinko Plantech Co., Ltd. (Isogo Factory); Idemitsu Kosan Co., Ltd. (Chiba Refinery)

Country of participants: Indonesia, Mexico, Oman, Nigeria, Pakistan, Saudi Arabia, Sudan, Thailand, Vietnam, Yemen

<10 countries / 15 participants>

IT-2-10 Petroleum Marketing and Physical Distribution
January 18 – January 28, 2011 **Lecturer: Yasuo Tabei**

Content: The Petroleum Industry in Japan; Current World Energy Situation; Shipping Facilities of Refinery; Oil Company's Sales Strategy and Physical Distribution; Crude Oil Terminal; Transportation System & Safety Driving; Development of New Business & New Automobile Fuel; Japanese Management Style and Kaizen General

Site visits: JX Nippon Oil & Energy Corporation (Head Office / Mizushima Refinery); Nippon Oil Staging Terminal Co., Ltd.; Uyeno Kosan, Ltd.; Showa Shell Sekiyu K.K. (Head Office)

Country of participants: Bahrain, Gabon, Iraq, Nigeria, Oman, Sudan, Thailand, UAE, Vietnam, Yemen

<10 countries / 12 participants>

New JCCP Project Launched in Kuwait

—Joint Research on Upgrading Technology of Kuwait Heavy Crude—

1. Background

Kuwait exports crude oil and also processes heavy crude oil for domestic consumption. In recent years, however, trends toward low-sulfur gasoline, kerosene and gas oil, and the aging of domestic refineries are calling for urgent measures. To address these issues, Kuwait National Petroleum Company (KNPC) has decided to promote two simultaneous projects: the New Refinery Project (NRP) and the Clean Fuel Project (CFP).

As part of these projects, KNPC plans to construct new desulfurization units to reduce the sulfur content of gas oil and heavy oil. However, it needs to upgrade its technologies for selecting high-performance desulfurization catalysts and evaluating catalyst performance, before ultra-deep desulfurization of gas oil and desulfurization of heavy oil can proceed using the new desulfurization units. It has therefore asked Kuwait Institute for Scientific Research (KISR) to commence a study on the selection and performance evaluation of desulfurization catalysts.

Thus tagged by KNPC, KISR turned to JCCP for cooperation. JCCP called on the participation of JX Nippon Research Institute Ltd. and Kyushu University, and together organized a new JCCP project called "Joint Research on Upgrading Technology of Kuwait Heavy Crude" based on Japan's technologies, experience, and know-how regarding desulfurization catalysts. The project was scheduled to be implemented over a three-year period from fiscal 2010.

2. Project Overview

Before technologies for desulfurization catalyst selection and catalyst performance evaluation can be developed, it is necessary to assess the composition of the feedstock to be desulfurized through catalyst activity. Therefore, the composition of Kuwait heavy crude oil (Lower Fars crude oil, Eocene crude oil, etc.), the gas oil and heavy oil refined from heavy crude oil, and the resulting desulfurized light fuel and heavy oil, will be analyzed in detail, to assess the desulfurization reaction properties of gas oil and heavy oil. Additionally, the performance of various demetallization catalysts will be investigated using literature references, because in heavy oil desulfurization, metals that degrade the activity of desulfurization catalysts must be removed through a demetallizing process.

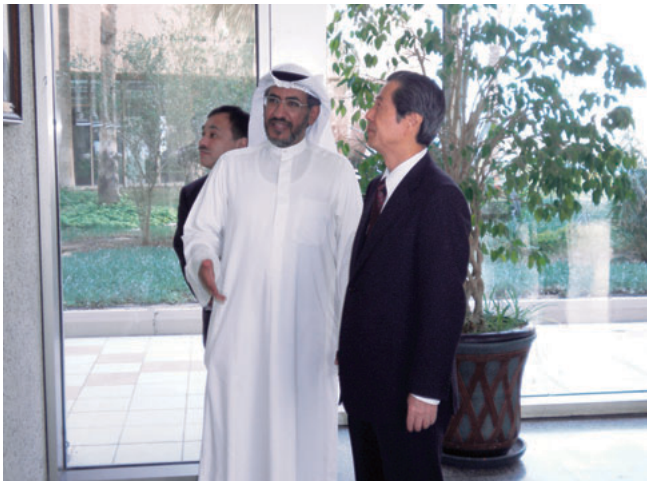
Based on the results of the above, desulfurization and demetallization catalysts will be selected for use in pilot tests, and the selection of catalysts and conditions for the pilot tests will be proposed to KISR. Improvements of test conditions (operations, sample collection, analysis items, etc.) will also be discussed with KISR as necessary.

By executing the above activities, the project ultimately aims to transfer Japan's technologies for desulfurization catalyst selection and catalyst performance evaluation to the Kuwaiti oil industry.

Signing ceremony

Dr. Hideo Nagashima, Vice President of Kyushu University, delivering a congratulatory message

Dr. Naji Mohammed Al-Mutairi, Director General of KISR, and Mr. Morihiro Yoshida, Managing Director of JCCP, exchanging the MOA



Dr. Al-Mutairi relaying the history of KISR to Ambassador Yasuyoshi Komizo

3. Signing Ceremony

After much consultation regarding the content of the joint project, KISR and JCCP reached an agreement and held a ceremony for the signing of a Memorandum of Agreement (MOA) on November 1, 2010. The MOA was signed by Dr. Naji Mohammed Al-Mutairi, Director General, on the KISR side, and by Mr. Morihiro Yoshida, Managing Director of JCCP, on the Japanese side, and commemorative gifts were exchanged with a prayer for the success of the new project.

From the Japanese Embassy in Kuwait, Mr. Yoshinori Yamashita, First Secretary, attended the ceremony and delivered a congratulatory message on the commencement of the new JCCP project, expressing his hope that the project will contribute to strengthening the friendly relationship between Kuwait and Japan. Also representing the Japanese side, Dr. Hideo Nagashima, Vice President of Kyushu University, attended the ceremony and, on behalf of the institution as a cooperating member of the JCCP technical cooperation project, pledged to provide technical cooperation to KISR. On the Kuwaiti side, a total of 17 members attended the ceremony from companies such as Kuwait Petroleum Corporation (KPC), Kuwait Oil Company (KOC), and KNPC, and expressed words of appreciation to JCCP for its technical cooperation.

H.E. Mr. Yasuyoshi Komizo, Japanese Ambassador to Kuwait, rushed to the venue of the signing ceremony immediately after the presentation of the credentials to the king of Kuwait. The Ambassador participated in the welcome reception at KISR Headquarters with the Japanese delegation, and enjoyed a pleasant chat with Dr. Al-Mutairi.

All members of the project hope for its successful completion, and that the transfer of catalyst selection and new catalyst development technologies to Kuwait will further deepen the two countries' friendly relations.

<by Nobuyuki Suyama, Technical Cooperation Dept.>

Memorandum of Agreement

Pilot Plant Completion Ceremony for the Study of Oilfield-produced Water Treatment in Oman

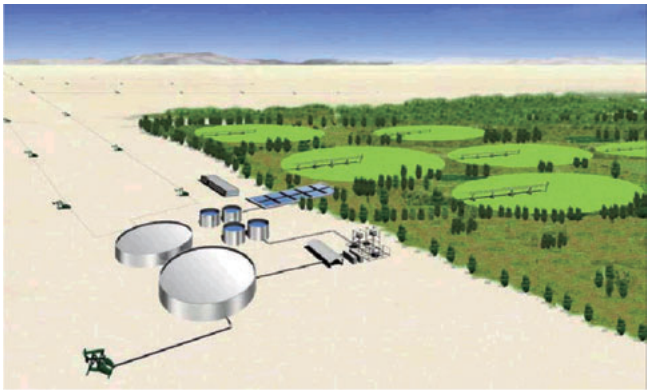
On November 10, 2010, a ceremony was held to commemorate the completion of a pilot plant for a JCCP technical cooperation project on oilfield-produced water treatment in Oman. The ceremony was organized by Sultan Qaboos University (SQU) and Petroleum Development Oman (PDO), and took place at the PDO Ceremony Center.

1. Project Overview

Over the four years from fiscal 1997 to 2000, Shimizu Corporation carried out a small-scale experiment called "Study on the Treatment and Utilization of Oilfield-produced Water in Oman," with subsidy from the Japan Petroleum Energy Center (JPEC). Based on this experience, it is now exploring low-cost, high-efficiency treatment methods for oilfield-produced water in Oman, with an eye to the possibility of commercializing an effective method in the future.

As one treatment method, Shimizu Corporation proposed a coagulation/pressure floating treatment using microbubbles. It then simplified the system and made it possible to construct a compact, container-sized pilot plant (50 m^3/day).

It also found a way to produce activated carbon from the trunk of date palms as an adsorbent made from a natural material available in Oman, and succeeded in producing an oil adsorbent with roughly three times greater oil-adsorbing capacity compared to commercial activated carbons. Yet it is still aiming to develop even higher-performance adsorbents in the future.



Rendering of the utilization of oilfield-produced water

H.E. Dr. Mohammed Hamed Saif Al-Rumhi, Minister of Oil & Gas, delivering a speech

2. Completion Ceremony

The completion ceremony was held with the objective of introducing the pilot plant's operational performance in treating oilfield-produced water, and of promoting greater awareness of the JCCP project among relevant Omani parties.

A number of key figures associated with the oil industry in Oman attended the ceremony on the Omani side, including H.E. Dr. Mohammed Hamed Saif Al-Rumhi, Minister of Oil & Gas; Dr. Ali bin Saoud Al-Bemani, Vice Chancellor of Sultan Qaboos University; and Mr. Raoul M. Restucci, Managing Director of Petroleum Development Oman LLC. H.E. Mr. Seiji Morimoto, Japanese Ambassador to Oman, and Mr. Morihiro Yoshida, Managing Director of JCCP, represented the Japanese side.

H.E. Dr. Al-Rumhi gave a speech, saying that people usually lose interest in a study once it finishes, but this study on produced water treatment is still evolving. He also pledged the Ministry's support for the valuable project along with PDO, and expressed his expectations that purified water will one day transform areas surrounding the oilfields into a verdant landscape.

Ambassador Morimoto also gave a congratulatory message. He said he hopes that the pilot plant will eventually develop into a full-scale commercial project and supply irrigation water that will bring a green environment to people working near oilfields in Oman. Toward this end, he said he also hopes that Japanese companies will not only aim to commercialize the technology but will also work with PDO in exploring the possibility of its dissemination. He then closed his message by promising the Japanese Embassy's cooperation to all Japanese companies engaging in environmental projects in Oman.

Mr. Yoshida spoke on behalf of JCCP, and gave a round of sincere appreciation to the Omani Ministry of Gas & Oil, the Japanese Embassy in Oman, and SQU, for their constant support of JCCP activities, and to PDO for organizing a truly special and significant ceremony.

Setup of the water treatment unit

Following words of congratulations by the guest of honor and host of the ceremony, a brief introduction was given of the project, and a video presentation was used to provide an overview of the operational performance of the demonstration test unit. Interest in the project ran high among the Omani participants, who raised frequent questions and comments during the presentation.

The ceremony received widespread media attention.

Participants to the ceremony

It was covered by six newspapers (three English-language and three Arabic) and by television and radio broadcasts in Oman, and also by television broadcasts and newspapers in Japan.

3. Future of the Project

The objective of the study is to treat and recover oil from oilfield-produced water in Oman using low-cost wastewater treatment technologies, and to explore the feasibility of commercializing the reutilization of the treated water for irrigation. JCCP hopes to achieve this goal by conducting a series of treatment tests in oilfield regions throughout the country using the just-introduced mobile pilot plant, and jointly addressing whatever problems exist in each oilfield region with the relevant counterpart.

The treatment of oilfield-produced water is one of Oman's greatest environmental concerns. We believe that applying Japan's technologies and experience to addressing the issue and creating new water resources through commercialization of this project will contribute significantly to Oman's sustainable development as sought by the country, as well as help strengthen friendly relationships between Oman and Japan.

<by Kenji Ikushima, Technical Cooperation Dept.>

The 20th Saudi Arabia-Japan Joint Symposium

On December 5 and 6, 2010, a Saudi Arabia-Japan joint symposium on oil refining and petrochemical catalyst technologies was implemented by the Japan Petroleum Institute (JPI) under the sponsorship of JCCP and King Fahd University of Petroleum and Minerals (KFUPM) in Saudi Arabia. To commemorate the milestone marking the 20th holding of the joint symposium, this year's symposium featured a special speech by a Nobel Laureate and a commemorative reception, in addition to the usual presentations, which included presentations of the latest R&D results by six Japanese researchers.

At the opening ceremony on December 5, Dr. Sahel Abduljauwad, Vice Rector of KFUPM, read a message from H.E. Dr. Khaled S. Al-Sultan, Rector. Mr. Koichi Eguchi, leader of the Japanese speakers, and Mr. Morihiro Yoshida, Managing Director of JCCP, also gave opening greetings.

The presentations covered topics related to the latest catalyst production technologies and trends in the oil refining and petrochemical sectors. The Japanese side gave nine presentations, including those related to JCCP technical cooperation projects, the Saudi Arabian side also gave nine presentations, and members from other countries gave four presentations, for a total of 22 presentations. The auditorium was filled with more than 80 participants. The special speech by Dr. Robert Grubbs, professor at the California Institute of Technology who won the 2005 Nobel Prize in Chemistry, was a landmark event.

Dr. Robert Grubbs (2005 Nobel Laureate in chemistry)

H.E. Dr. Khaled S. Al-Sultan, Rector of KFUPM, and Ambassador Shigeru Endo at the commemorative reception

In celebration of the commemorative symposium, a reception was held on the day before the symposium at a hotel in Al Khobar City, with the attendance of many key figures representing the oil industry in Saudi Arabia. They included H.E. Dr. Al-Sultan, Rector of KFUPM; Mr. Abdullah S'aadan, Vice President of Saudi Aramco; Mr. Omar Abdulhamid, Manager R&D; and H.E. Mr. Yahiya J. Shinawi, Director General, Ministry of Petroleum and Mineral Resources, Eastern Province Branch. Members on the Japanese side included H.E. Mr. Shigeru Endo, Japanese Ambassador to Saudi Arabia, and relevant parties from Japanese companies in Saudi Arabia. Ambassador Endo delivered a congratulatory speech on the 20th holding of the joint symposium, and expressed his expectations that Japan and Saudi Arabia will continue to strengthen and develop their mutual relationship in the future.

JCCP also hopes this symposium will continue to serve an important role in providing opportunities for the transfer of useful information to Saudi Arabian researchers, and in strengthening technical cooperation between Japan and Saudi Arabia.

The names and presentation themes of the Japanese researchers are as follows.

1) Dr. Koichi Eguchi, Graduate School of Engineering, Kyoto University
   Presentation theme: Development of solid-oxide fuel cells and catalytic reaction for fuel

flexibility

2) Dr. Takayuki Komatsu, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology
Presentation theme: Catalytic cracking of paraffins on zeolite catalysts for the production of light olefins

3) Dr. Junji Muramatsu, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University
Presentation theme: Preparation of well-crystallized Pd20Te7 alloy nanoparticulate catalyst highly active for 1,4-DABE synthesis by butadiene acetoxylation

4) Dr. Atsushi Ishihara, Graduate School of Engineering, Mie University
Presentation theme: Reactivity of amorphous silica-alumina prepared by the sol-gel method as a matrix in catalytic cracking

5) Mr. Noriyuki Shintani, Researcher, Research Institute, Cosmo Oil Co., Ltd.
Presentation theme: Techniques for octane number enhancement in FCC gasoline

Courtesy visit to Dr. Sahel Abduljauwad, Vice Rector of KFUPM (right: Mr. Morihiro Yoshida, Managing Director of JCCP; center: Mr. Koichi Eguchi, leader of the Japanese speakers)

6) Mr. Satoshi Takasaki, Researcher, Fuel Research Laboratory, Central Technical Research Laboratory, Research & Development Division, JX Nippon Oil & Energy Corporation
Presentation theme: FCC gasoline desulfurization reducing octane number loss

<by Koichi Io, Technical Cooperation Dept.>

Technical Cooperation

The 12th Kuwait-Japan Joint Symposium

JCCP and Kuwait Institute of Scientific Research (KISR) sponsored the 12th Kuwait-Japan Joint Symposium on "Innovations in oil refining processes" on January 18 and 19, 2011. The symposium is held annually in Kuwait on themes alternating between the process catalyst field (heavy oil processing, desulfurization, new fuels) and the refinery equipment maintenance field (corrosion, inspection, materials). Implemented on commission by the Japan Petroleum Institute (JPI), this year's symposium featured presentations by five Japanese lecturers.

The symposium opened with words of greeting from Mr. Asaad A. Al-Saad, Deputy Managing Director, Mina Al-Ahmadi Refinery, Kuwait National Petroleum Company (KNPC), and Dr. Naji Al-Mutairi, Director General of KISR, on the Kuwaiti side; and from H.E. Mr. Yasuyoshi Komizo, Japanese Ambassador to Kuwait, and Dr. Takashi Tatsumi, Professor at the Tokyo Institute of Technology and leader of the Japanese speakers, on the Japanese side.

At the symposium venue

Ambassador Komizo noted that this year marks the 50th year of diplomatic relations between Japan and Kuwait, and among the various commemorative events being planned by Japan, he said that this symposium

Dr. Naji Al-Mutairi, Director General of KISR

Mr. Asaad A. Al-Saad, Deputy Managing Director, Mina Al-Ahmadi Refinery

Ambassador Yasuyoshi Komizo

holds significant meaning as the first of such events. The Ambassador also recognized the remarkable growth of KISR, which initially started out as a research institute under the Japanese company, Arabian Oil Company, Ltd., and has since expanded and developed into the comprehensive institute that it is today. He also expressed his hope that KISR will continue to engage in technical cooperation with Japan and achieve even greater development.

The symposium featured a total of 15 speeches and presentations. The Japanese side gave one keynote speech and five presentations, which included presentations by members of JCCP technical cooperation projects in Kuwait, and the Kuwaiti side gave two keynote speeches and seven presentations. Approximately 60 people attended the symposium, including 40 from the Kuwaiti oil industry.

JCCP hopes that the symposium will continue to contribute to promoting technical exchanges between Japan and Kuwait.

The names and presentation themes of the Japanese researchers are as follows.

1) Dr. Takashi Tatsumi, Chemical Resources Laboratory, Tokyo Institute of Technology
Presentation theme: Improvement of ZSM-5 catalyst for cracking of naphtha

2) Dr. Sachio Asaoka, Faculty of Environmental Engineering, The University of Kitakyushu
Presentation theme: Selective conversion of n-paraffins to gasoline fraction on metal/nano-sized oxide/zeolite hybrid catalyst

3) Dr. Miki Niwa, Faculty of Engineering, Tottori University
Presentation theme: Characterization and catalytic cracking activity of USY zeolite

4) Dr. Takao Masuda, Graduate School of Engineering, Hokkaido University
Presentation theme: Selective production of intermediate species of reaction in series using catalytic zeolite membrane as contactor

5) Mr. Yoji Sunagawa, Chief Researcher, Advanced Technology Research Laboratories, Idemitsu Kosan Co., Ltd.
Presentation theme: Development of zeolite hydrocracking catalyst and system for resid hydrodesulfurization unit

<by Koichi Io, Technical Cooperation Dept.>

Personnel Change

Technical Cooperation Department

Outgoing Personnel

Kazuhisa OKUMURA

Announcement

On behalf of JCCP, the editor of *JCCP NEWS* thanks you deeply for your heartfelt messages of concern and encouragement following the Tohoku-Pacific Ocean Earthquake.

Thank you for reading *JCCP NEWS*.
Please feel free to contact us with any comments, requests, or inquiries. Your feedback is greatly appreciated.
Please also inform us by e-mail if and when there has been any change in your position or address.

JCCP Administration Dept., Planning & Public Relations Group
Hisayoshi Tanda, General Manager [tanda@jccp.or.jp]
Masumi Kitahara, Manager [kitahara@jccp.or.jp]

Japan Cooperation Center, Petroleum (JCCP)

Headquarters
Sunshine 60 Building 58F, 3-1-1 Higashi-Ikebukuro, Toshima-ku, Tokyo 170-6058, Japan

• Administration Department	TEL. +81-3-5396-6000	FAX. +81-3-5396-6006
• Operations Department	TEL. +81-3-5396-6001	FAX. +81-3-5396-6006
• Training Department	TEL. +81-3-5396-6909	FAX. +81-3-5396-6006
• Technical Cooperation Department	TEL. +81-3-5396-8021	FAX. +81-3-5396-8015

Overseas Offices

• Middle East Office
#904, Al-Ghaith Office Tower, Hamdan St.,
P.O. Box 51828, Abu Dhabi, U.A.E.
TEL. +971-2-627-4410 FAX. +971-2-626-2166

• Riyadh Office
Al Oula Building, 5th Floor, Flat No.508
Al Mohamadiya, King Fahd Road
P.O. Box 61356, Riyadh 11565, Kingdom of Saudi Arabia
TEL. +966-1-207-9540 FAX. +966-1-207-9539

URL: http://www.jccp.or.jp E-mail: webmaster@jccp.or.jp