Japan Cooperation Center, Petroleum

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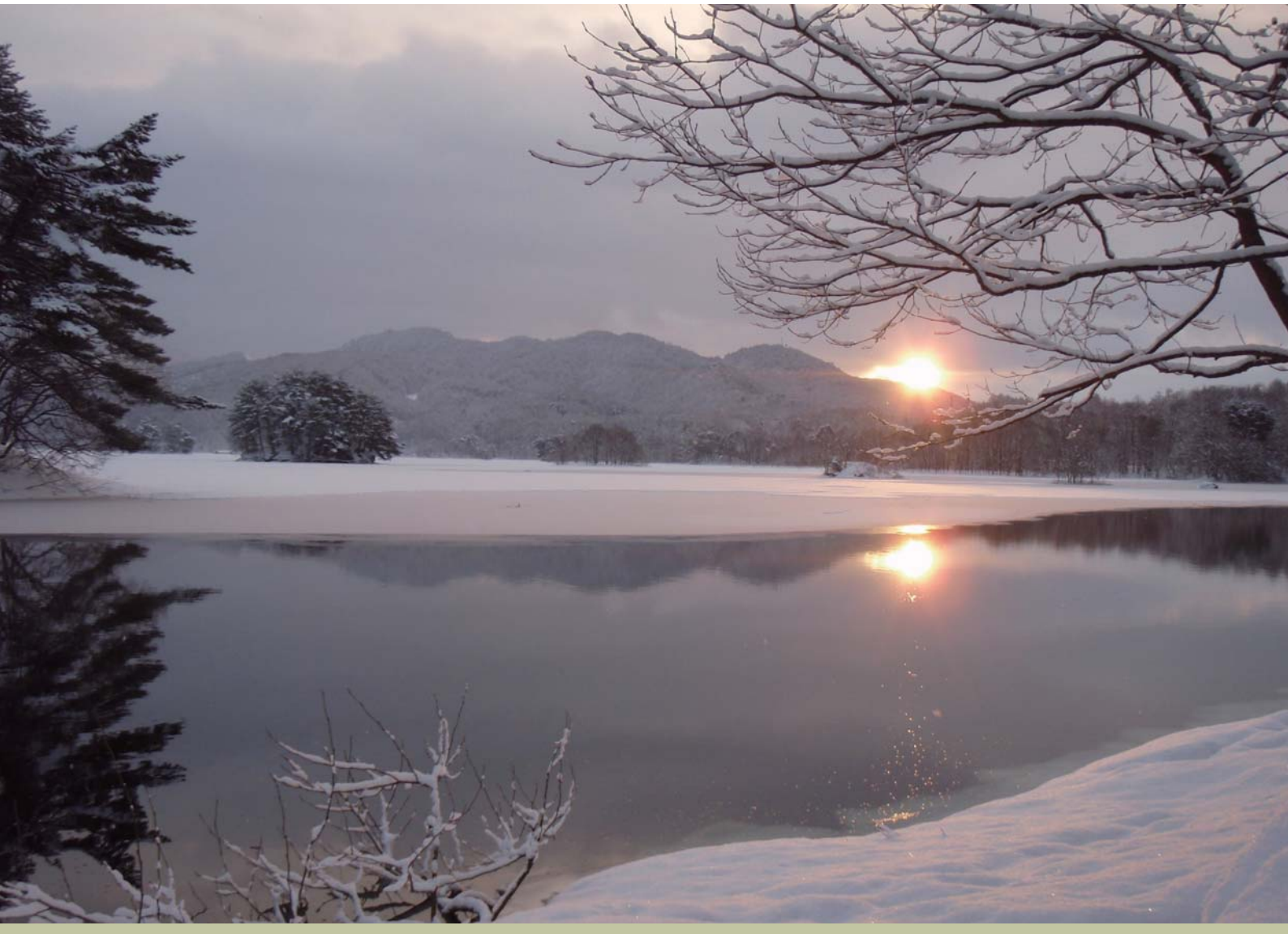
Topics



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Cover photo
Taken by: Minoru Horike, Training Dept.
Location: Ura-Bandai
Date: Late February 2012

Special Message

H.H. Dr. Turki Saud Mohammed Al-Saud
Vice President for Research Institutes
King Abdulaziz City for Science and Technology (KACST)

H.H. Dr. Turki was born to the royal family of the Kingdom of Saudi Arabia. He has served as Chairman of the Supervisory Committee of the National Science and Technology Plan and other important posts, and plays a central role in the development of science and technology in Saudi Arabia. Possessing a deep understanding of Japan, Dr. Turki has also supported JCCP activities in Saudi Arabia over many years. On occasion of JCCP's 30th anniversary, His Highness has graciously complied with our request to receive a commemorative message from him, as presented below.

I am honored to be invited to write a message on the 30th anniversary of Japan Cooperation Center, Petroleum (JCCP). In June of 2008 I had the privilege to visit Japan and the JCCP headquarters on the invitation of the JCCP. During my stay in Japan, the JCCP arranged for me a visit to the Petroleum Refining Research & Technology Center at Japan Energy Corporation; the Earth Remote Sensing Data Analysis Center (ERSDAC); Toyota Motor Corporation; and the national Institute of Advanced Industrial Science and Technology (AIST). I was delighted by the fruitful discussions that I had and impressed by technology that I saw.

During my visit we also discussed the cooperation between KACST and JCCP, resulting in a project, started in 2006, to utilize the Interferometry Synthetic Radar (InSAR) to map surface deformation in Saudi Arabia. I am glad to say that the Saudi researchers got some training on InSAR data analysis in Tokyo. By the end of 2008 the InSAR project was completed and we started another endeavor to map three dimensional deformation below the earth surface utilizing Accurately Controlled, Routinely Operated, Signal System (ACROSS). Its aim was to complement the first project and to develop a complete system for monitoring surface and subsurface deformation. In 2012 KACST and JCCP jointly organized an international workshop and invited local, regional and international speakers to jointly present their scientific achievements on surface and subsurface monitoring. Participant were invited to visit the ACROSS field site and they were amazed by the achievements.

Looking back I believe that the cooperation between KACST and JCCP has been very fruitful and will have an impact on future surface and subsurface monitoring technologies. I also believe the results will serve Japan and Saudi Arabia and strengthen our cooperation ties.

JCCP Receives a Visit by Dr. Al-Bemani, Vice Chancellor of SQU (Oman)

On October 17, 2012, JCCP received a visit by H.E. Dr. Ali bin Saud Al-Bemani, Vice Chancellor of Sultan Qaboos University (SQU), H.E. Mr. Khalid Al-Muslahi, Ambassador of the Sultanate of Oman, and Mr. Khalifa Bin Hamoud Al-Tobi, Director of the President's Office at SQU. The Chancellor of SQU is H.M. Sultan Qaboos Bin Said, the absolute ruler of the Sultanate, but Vice Chancellor Al-Bemani is essentially the head of the university. At JCCP, the distinguished visitors were warmly welcomed by Mr. Morihiro Yoshida, Managing Director, as well as Mr. Hideki Nomura, General Manager, and Mr. Yukiteru Watanabe, Deputy General Manager, both of the Technical Cooperation Department, and staff members.

Dr. Al-Bemani has played a central role in the implementation of JCCP technical cooperation projects at SQU over the years, to the extent that the university has become JCCP's major counterpart in Oman. He has otherwise contributed enormously to the cooperative relationship between SQU and JCCP. In particular, the joint technical cooperation project with SQU on "Treatment & Utilization of the Oilfield Produced Water in Oman (Phase I)," which was completed last year, has received acclaim in Oman, and was featured by a number of local media, as well as by NHK in Japan.

Dr. Al-Bemani has also been instrumental in implementing the annual Joint GCC-Japan Environment Symposium. In the three times that the symposium has been held in Oman, he has taken time from his busy schedule to provide his full cooperation, from the preparation to the actual running of the symposium, and has brought the events to a successful close. Dr. Al-Bemani also contributed as a speaker to the successful implementation of the symposiums held in Oman in February 2000 and in UAE in February 2001.

Tour of training facilities at JCCP

Dr. Al-Bemani (center); H.E. Mr. Khalid Al-Muslahi, Ambassador of Oman (second from right); and Mr. Khalifa Bin Hamoud Al-Tobi, Director, President's Office, SQU (right)

The main purpose of Dr. Al-Bemani's recent visit to Japan was to give a lecture at the Special Grand Lecture Meeting at the 40th Anniversary of the Establishment of Diplomatic Relations between the Sultanate of Oman and Japan. Despite his busy agenda during his short stay in Japan, Dr. Al-Bemani's visit to JCCP was realized by his strong desire to do so. In his meeting with Mr. Yoshida, he thanked JCCP for the technical cooperation projects that have been implemented in Oman to date, and expressed his wish to further develop the friendly relationship between SQU and JCCP through technical cooperation projects, stressing the significance of JCCP activities to SQU. Dr. Al-Bemani also took a tour of the training facilities at JCCP Headquarters, including the process simulators that are used for hands-on training, and deepened his understanding of JCCP training programs.

Among the Arab countries, Oman is said to be the one with the least time difference from Japan, and the closest one to Japan in terms of straight-line distance by sea or air. Moreover, common to both countries is their love of flowers and the fact that they are both safe, peaceful nations. JCCP wishes to contribute in any way it can to promote further technical exchanges and deepen the friendly bond between the two countries.

<by Mieko Onai, Technical Cooperation Dept.>

JCCP Receives a Visit by Mr. Fuad Al Zayer from the IEF

On September 18, 2012, JCCP received a visit from Mr. Fuad Al Zayer, Coordinator, Energy Data Transparency, International Energy Forum (IEF), during his visit to Japan to attend the LNG Producer-Consumer Conference, sponsored by the Ministry of Economy, Trade and Industry and the Asia Pacific Energy Research Centre, on September 19. At JCCP he was warmly welcomed by Mr. Masataka Sase, Executive Director, Mr. Morihiro Yoshida, Managing Director, and Mr. Mitsuyoshi Saito, Counselor.

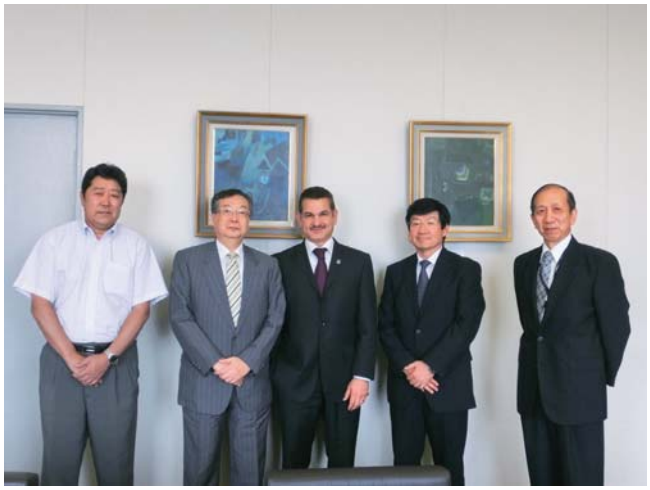
The IEF was established in 1991 as an international institution that aims to promote mutual dialogue and understanding between energy-producing and consuming countries. Its secretariat is based in Riyadh. The Forum consists of 89 member countries at present, which together account for 90% of the world's oil and gas production and consumption. This means IEF practically comprises almost all countries that are directly related to the global supply and demand of oil and gas.

Among its main activities, the IEF convenes a biennial gathering of energy ministers from its member countries to discuss energy issues of concern to the global community, as well as a biennial gathering of CEO-level leaders to promote dialogue among energy companies in member countries. It also gathers basic information on key energy indicators such as oil demand, supply and inventories from its member countries and disseminates the information on the JODI (Joint Organization Data Initiative) website (http://www.jodidata.org) to provide global access to accurate information and promote proper judgment of energy situations. The IEF's consistent activities have helped deepen mutual understanding among oil-producing and consuming countries, and have greatly contributed to the stabilization of energy supply and demand over the past 20 years.

JCCP visited the IEF Secretariat for the first time in November 2011, and thereafter slowly but steadily nurtured its relationship with the Forum. On the occasion of Mr. Al Zayer's recent visit to Japan, JCCP members explained JCCP's functions and achievements using a DVD and PowerPoint slides, and provided a tour of the training facilities at JCCP Headquarters. As his visit coincided with the commencement of two regular courses, which included four participants from Saudi Arabia, Mr. Al Zayer took some time to exchange a few words with the participants. As a whole, Mr. Al Zayer's visit provided an ideal opportunity to promote greater understanding of JCCP's functions and achievements by the IEF.

As both the IEF and JCCP are organizations that aim to foster greater mutual understanding between oil and gas consumers and producers, JCCP hopes to continue holding exchanges with the IEF into the future.

<by Hisayoshi Tanda, Administration Dept.>



Mr. Fuad Al Zayer, Coordinator, Energy Data Transparency, IEF (center)

Exchanging words with regular course participants from Saudi Arabia

Regular Course on Essential Petroleum Technologies in the Future

A regular course on Essential Petroleum Technologies in the Future was held from May 8 to 25, 2012.

1. Background and Intention

As part of JCCP's effort to refine the content of regular courses as a whole, lecturers of the Training Department have been exploring and discussing new themes for regular courses that have never been offered before. This particular course was based on the existing Essential Petroleum Technology course, but was refined by incorporating several years of participant feedback, as well as the results of an analysis of technical fields of interest among participants of courses provided by the Process Group. The renewal aimed to introduce the status of Japan's initiatives related to three key topics that are expected to become increasingly significant in the future—heavy oil treatment, biofuels and hydrogen—and to present a technical direction toward which the global oil industry ought to proceed as one in the future. To clarify this perspective, the word "future" was added to the previous title, and the content was reviewed as appropriate to the new title, "Essential Petroleum Technologies in the Future."

Several new topics were added to the course, including hydrogen energy, fuel cell vehicles, bio-ethanol, and heavy oil treatment (Eureka Process®). New approaches were also introduced to practical training, and included a tour of the Advanced Technology and Research Institute of the Japan Petroleum Energy Center in Toke, Chiba Prefecture and various hydrogen station facilities and test-driving of fuel cell cars.

2. Participants

The 15 participants of the course consisted of six participants from the Middle East (five from Saudi Arabia and one from Kuwait), two from Africa (one each from Libya and Nigeria), and seven from Asia (two from Indonesia and one each from Myanmar, Pakistan, Thailand and Vietnam).

3. Training at JCCP

(1) Japan's Oil Industry

This lecture introduced the characteristics of Japan's oil industry and provided an understanding of the market potential of Japan as an export destination of oil. The concept of maintaining competitiveness in line with market principles seemed new to the participants from oil-producing countries, where most oil companies are run by the government. They also showed strong interest in the high quality of oil products in Japan and in the Japanese oil industry's efficient response to the shrinking heavy oil fraction market.

(2) World's Energy Situation and the Present Status of New Energies

(Lecturer: Mr. Mitsuyuki Maeda)

This lecture served an important function in developing a shared perspective among the participants as the starting point of the course. Participants from Saudi Arabia strengthened their awareness of their country being a leading oil producer, and deepened their concern foremost about the future energy supply situation.

(3) Refinery Profitability Improvement Simulation

<Practical training using JCCP's training simulator>

The previous course provided simulator training on the startup of an FCC unit, but this was not necessarily completely relevant to all participants in terms of their

Simulator training on the optimization of refinery equipment configuration

positions and posts. Therefore, changes were made to provide a simulation of how profitability is improved through the process of gradually adding a heavy oil cracker to a grassroots refinery.

This simulator training session was highly well received by the participants, who proposed numerous other case examples for simulation besides those that were prepared in advance by the lecturer.

(4) Transportation of Hydrogen as an Organic Compound

(Lecturer: Dr. Yoshimi Okada, Chiyoda Corporation)

The means for transporting hydrogen will become a major issue in building a hydrogen energy society in the future. This lecture therefore provided an understanding of the advantages of handling hydrogen in liquid form and the benefits of hydrogen as a new, exportable energy source to take the place of crude oil.

(5) Life Cycle Assessment of Biofuel

(Lecturer: Dr. Masayuki Sagisaka, National Institute of Advanced Industrial Science and Technology)

The introduction of biofuel is predicated on the carbon neutrality concept. However, the process of commercializing biofuel actually requires the use of a significant amount of energy, such as for the cultivation, harvesting and processing of raw materials (irrigation water, fertilizer), as well as for the delivery of the final product. Thus, this lecture emphasized that an optimal utilization of bioresources can only be achieved by gaining proper understanding of this disadvantage in addition to their advantages as an alternative to fossil fuels and as a means for strengthening energy security. It also discussed bioresources in relation to other important issues, such as the acquisition of agricultural land and competition with food production, and provided an important awareness that biofuel is not necessarily without disadvantages.

(6) Bioethanol Production from Wood Materials

(Lecturer: Dr. Daisuke Taneda, JGC Corporation)

Bio-refinery Concept

(Lecturer: Mr. Makoto Ikeou, JGC Corporation)

Bioethanol is produced by a fermentation method using mainly corn or sugar cane. With this type of first-generation bioethanol, increasing fuel production means decreasing food supply, which food resource-poor countries such as Japan cannot afford to do. Based on this awareness, studies are being conducted on the production of second-generation bioethanol from algae, grain straws and woody materials. Among these materials, this lecture focused on the production of bioethanol from woody materials, as well as examined the production of fuel oil (isobutanol) and chemical products according to a chemical synthetic procedure using biomass as starting material.

(7) Building Hydrogen Infrastructures

(Lecturer: Mr. Kazuhiro Kikuchi, Japan Petroleum Energy Center)

This lecture discussed scenarios for the construction of hydrogen infrastructures toward the dissemination of fuel cell vehicles, regulations on the handling and safety of hydrogen, and the supply of high-purity hydrogen for fuel cell vehicles.

(8) Development Trend and Future Outlook of Fuel Cell Vehicles

(Lecturer: Mr. Katsuhiko Hirose, Toyota Motor Corporation)

Mr. Hirose, who works at the forefront of technical development at Toyota Motor Corporation, gave a highly impressive presentation on the development trend and future outlook of fuel cell vehicles in Japan based on the participants' onsite experience in test-riding in a fuel cell vehicle at Kyushu University and in a fuel cell bus at Meitetsu Bus Co., Ltd. As the leading expert in the development of hybrid vehicles at Toyota Motor, Mr. Hirose also emphasized that the fuel cell vehicle could not have been realized without the development of the hybrid technology, and impressed upon the participants the importance of technical development.

(9) Presentations by the participants

To engage the participants in interactive discussion, each participant was asked to prepare and give a presentation on an energy-related topic for mutual discussion among the entire group.

The topics varied according to the country of the participant, but it was apparent that the majority of countries have strong interest in renewable energies such as solar power generation, wind power generation and bioethanol. There were also countries that aim to achieve advanced technologies such as for desulfurization of supercritical water, and as a whole, the presentations provided highly meaningful references for selecting future training themes.

4. Offsite Training

(1) Cosmo Oil Co., Ltd., Research and Development Center

Training on the development of heavy oil catalysts has conventionally been the main feature of training at Cosmo Oil's Research and Development Center, but three new themes have been added this year, including the BTL technology (biomass-to-liquid technology: technology for producing liquid fuel from biofuel through chemical synthesis), bioethanol production by fermentation, and advancement into new sectors (agricultural chemicals). The tour of the laboratory elicited highly active discussions and was strongly appreciated by all participants.

(2) Fuji Oil Company, Ltd., Sodegaura Refinery

Fuji Oil's Sodegaura Refinery was added to the program this year as a new training destination. The refinery is famous for its development and commercial operation of the Eureka Process®, a type of coker process that keeps the pitch in liquid state for easy handling and allows it to be sold as refinery boiler fuel or as a coke binder when cooled and solidified. Fuji Oil is the only company in the world that operates this process.

The refinery also takes measures to conserve energy through pinch energy analysis, and has introduced a 4000kW Kalina-cycle power plant (uses ammonia as a working fluid), the largest of its kind in the world, to make effective use of low-temperature waste heat that has had little use up to now.

(3) Japan Petroleum Energy Center, Advanced Technology and Research Institute (ATRI)

ATRI was also added to the program this year as a new training site. Japanese oil companies compete with each other, but also work together as an industry in addressing issues that are too complex for each company to tackle on its own. Among these issues, ATRI provided knowledge of the practical evaluation of biofuels (gasoline, diesel fuel) and petroleomics (examination of heavy oil upgrading based on detailed evaluation of heavy oil composition). The laboratory facility employing a chassis dynamometer perhaps appeared new to the participants, as probably no such facility exists in oil companies in the Middle East and Asia.

(4) Kyushu University, Itoshima Hydrogen Town

At Kyushu University, the participants were given test rides in a fuel cell car to experience the potential of hydrogen fuel as a power source. Knowledge was also provided of hydrogen container materials. In Japan, container materials are severely restricted by the High Pressure Gas Safety Act (formerly called High Pressure Gas Control Act). As the restrictions pose an obstacle to making fuel cells lighter and reducing cost, the university is conducting research on low-cost materials evaluation for greater economic efficiency of fuel cells. In particular, the research focuses on the use of hydrogen obtained from water electrolysis and converting energy to hydrogen in order to absorb the fluctuations of natural energies (such as solar power and wind power generation, which produce a large difference in energy generation as a result of changes in natural conditions).

At Itoshima Hydrogen Town (formerly known as Maebaru Hydrogen Town), the participants examined the actual operation of a solid-oxide fuel cell installed in each residence. Here, hydrogen is produced using a concentrated supply of propane gas from Saibugas Co., Ltd. and equipping each fuel cell power generator with a hydrogen manufacturing unit . Waste heat is recovered in the form of hot water in a small cogeneration system.

Fukuoka Prefecture is involved in the selection of research themes at Kyushu University and in the operation of a hydrogen town project in a number of locations in the Kyushu region, and is aiming to attract researchers and manufacturing industries in the hydrogen sector as part of its challenge to develop new

Participants listening to an explanation of mechanisms under the hood of a fuel cell car at Kyushu University

industries. It thus offered its cooperation in this offsite practical training program through the New Industries and Technologies Division in the Fukuoka Prefectural Government.

(5) Kitakyushu Hydrogen Town

At Kitakyushu Hydrogen Town, hydrogen is supplied to each facility by obtaining by-product hydrogen from a steel mill, refining it in a hydrogen station (PSA unit), and distributing it through high-pressure gas pipes. A manager from JX Nippon Oil and Energy Corporation, the company that actually runs the facilities at the hydrogen station, provided invaluable information about the safety and daily management of the facilities.

At a hydrogen station in Kitakyushu City:
The car behind the participants on the left is a fuel cell car used for business by Fukuoka Prefecture.

(6) Meitetsu Bus Co., Ltd. (fuel cell bus)

Meitetsu Bus offered a test ride in a fuel cell bus and provided an understanding of how the practical application of fuel cells is expanding from the compact passenger car sector to the public transportation sector as well. Prior to the test ride, a manager from Toyota Motor Corporation, the development company, provided training on the environmental performance and maintenance of fuel cell buses using an actual fuel cell bus in standby at a Meitetsu Bus service office.

(7) Central Japan International Airport (Centrair) Hydrogen Station

To provide practical training at hydrogen stations that use different hydrogen supply methods, a visit to the hydrogen station at Central Japan International Airport was selected as one of this course's offsite training

At a hydrogen station in Central Japan International Airport

destinations. The hydrogen station there produces hydrogen in an on-site type of hydrogen manufacturing equipment (operation of a small hydrogen production unit located adjacent to the hydrogen station) using city gas supplied by Toho Gas Co., Ltd. This hydrogen station was selected as a potential business model of an oil company that produces hydrogen.

5. Observations

This course was designed by making major changes to the previous course based on the views of the training program renewal committee in the Training Department. As emphasis was placed on selecting diverse offsite training destinations, the participants had to keep up with a busy schedule, but gained a good understanding of technical development in Japan.

In an evaluation form they were asked to complete after the end of the course, a large majority of the participants rated five specific themes as bearing high importance: (1) alternative fuels, (2) heavy oil upgrading, (3) energy conservation, (4) quality control, and (5) desulfurization and FCC technologies for clean fuel production. Participants from a number of countries also expressed a request for training on solar and wind power generation.

We will continue to keep our ears open to the needs and requests of oil-producing countries and examine themes in a flexible manner.

<by Bunsuke Kariya, Training Dept.>

Implementation of a Long Course: Practical Training for Young Instrumentation and Control Engineers

The long course on Practical Training for Young Instrumentation and Control Engineers was newly offered two years ago and again last year, both times as a customized program for specified countries. It was implemented again this year, but as a regular course, as the course has become well established through the previous two times it was implemented.

Intended for young instrumentation and control engineers, the course aimed to provide a wide range of instrumentation and control technologies, from basic technologies to practical engineering technologies, mainly through hands-on training. Instrumentation and control are generally considered different fields, but they are essentially closely related to each other. Based on this awareness, this course was designed to enable participants from diverse fields to gain a broad perspective and benefit their future.

To improve the course this year, the content of the past two times the course was offered was reviewed, and new programs were added. As a result, the course was extended by seven days compared to last year, and was held over a period of 39 days. Where the course spanned a total of 32 days last year, it ran for 39 days (29 working days) this year, from June 5 to July 13, 2012.

1. Course Overview

1.1 Participants

A total of 27 applications from 18 countries were received for the 12 openings of the course offered for the first time as a regular course. In consideration of their age and qualifications, 16 participants from 14 countries were selected. The course was long in duration and included brief trips to many offsite training destinations, but the participants remained in good health and actively fulfilled all activities on the agenda. They also demonstrated strong enthusiasm in acquiring technologies, and rigorously applied themselves to their training with curious and inquisitive minds.

1.2 Course Content

The course placed emphasis not only on lectures, but also on demonstrations and hands-on practice, and was designed to provide knowledge of basic to applied technologies, roughly equally divided between instrumentation topics and control topics. The following programs were also examined and implemented as new features of the course this year.

- Offsite training on the control system of a power generation facility (only a lecture was provided last year)
- Hands-on practice on the procedure for computer-based instrument design from the perspective of a contractor, for acquisition of wide-ranging technologies (not implemented last year)
- Discussion on the maintenance of instrument devices (only partially implemented last year)

(1) In the instrument section, participants engaged in practical training on the basics of instrumentation, from the measurement of flow rate, fluid level, temperature and pressure, to the selection of control valves. Then, as applied issues, they received

Practical training held in the CAI room

No. 6 simulator training

Practical training on the overhaul of a fluid level meter

Practical training on the overhaul of a flow meter

practical training in equipment maintenance and the series of activities from basic design to onsite installation work, in addition to lectures on advanced field bus technology and wireless instrument.

(2) In the control section, exercises in control theories provided an understanding of the latest control technologies, including model predictive control, refinery information systems, DCS topics, safety instrument systems, and the control of power generation facilities.

(3) The following demonstrations and practical training were also implemented to provide an understanding of control theories and practice.

1) Hands-on practice using computers and a DCS system
Hands-on practice in control theory / hands-on practice of an operation support system / demonstration of multivariable predictive control

2) Hands-on practice using an actual machine equipped with a safety instrumentation system

3) Hands-on practice of instrumentation engineering using a computer

4) Hands-on practice of DCS logic creation

Practical training on the overhaul of a control valve

5) Demonstration of the overhaul of instrumentation devices (fluid level meter, flow meter, control valve)

(4) Training at JCCP, training by external lecturers, and offsite training were provided as follows.

1) Training at JCCP (June 7, 8 & 20; July 12)
Process control theory and practice / process control practice / discussion on the maintenance of instrumentation devices

2) Training by external lecturers (7 companies)

- Osaka Systems Planning, Inc. (June 11)
Overview of a refinery information system
- Yokogawa Electric Corporation (June 12)
Overview and practice of an operation support system
- Invensys Process Systems Japan, Inc. (June 19)
Overview and practice of safety instrumentation systems
- JGC Corporation (June 26)
Overview of model predictive control and simulator practice
- Toyo Engineering Corporation (June 27 & 28)
Overview of instrumentation engineering design
- Chiyoda Corporation (July 6 & 9)
Instrument engineering practice
- JGC Corporation (July 10 & 11)
Instrument engineering practice using a computer

3) Offsite Training (9 companies, 11 locations)

- Yokogawa Electric Corporation, Mitaka Headquarters (June 12 & 13)
Overview and practice of the latest DCS system and software
- Yokogawa Electric Corporation, Kofu Plant (June 14)

Training in the control room of a power plant

No. 5 simulator training

DCS system configuration practice

Maintenance of an instrument device (oscillator)

- Endress+Hauser Yamanashi Co., Ltd. (June 15)
  Maintenance of an instrument device (fluid level meter)
- Emerson Japan, Ltd., Mizushima Solutions Center (June 21)
  Overview of the latest DCS and wireless instrument
- Idemitsu Kosan Co., Ltd., Tokuyama Refinery (June 22)
  Refinery information and control systems
- Shimadzu Corporation, Head Office and Sanjo Works (June 25)
  Overview of the latest analyzers
- Oval Corporation, Yokohama Operation Center (June 29)
  Maintenance of an instrument device (flow meter)
- Kyushu Electric Power Co., Ltd., Omuta Power Station (July 2)
  Control systems for power generation facilities <1>
  (incl. lecture on control systems by Yokogawa Electric Corporation)
- Tobata Co-operative Thermal Power Company, Inc. (July 3)
  Control systems for power generation facilities <2>
- Azbil Corporation, Fujisawa Technology Center (July 4)
  Practical training on DCS and safety instrument engineering
- Azbil Corporation, Shonan Factory (July 5)
  Overview of instrument devices and practical maintenance training (control valves)

2. Observations

The course not only covered a lengthy 39 days, it also introduced the participants to various places in the Kanto, Chugoku and Kyushu regions, and featured lectures and practical training on a wide range of topics related to instrumentation and control. It was completed successfully owing to the sincere cooperation of all offsite training destinations and external lecturers, as well as to the outstanding qualities and determination of each participant. Particularly impressive were the participants' proactive efforts to acquire technologies and their ability to fit into Japanese society.

When asked their opinion of the course, the participants expressed a fair degree of satisfaction, but in the course review, some suggested changes in the total duration of the course and its content.

3. Future Issues

While the course will again be implemented as a regular course next year and onward, we will fully review the course content based on post-evaluation and participants' suggestions, and implement an even more practical training in the future.

<by Shigeru Matsui, Training Dept.>

Training at a model plant at a refinery

Regular Course on Safety Management for Refineries

1. Background and Aim

Safety Management for Refineries was offered for the first time in fiscal 2006 in response to rising needs for training on the subject, and has since become one of the most popular regular courses at JCCP. Intended for refinery engineers, the course aims to foster engineers with diverse skills by widely introducing the actual state of safety management in Japanese refineries and providing various perspectives on safety management techniques that support refinery operations. The safety management techniques discussed in the course included the latest plant safety design method, techniques related to risk assessment and risk management, organizations and frameworks for safety management and disaster prevention, safety education, laws and regulations related to safety and security, and maintenance management.

Additionally, a visit was made to a major insurance company in Japan to more specifically introduce and provide greater knowledge of technologies related to risk assessment and risk management also with regard to various risks including that of earthquakes.

2. Course Content

2.1 Training at JCCP

(1) Outline of Safety Management

This lecture provided knowledge of various matters that need to be understood to ensure safety management in refineries, such as the basic concept of safety management, the OHSAS 18001 standard, principal safety-related laws and regulations in Japan, various safety activities in refineries, and risk management, in relation to the organization of the entire course.

Many questions were raised by the participants regarding the meaning and effects of 5S and KYK activities, the practice of finger-pointing confirmation, and other such activities for building a safety culture.

(2) Plant Maintenance and Safety Management

This lecture covered a wide range of topics on plant maintenance and safety management, such as case examples and an analysis of causes and countermeasures to refinery facility problems, maintenance styles and management of refineries, TPM activities, and voluntary maintenance activities. Topics that particularly captured the interest of the participants as engineers in a position to ensure safety management included the following: the history and development of the maintenance management concept in Japan, which steadily evolved from breakdown maintenance (BM) to quality control (QC), preventive maintenance (PM), total productive maintenance (TPM), reliability-centered maintenance (RCM) and risk-based inspection (RBI); important perspectives on maintenance management; specific methods for reliability evaluation of facilities and RBI; and an introduction of an HDS reactor accident and other major disasters and accidents that have occurred in refineries in the past. Overall, the lecture was highly rated by all participants.

(3) Environmental Management

This lecture discussed environmental management in Japan with references to the history and background to Japan's pollution prevention efforts, an overview of laws for prevention of air and water pollution, and various processes involved in these initiatives for pollution prevention.

Environmental issues are one of the priority areas of global concern, as is apparent in worldwide initiatives to prevent global warming. As they are also issues that both directly and indirectly concern everyone, the lecture garnered strong interest from all participants.

(4) Japanese Laws and Regulations Related to Safety, Action-related Accident Prevention and Safety Education

(Lecturer: Mr. Hirotoshi Goto, Japan Association of Safety and Health Consultants)

This lecture provided an understanding of the objective and content of the Labor Standards Law and the Industrial Safety and Health Law, government policies, responsibilities of labor and management, guidelines,

and the role of the Labor Standards Inspection Office. The participants listened with strong interest to the details of Japan's initiatives for accident prevention and improvement of labor conditions through public-private cooperation as part of the effort to promote rapid economic growth.

The Japan Association of Safety and Health Consultants is an organization of experts who engage in various activities for promotion of industrial safety and health. It is also closely connected with the Japan Industrial Safety & Health Association, and is active in providing a wide range of services, including technical support, surveys and research, zero-disaster promotion activities, health and safety education, and international cooperation.

(5) Plant Safety Design and Risk Management

(Lecturer: Mr. Masatoshi Kano, HSE Systems Department, Engineering Division, JGC Corporation)

As with the lecture provided last year, one and a half days were spent discussing the concept of plant safety design, the definition of risk, and specific risk management and risk assessment methods from the perspective of an engineering company.

The lecture captured the participants' attention by providing views from the standpoint of an engineer in charge of actual plant design and construction based on the latest technologies, and carried persuasive weight, coming from an engineering company operating diverse businesses around the world. With a workshop also providing practical training in the safety design of an actual plant, this lecture was as highly appreciated by the participants as it was last year.

(6) Presentations by the participants (case studies)

Two days before completion of the course, each participant gave a presentation for mutual discussions. Participants from Kuwait, Myanmar, Saudi Arabia and Vietnam gave presentations on specific cases related to safety, such as fire accidents, as well as their causes and countermeasures. They were high-level presentations that not only introduced case examples of accidents and problems, but also examined whether improvement measures have been taken and whether a safety management system has been established in response to such accidents. Active discussions also took place after each presentation.

2.2 Offsite Training

(1) Idemitsu Kosan Co., Ltd., Tokuyama Refinery

The training program at the Tokuyama Refinery provided detailed knowledge of the refinery's safety management system, with particular focus on the company-wide network that disseminates trouble/accident information, countermeasures, and troubleshooting examples. In the instrument room, even more specific explanations were given of safety activities in the refinery, and captured the participants' strong interest and attention.

At Idemitsu Kosan's Tokuyama Refinery

(2) JX Nippon Oil & Energy Corporation, Negishi Refinery

The Negishi Refinery gave a detailed overview of its refinery, safety management system, activities related to safety, earthquake response procedures, and disaster prevention system and initiatives. A lecture on the role of the joint disaster prevention center at times of large-scale fires and an introduction to the refinery's state-of-the-art fire extinguishing car for high locations were also well received by the participants.

Basic issues in safety management, such as factors that lead to trouble and accidents, readiness to avoid

At JX Nippon Oil & Energy Corporation's Negishi Refinery

such incidents, and work efficiency, were explained in an easy-to-understand fashion through questions and answers. The active participation of the participants produced many questions, and made for a meaningful and beneficial program.

(3) Yokogawa Electric Corporation, Mitaka Head Office

The training program at the Mitaka Head Office provided knowledge of the latest DCS control system (DCS Centum CS3000) with a focus on its configuration, functions and technical background, and of the latest technologies for reliability improvement and redundancy, which elicited various questions from the participants regarding the usage conditions and actual performance of the system.

The latest technologies for reliability improvement and redundancy, such as the ProSafe-RS and New SIL3 System, are highly technical and sophisticated, but reliable control systems are indispensable to stable refinery operations and emergency response. This program proved to be extremely valuable and beneficial to the participants as it provided an understanding of this important point.

At Yokogawa Electric Corporation's Mitaka Head Office

(4) Azbil Corporation, Fujisawa Technology Center

There has been a recent trend toward the standardization of alarms and particularly of DCS and process alarm management mainly in Europe and the United States, based on their experience of large plant disasters. The training program at the Fujisawa Technology Center first explained the background to the need for alarm management and an overview of the present stage in the standardization process (guidelines), and then introduced examples of alarm management using the functions of a newly installed DCS (Harmonas-DEO). As verified by the participants' many questions about the handling of system alarms, the training on alarm management systems captured their strong interest.

(5) NKSJ Risk Management, Inc., Risk Engineering Department

The lecture by the Risk Engineering Department first provided knowledge of the meaning of risk evaluation to an insurance company, the history of risk management up to the present, and the development of the BCM (business continuity management) practice, then discussed in detail the risk hazards facing companies today and technical issues on how to mitigate or provide financing against such hazards.

Explanations were also given of the factors and formulas used for evaluation risks in refineries and petrochemical units, and the methods of risk evaluation and simulation with respect to earthquake disasters.

Most participants seemed unfamiliar with the field of risk engineering, but the lecture provided a highly valuable understanding of the concepts and specific aspects of risk assessment and risk management, and elicited many questions from the participants.

At the head office of NKSJ Risk Management, Inc.

3. Summary

Due to the increasing interest in safety management, we are working hard to provide diverse responses, such as through offsite training at an insurance company. This training, in particular, has been highly appreciated every year, and seems to lend impact to the course. The course content is also reviewed every year, and in a post-evaluation of the course, many participants requested training in environment and safety technologies, such as for the treatment of contaminated water and water safety management. We will therefore take this specific request into consideration when next implementing the course.

<by Takaaki Yuasa, Training Dept.>

FY2012 JCCP Program Seminar

Seminar participants and JCCP staff

The fiscal 2012 Program Seminar was held over an eight-day period, from July 4 to 11, 2012, as part of JCCP's training program. The seminar invited to Japan managers of human resource departments from oil companies in oil-producing countries who act as JCCP counterparts, to personally experience the training program that JCCP regular course participants attend, and to individually discuss and exchange views about JCCP activities with JCCP staff for improvement of future training programs.

1. Participants

This time, the seminar was offered to countries from which there have been a small number of participants to regular courses, such as countries in Southeast Asia, Central and South America, the CIS region, and Africa, and was attended by a total of 10 members from nine organizations in eight countries. They included one each from Indonesia (Pertamina), Malaysia (Petronas), Venezuela (PDVSA), Yemen (PetroMasila), Kazakhstan (KMG) and Uzbekistan (UNG), and two each from Myanmar (MOE & MPE) and Libya (NOC). A list of the participants is provided below.

2. Seminar Content

(1) JCCP regular course experience

As JCCP counterparts do not usually have the chance to participate in a JCCP regular course themselves, the seminar provided an opportunity for them to experience the general flow of a regular course and gain a perspective on how their employees actually receive training at JCCP. For example, it provided the orientation session, opening ceremony, administrative guidance, lectures at JCCP, offsite training, fieldtrips and closing ceremony in the same manner as they are implemented in an actual course.

(2) Comprehension of Japanese-style management methods (Kaizen, Total Productive Management (TPM), etc.)

Management methods that were originally developed in Japan, such as Kaizen, TPM and small-group activities, are garnering strong interest in oil-producing countries today. Therefore, JCCP lecturers gave a lecture to provide deeper understanding of these subjects and elicit training requests, and also implemented part of an actual program for the experience.

The participants also experienced offsite training by visiting Idemitsu Kosan Co., Ltd.'s Tokuyama Refinery and observing a small-group activity being implemented at the refinery.

(3) Presentations by the participants and requests for future courses

The participants each gave a presentation on the reality of human resource development in their respective countries and what they expect of JCCP, and mutually exchanged views on the presented topics. The presentations provided an understanding of human resource development in each country, as well as drew forth general requests for future JCCP courses.

Tour of JCCP facilities

3. Summary

As mentioned above, this Program Seminar was held for JCCP counterparts from countries from which there have been a small number of participants to regular courses. As a result, even participants who were not very familiar with JCCP regular courses were able to fully appreciate the seminar and specifically discuss the possibilities of future cooperation and the content of future regular courses with JCCP staff. JCCP benefited as well from being able to exchange views directly with JCCP counterparts and lay the foundation for smoother communication in future exchanges about JCCP activities. Taking the occasion of this seminar, JCCP hopes to further strengthen its approaches to said countries and encourage their participation in future regular courses.

Lastly, we wish to extend our special thanks to everyone at Idemitsu Kosan's Tokuyama Refinery and Technical Training Center for sparing their precious time to cooperate in implementing this seminar.

<by Koichi Io, Operations Dept.>

Organization & Country	Name	Position
PERTAMINA Indonesia	Mr. Renaldi M. Nur Fattah	HSE Training Center Manager, Pertamina Learning Center
KazMunayGas National Co. (KMG) Kazakhstan	Ms. Assel Bekimova	Chief Manager of HR Administration
National Oil Corp. (NOC) Libya	Mr. Ibrahim Mansour Ahmed Jebril	Training Programs Analyst Specialist, Training & Development Dept.
National Oil Corp. (NOC) Libya	Mr. Mosbah Salem Elkanuni	Technical & Managerial Development Center Manager
PETRONAS Malaysia	Ms. Nor Ainun Binti Junid	Senior Manager, Skill Group Management
Ministry of Energy Myanmar	Mr. Tin Htut	Director, Energy Planning Department
Myanmar Petrochemical Enterprise Myanmar	Mr. Than Lwin	Deputy Director, Myanmar Petrochemical Enterprise
UZBEKNEFTEGAZ Uzbekistan	Mr. Ziyodulla Fayziev	Senior Specialist of Human Resource Department
PDVSA Venezuela	Ms. Rosa Radr Paredes	Human Resources Strategic Planning Manager
Masila Petroleum Exploration and Production Company Yemen	Mr. Nasser Mohammed Saeed Mudaiheg	HRD Manager

CPO Seminar on Energy Efficiency in the Oil Industry Held in UAE

1. Background

The Abu Dhabi National Oil Company (ADNOC) Group and JCCP jointly held a Customized Program-Overseas (CPO) Seminar on Energy Efficiency in the Oil Industry from October 1 – 3, 2012 in Abu Dhabi, UAE.

Recognizing UAE as an important crude oil supplier to Japan, JCCP has consistently promoted training programs and technical cooperation projects in the country over the years. Last year, as part of the initiative to renew JCCP training programs, JCCP held a meeting with the ADNOC Environment Subcommittee for the first time through an introduction from ADNOC's Supreme Petroleum Council. The ADNOC Environment Subcommittee governs all environment-related matters of ADNOC Group companies. Therefore, with the objective of providing programs that accurately respond to needs in oil-producing countries and of acquiring the cooperation of new counterpart organizations, JCCP discussed the possibility of implementing a customized program with the Subcommittee, and at a later date received a formal request from the Subcommittee to co-sponsor a CPO on energy efficiency in the oil industry.

To deliver a program that would respond to the individual needs of ADNOC Group companies, the ADNOC Environment Subcommittee organized a preparatory team within the Group and carefully planned lecture topics in consultation with JCCP. JCCP has heretofore implemented training programs with single state-run oil companies in each country, but this was the first time it conducted a program in cooperation with a cross-sectional organization of a state-run oil company.

Seminar lecturers and Mr. Hazem Abuahmed of ADNOC (far left)

Also as a first attempt of its kind, JCCP took the occasion of the seminar to introduce JCCP technical cooperation projects that are being implemented in UAE, and communicated an overall picture of JCCP activities.

In oil-producing countries, recent increases in domestic energy consumption have strengthened interest in technologies and initiatives related to improving energy efficiency. Amid this trend, companies of the ADNOC Group have also begun to implement various promotional activities in the environment and energy areas, as encouraged by the Environment Subcommittee. Their strong focus is also being directed to the latest technologies and initiatives for project development.

Meanwhile, Japanese companies possess advanced technologies for efficient energy use, effective utilization of CO_2, and utilization of renewable energies, and have expressed interest in introducing and applying these technologies to GCC oil-producing countries. Thus, the recent seminar came to be held as a JCCP training program with the participation of expert members from ADNOC Group companies. This time, in particular, the details and results of the seminar were reported to members of the Group's HSE Steering Committee after completion of the seminar.

2. Seminar Content

In order to ensure a practical seminar as requested by the ADNOC Group, the number of participants was limited to 30 to 40 participants. The selected members included a good representation of energy- and environment-related experts from the ADNOC Group's 12 affiliated companies, and researchers from UAE University who specifically requested to attend the seminar.

The duration of the seminar was set for three days. The first and second days mainly featured lectures, with a focus on Japan's advanced technologies related to energy efficiency, and the third day to presentations by ADNOC Group members and an interactive workshop that included group discussions.

Owing to careful designing in consultation with the ADNOC Environment Subcommittee as the counterpart, the seminar was attended by a good balance of participants from each ADNOC Group company, and was carried out effectively. In close consideration of the Group's subjects of interest, it introduced energy efficiency technologies developed by the Japanese oil industry and private companies, and discussed the possibility of their application to the ADNOC Group.

Lecturers on the Japanese side were from JCCP (Arii), JOGMEC (Mr. Miyake), Mitsubishi Heavy Industries Ltd. (Mr. Yagita), JGC Corporation (Mr. Aoyama), Chiyoda Corporation (Mr. Matsuda), Yokogawa Electric Corporation (Mr. Naito), and Solar Frontier K.K. (Mr. Uemura). They were joined by Prof. Abbas (UAE University) and Mr. Yamazaki (Kawasaki Heavy Industries, Ltd.) as experts from UAE .

The first day of the seminar opened with a speech by Mr. Abdul Qader Al Kamali, GASCO, VP, HSE. As chairman of the ADNOC Environment Subcommittee, Mr. Al Kamali stressed the ADNOC Group's strong commitment to achieving environmental and energy efficiency, and explained the Group's initiatives and policies.

(1) Session 1: Energy Efficiency Measures in the Oil Industry

On the Japanese side, lecturer Mr. Arii from JCCP first gave a status report on comprehensive initiatives for energy efficiency in Japan's oil downstream sector, and introduced Japan's advanced technologies for energy efficiency and their achievements. Mr. Miyake from JOGMEC then gave a general introduction of energy efficiency technologies in the oil upstream sector, with particular focus on technologies for flare gas reduction and effective gas utilization. These two lectures provided a comprehensive perspective of energy and environmental initiatives in the oil industry that is essential for managing seeds of element technologies.

Moreover, roughly classifying element technologies for promoting energy efficiency into process technologies and utility technologies, Mr. Aoyama from JGC Corporation gave an introduction based on new process

Mr. Abdul Qader Al Kamali, Chairman of the ADNOC Environment Subcommittee

technologies, and Mr. Yagita from Mitsubishi Heavy Industries gave an introduction of energy efficiency technologies related to utilities (boilers and turbines). The participants acquired knowledge of the latest technologies in the two categories and learned about improving energy efficiency from both the engineering and equipment aspects.

This part of the session elicited many questions from the floor, and was well received for providing different approaches and perspectives for achievement of energy efficiency.

(2) Session 2: Latest Energy Efficiency Technologies

This session provided an understanding of the expanding development of technologies that could be applied to improving energy efficiency in the oil industry, by introducing the diverse initiatives of

Seminar scene

Japanese companies. First, Mr. Yamazaki from Kawasaki Heavy Industries introduced the latest advancements in regional air-conditioning and absorption cooling technologies, engine technologies, and others, followed by Mr. Uemura from Solar Frontier, who introduced the latest photovoltaic technologies and JCCP technical cooperation projects implemented in UAE. Prof. Abbas from UAE University then introduced the JCCP technical cooperation project on utilization of fuel cell technology, and Mr. Naito from Yokogawa Electric lectured on the approach and economic efficiency of achieving energy efficiency through the use of advanced process control technologies.

JCCP technical cooperation projects were introduced in a training program for the first time, but the broad range of initiatives implemented by JCCP and member companies and the possibility of introducing those initiatives to UAE garnered the participants' avid interest.

Active questions were also raised regarding individual technologies, demonstrating the ADNOC Group companies' strong interest and wish to increase energy efficiency. The seminar also captured the attention of the media, and received coverage from a Japanese TV station.

(3) Session 3: Pinch Technology and Its Practical Application

The second day's program provided training in pinch technology, an important analysis technology for promoting energy efficiency in the oil industry. The basic structure of the technology was studied in a theoretical lecture followed by hands-on training. First, Mr. Aoyama from JGC Corporation lectured on the pinch technology's mechanism of analyzing processes and utilities and discussed its application to future business operations. Mr. Matsuda from Chiyoda Corporation then introduced Japan's initiatives for realizing a wider scope of applications, such as for energy integration in refineries and chemical plants.

(4) Session 4: Latest Energy Efficiency Devices

In this session, a lecture was given on the technical advancement of the latest devices that are essential for realizing energy efficiency in boilers and turbines, heat exchangers, and control technologies. A discussion also took place in preparation for the next day's workshop.

The session, including the Q&A portion, was honored with the participation of the chairman of the ADNOC HSE Steering Committee, who expressed strong interest in this seminar. As advised by the chairman, the seminar members were asked to brief member companies of the ADNOC HSE Steering Committee the next day on a summary of the seminar.

Group discussion

(5) Session 5: Energy Efficiency Workshop

An interactive training session was provided on the third day. The ADNOC side introduced case examples and presented case studies as an introduction to the subsequent group discussion. Each of the participants then created an action plan for improving energy efficiency. For the group discussion, they were divided into three groups, each assigned with a different theme—effective gas utilization, process efficiency and utility efficiency—and engaged in active discussion with expert lecturers assigned to their group.

3. Summary

This seminar incorporated the following new initiatives with successful results.

(1) Cross-organizational training activities with ADNOC Group companies

Training programs are conventionally implemented with regard to an individual company or department of a state-run oil company group. However, as a new attempt, this seminar was intended for 12 companies under the ADNOC Group, and was held with the participation of members from each of those companies. This made it possible to introduce Japan's technologies to a number of ADNOC Group companies at once. Furthermore, the opportunity for participants from different ADNOC Group companies to engage in mutual discussion laid

the foundation for an emergent training program.

(2) Preparation in cooperation with a new counterpart organization of a state-run oil company

This seminar came to be implemented through the ADNOC Supreme Petroleum Council's introduction of the ADNOC Environment Subcommittee to JCCP, and was prepared in cooperation with the subcommittee for the first time. Although this was the first co-hosting of a seminar, it turned out to be a meaningful and productive one, thanks in large part to the dedicated efforts of the subcommittee members. Meticulous planning and consultation between the Environment Subcommittee and JCCP ensured an effective program that met the needs of the counterpart country in terms of the selection of lecturers, lecture content and participants.

This cooperative preparation process also had the effect of deepening understanding of technical needs in the counterpart country, as well as of technical seeds in Japan. Ultimately, in addition to disseminating an overview of this seminar within ADNOC, the two parties agreed to cooperate in implementing another seminar on a different theme next fiscal year.

(3) Introduction of JCCP technical cooperation projects

As a new endeavor, JCCP technical cooperation projects were introduced in the seminar with the cooperation of JCCP's Technical Cooperation Department, UAE University and affiliated Japanese companies in the region. In addition to disseminating knowledge of JCCP activities to ADNOC Group companies, the initiative was effective in providing an opportunity for the participants to acquire a broad range of advanced technologies. The cooperation of Japanese companies also promoted awareness of the potential of JCCP training programs as a forum for extensive exchange of information.

In response to the steady stream of specific requests from GCC countries for environment-related training, JCCP will aim to deliver effective training programs that meet the expectations of oil-producing countries by making careful preparations in line with the needs of relevant business departments in those countries.

<by Tetsuo Arii, Training Dept.>

Participants and lecturers of the seminar

Interview with executives from companies under the ADNOC Group

Briefing Report
CPO Seminar on Human Resource Development Held at KISR

A Customized Program-Overseas (CPO) on human resource development was recently held at the headquarters of Kuwait Institute for Scientific Research (KISR). JCCP had received a request for a CPO seminar on human resource management and human resource development from KISR in 2010, but the program was postponed in the wake of the March 2011 earthquake in Japan. Reconsideration was given to implementing the program in Kuwait on the occasion of the participation of Mr. Ahmad Al-Failakawi, Principle Training HRD, in a regular course on human resource development last year.

The seminar was arranged to be held in Kuwait, and was designed to run for five days. Two days were allotted for a general discussion on the state of human resource management (HRM) and human resource development (HRD) in Kuwait, a day for an introduction of case examples of corporate HRM/HRD practices, and two days for a lecture on HRD theories by a university professor.

1. Course Name

Customized Program-Overseas on Human Resource Development (HRD)

2. Dates of Implementation

March 11 – 15, 2012 (5 days)

3. Counterpart Organization

Kuwait Institute for Scientific Research (KISR)

4. Participants

15 participants from the personnel affairs, education & training and career support departments

5. Lecturers

Prof. Hiromasa Tanaka (Meisei University), Mr. Takuya Saito (JGC Corporation), Akio Hoshino (JCCP)

Participants of the seminar (in the lobby of KISR headquarters)

6. Program

(1) Japanese-style HRM and HRD
(2) Transitions and Current Situation of Japanese-style HRM Practices
(3) Kaizen—Overview and Case Examples of Kaizen Initiatives
(4) Actual State of HRM and Evaluation Systems and Internal Training in a Major Engineering Company in Japan (JGC Corporation)
(5) Essential Knowledge for Implementation of Education & Training (Meisei University)

Training session

Presentation of the completion certificate to Mr. Al Awadi (right)

Lecturers of the seminar

JCCP Regular Courses Completed

TR-8-12 Practical Training for Younger Instrument and Control Engineers
June 5 – July 13, 2012 **Lecturer: Shigeru Matsui**

Content: Theoretical and Practical Training in Process Control;
Latest DCS and Software;
Practice Building Control System;
Safety Instrument System;
Wireless Instrument System;
Information and Control System in Refinery;
Latest Analyzer;
Model Predictive Control;
Instrument Engineering Design;
Training and Practice of Field Instrument (transmitter, level meter, flow meter, control valve);
Control System in Power Plant;
Discussion about the Maintenance of Instrument

<14 countries / 16 participants>

Site visits: Yokogawa Electric Corporation (Mitaka Headquarters & Kofu Factory); Endress+Hauser Japan Co., Ltd. (Kofu Factory); Emerson Japan, Ltd. (Mizushima Solutions Center); Idemitsu Kosan Co., Ltd. (Tokuyama Refinery); Shimadzu Corporation (Kyoto Headquarters & Sanjo Factory); Oval Corporation (Yokohama Operation Center); Kyushu Electric Power Co., Inc. (Omuta Power Plant); Tobata Co-Operative Thermal Power Company, Inc.; Azbil Corporation (Fujisawa Technology Center & Shonan Factory)

Countries: Indonesia, Iraq, Kuwait, Libya, Malaysia, Myanmar, Nigeria, Pakistan, Saudi Arabia, Sudan, Timor-Leste, Uzbekistan, Vietnam, Yemen

TR-9-12 Safety Management for Refineries
June 19 – July 6, 2012 **Lecturer: Takaaki Yuasa**

Content: Safety Management for the Refinery;
Environmental Control;
Safety Regulations and Disaster Prevention;
Safety Consideration for Plant Design and Risk Management;
Safety Management for Plant Maintenance;
Case Study and Discussion

<9 countries / 16 participants>

Site visits: JX Nippon Oil & Energy Corporation (Negishi Refinery);
Idemitsu Kosan Co., Ltd. (Tokuyama Refinery);
Sompo Japan Risk Management Inc. (Shinjuku Head Office);
Yokogawa Electric Corporation (Mitaka Headquarters);
Azbil Corporation (Fujisawa Technology Center)

Countries: China, Indonesia, Iraq, Kuwait, Malaysia, Myanmar, Saudi Arabia, Vietnam, Yemen

TR-10-12 Diagnostic Techniques and Maintenance for Rotary Machinery
June 19 – July 6, 2012 **Lecturer: Shintaro Miyawaki**

Content: Outline of Petroleum Industry in Japan;
Diagnostic Techniques and Maintenance for Rotary Machinery;
Vibration Measurement and Control System;
Various Technologies for Combined Cycle Generators and Boiler Systems;
Refinery Practices for Maintenance of Rotary Machinery;
Various Technologies for Gas Turbine Systems;
Operational Practices and Maintenance of Governors;
Latest Technologies for Steam Turbines;
Operational Practices and Maintenance of Compressors and Transmission Gears;
Operational Practices and Maintenance of Mechanical Seals;
Vibration Analysis Technologies for Rotary Machine Bearings

<14 countries / 19 participants>

Site visits: Shinkawa Sensor Technology, Inc. (Hiroshima Factory); Babcock-Hitachi K.K. (Kure Works); JX Nippon Oil & Energy Corporation (Mizushima Refinery); Mitsubishi Heavy Industries, Ltd. (Takasago Machinery Works); Woods Corporation (Head Office); Hitachi Ltd. Power Systems Company (Hitachi Works); Hitachi Plant Technologies, Ltd. (Tsuchiura Works); Eagle Burgmann Japan Co., Ltd. (Gosen Factory)

Countries: Bahrain, Indonesia, Iraq, Kuwait, Libya, Mexico, Myanmar, Nigeria, Oman, Pakistan, Saudi Arabia, Sudan, Vietnam, Yemen

TR-11-12 Human Resource Management
October 9 – October 26, 2012 **Lecturer: Eiji Okuyama**

Content: Overview of Japanese Oil Industry;
Japanese-style Human Resource Management;
Training & Career Development System and Total Productive Management;
Manpower Outsourcing and HRM System;
Safety Education and HRM System;
Personnel Course, Qualification System, Evaluation System;
HRM System and Small Group Activities;
Rational Thought and Team Consensus Building

<16 countries / 19 participants>

Site visits: Idemitsu Kosan Co., Ltd. (Chiba Refinery); JGC Corporation (Head Office); Uyeno Kosan, Ltd., Uyeno Yuso Ltd. (Head Office); JX Nippon Oil & Energy Corporation (Mizushima Refinery); Cosmo Oil Co., Ltd. (Sakaide Refinery); JGC Catalysts and Chemicals Ltd. (Kitakyushu Operation Center)

Countries: Indonesia, Iraq, Kazakhstan, Libya, Malaysia, Mexico, Myanmar, Oman, Qatar, Russia, Saudi Arabia, Thailand, Timor-Leste, UAE, Uzbekistan, Vietnam

TR-12-12 Environmental Management
September 18 – October 5, 2012 **Lecturer: Bunsuke Kariya**

Content: Petroleum Industry in Japan; Environmental Management; Wastewater Treatment; Air Pollution Control; Oil Industry's Contribution to Environment Protection; Wastewater Treatment Using Ferrous Particles; Carbon Capture and Storage; Environment Protection and High Efficiency Turbine; Environmental Management in Refinery; CO_2 Reduction and Introduction of New Energy; Industrial Waste Treatment and Soil Remediation; Global Warming Countermeasures; Case Study and Discussion

<13 countries / 16 participants>

Site visits: JX Nippon Oil & Energy Corporation (Head Office); Hitachi Plant Technology; Research Institute of Innovative Technology for the Earth; Kawasaki Heavy Industries; JX Nippon Oil & Energy Corporation (Marifu Refinery); Nippo Corporation (Head Office & Sodegaura Plant)

Countries: Indonesia, Iraq, Kazakhstan, Libya, Malaysia, Pakistan, Papua New Guinea, Philippines, Saudi Arabia, Thailand, Uzbekistan, Vietnam, Yemen

TR-13-12 Project Management for Mechanical Engineers
September 18 – October 5, 2012 **Lecturer: Fumihiro Tone**

Content: Project Management Activities in Oil Refineries in Japan; Project Cost Management; Project Engineering for EPC Project by Utilizing IT; Project Risk Management and Project Contracts

Site visits: Non-Destructive Inspection Co., Ltd. (Headquarters); Mitsubishi Heavy Industries, Ltd. (Takasago Works); JGC Corporation (Yokohama World Operation Center); The Japan Steel Works, Ltd. (Muroran Plant); Idemitsu Kosan Co., Ltd. (Hokkaido Refinery); Hokkaido Joint Oil Stockpiling Co., Ltd. (Hokkaido Office)

<13 countries / 17 participants>

Countries: Colombia, Indonesia, Iraq, Kuwait, Libya, Mexico, Myanmar, Nigeria, Saudi Arabia, Sudan, Uzbekistan, Vietnam, Yemen

TR-14-12 Advanced Field Devices and Control
October 9 – October 26, 2012 **Lecturer: Shigeru Matsui**

Content: Training of Instrumentation Engineering; Theoretical and Practical Training in Process Control; Training in the Latest Control System and Software; Training of Control Valve Engineering; Training of Emergency Shutdown System; Training in Vibration Measurements and Diagnosis; Training in Control System and Instrumentation Maintenance in Refinery; Training of the Latest Control System & Training and Practice in Control Valve; Training of Control Loop Design in Refinery

<14 countries / 15 participants>

Site visits: Yokogawa Electric Corporation (Mitaka Headquarters); Shinkawa Sensor Technology, Inc. (Hiroshima Factory); Idemitsu Kosan Co., Ltd. (Chiba Refinery); Oval Corporation (Yokohama Operation Center); Azbil Corporation (Fujisawa Technology Center & Shonan Factory)

Countries: Ecuador, India, Iraq, Kazakhstan, Libya, Mexico, Myanmar, Nigeria, Russia, Sudan, UAE, Uzbekistan, Vietnam, Yemen

FY2013 JCCP Course Schedule

In FY2013, JCCP will offer 26 courses, including 23 regular courses (TR) and 3 intensive courses (IT), as shown below.

Course No.	Course Title		Period
TR-1-13	Petroleum Marketing		Apr. 8 – 25, 2013
TR-2-13	Future Advanced Technology for Petroleum Industry	NEW	Apr. 8 – 25, 2013
TR-3-13	DCS Fundamentals and Applications		Apr. 8 – 25, 2013
TR-4-13	Human Resource Management (HRM)		May 7 – 24, 2013
TR-5-13	Upgrading Processes of Heavy Oil		May 7 – 24, 2013
TR-6-13	Petroleum Distribution		May 28 – Jun. 14, 2013
TR-7-13	Maintenance Management		May 28 – Jun. 14, 2013
TR-8-13	Refinery Management		May 29 – Jun. 12, 2013
TR-9-13	Practical Training for Younger Instrument and Control Engineers		May 28 – Jul. 5, 2013
TR-10-13	Safety Management for Refineries		Jun. 18 – Jul. 5, 2013
TR-11-13	Diagnostic Techniques and Maintenance for Rotary Machinery		Jun. 18 – Jul. 5, 2013
TR-12-13	Advanced Technology and Control System of Power Generation Facilities	NEW	Aug. 27 – Sep. 13, 2013
TR-13-13	Environmental Management		Sep. 17 – Oct. 4, 2013
TR-14-13	Project Management for Mechanical and Chemical Engineers		Sep. 17 – Oct. 4, 2013
TR-15-13	Energy Management for Petroleum Industry	NEW	Oct. 8 – 23, 2013
TR-16-13	Advanced Field Devices and Control		Oct. 8 – 25, 2013
TR-17-13	Gas Processing for LNG		Oct. 29 – Nov. 15, 2013
TR-18-13	Material Problems and Their Countermeasures		Oct. 29 – Nov. 15, 2013
TR-19-13	Human Resource Development (HRD)		Nov. 19 – Dec. 6, 2013
TR-20-13	Information and Control Systems Utilized in Refineries		Nov. 19 – Dec. 6, 2013
IT-1-13	Turnaround and Inspection		Nov. 25 – Dec. 6, 2013
TR-21-13	Inspection and Reliability Evaluation		Jan. 14 – 31, 2014
IT-2-13	Finance and Accounting Management		Jan. 20 – 29, 2014
TR-22-13	Quality Management of Refinery Products		Feb. 4 – 21, 2014
TR-23-13	Advanced Process Control on DCS		Feb. 4 – 21, 2014
IT-3-13	TPM Activities for Refinery Maintenance Management	NEW	Feb. 10 – 21, 2014

Marketing, Distribution, HRM, Finance

Refining Process, LNG

Maintenance, Inspection, Project Management

Control, Instrumentation

Signing Ceremony for the Study on Fuel Cell and New Energy Technology Application in UAE

JCCP launched the study on "Fuel Cell and New Energy Technology Application in UAE" this fiscal year, and held a ceremony on June 18, 2012 for signing the Memorandum of Agreement (MOA) with the United Arab Emirates University (UAEU) as its counterpart.

Signing ceremony

1. Background and Technical Development Overview

UAE is currently experiencing remarkable economic growth driven mainly by the oil and gas industries, and has become the world's second-largest per capita emitter of CO2. From a sense of crisis stemming from this regrettable status, recent years have seen a heightened interest in issues related to environmental pollution, introduction of renewable energies, and improvement of energy usage efficiency. UAE has set a national target to increase its ratio of renewable energies to 7% by 2020, but renewable energies do not even account for 1% at present. In fiscal 2011, a preliminary study was conducted to examine the feasibility of introducing highly energy-efficient fuel cells to increase energy usage efficiency in UAE, and based on the results, a study on the application of a new fuel cell energy system was launched in fiscal 2012 as a joint undertaking with UAEU. The main activities of the study include the following.

1) Introduction of a real-scale fuel cell; Training in Japan; Basic experiment in UAE
2) Installation and operation of a fuel cell for the first time in UAE
3) Establishment of fuel cell safety standards; Collection of onsite operation data
4) Modification of the fuel cell as appropriate to UAE and evaluation of its performance
5) Systematic linkage of the fuel cell with other power supplies
6) Installation of the fuel cell at a commercial experiment site and its operation

Dr. Abudullah Al Khanbashi, Vice-Chancellor of UAEU

H.E. Mr. Tatsuro Watanabe, Ambassador of Japan to UAE

2. Signing Ceremony

In a signing ceremony held at UAEU, Dr. Abudullah Al Khanbashi, Vice-Chancellor of UAEU, and Mr. Morihiro Yoshida, Managing Director of JCCP, signed the MOA, and speeches were delivered by Dr. Al Khanbashi, H.E. Mr. Tatsuro Watanabe, Ambassador of Japan to UAE, and Mr. Makoto Kuramochi, President of JX Nippon Research Institute, Ltd. In his speech, Dr. Al Khanbashi said that as UAEU is focusing its efforts on engineering new energy technologies, he is extremely grateful for the opportunity to study leading-edge fuel cell technology jointly with Japanese parties. He also expressed his wish to acquire good results, and said he would appreciate continued cooperation from JCCP and other relevant organizations in Japan. Ambassador Watanabe said that Japan, as a worldwide leader in fuel cell technology, looks forward to commencing the joint study with UAEU on the feasibility of applying the fuel cell technology to the Middle East region as a highly meaningful project to both countries, and that he has high expectations of the project's results. Mr. Yoshida, after touching on the long history of cooperation between JCCP and UAE, expressed his hopes that by operating and accumulating data from the fuel cell system in UAE's severe environment, Japan's technology would be transferred to UAE through this project. After the speeches, the leaders signed the MOA and brought the ceremony to a close.

3. About the Fuel Cell Pilot Unit

After the ceremony, the parties to the project visited the site where the fuel cell system is being operated on a test basis, and confirmed that the system has been installed in the housing and placed in trial operation. Since commencing trial operation in fiscal 2012 and collecting data, the following three findings have been made. Measures to address these findings will be taken hereafter.

1) In temperatures exceeding 50°C during afternoon hours when direct sunlight intensifies, the temperature control interlock functioned and automatically shut down the fuel cell so that the pilot unit could not continue operating.
2) There were cases where temperatures above 50°C caused so much natural discharge of the lead battery inside the fuel cell that the voltage dropped and the pilot unit could not be started up.
3) Hydrogen was purchased in cylinders, but since they are expensive in UAE, the installation of a reforming unit that uses LPG, gas, naphtha and other such petroleum-based hydrocarbons will be considered.

4. About the Fuel Cell

In a fuel cell, the chemical reaction of hydrogen and oxygen is used to generate electricity and water. As shown in Fig. 1, power generation in a fuel cell characteristically lacks the heat energy and kinetic energy conversion process, so energy loss is minimized.

In consideration of operating the pilot unit in environmental temperatures exceeding 50°C in UAE, a polymer electrolyte fuel cell (PEFC) was selected for this project, as it has a proven performance record and also allows flexible responses.

Fuel cell housing structure


Hydrogen cylinder room

Lighting test using the fuel cell

5. Summary

The signing ceremony, including the tour of the pilot unit to inspect its status of trial operation, was attended by many parties, and represented the culmination of careful preparation by UAEU and a manifestation of its strong interest in the project. JCCP hopes the successful completion of this project through cooperation between UAE and Japan will serve as a catalyst in strengthening the friendly relationship between the two countries.

<by Masatoshi Yokotsuka, Technical Cooperation Dept.>

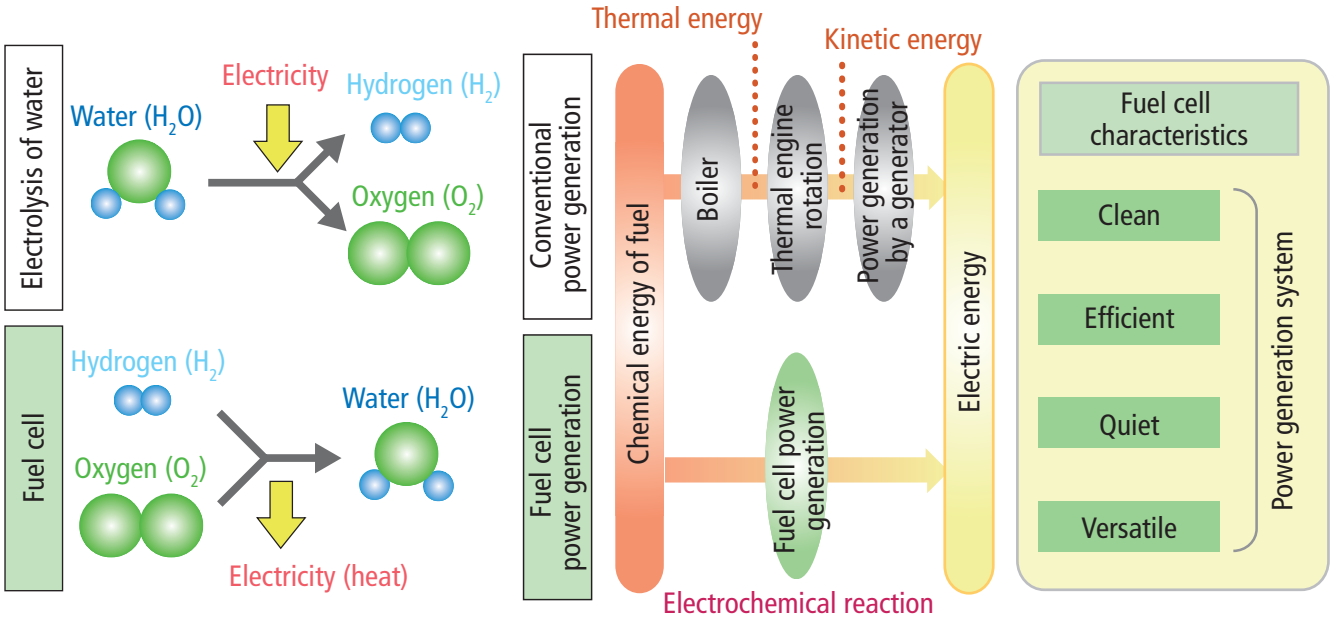


Fig. 1 Overview of the fuel cell

Update of the Asphalt Project in Iraq with the Iraqi Ministry of Oil: Development into Road Paving Technology

JCCP commenced two joint technical cooperation projects with Iraq in fiscal 2011 with the participation of Japanese oil companies and other relevant companies. They are being implemented as part of the Special Cooperation Program for Iraq under the Japanese Ministry of Economy, Trade and Industry's subsidy for projects to support oil-refining technologies and projects in oil-producing countries. The current status of the projects, the "Study on Development of Asphalt Industry and Finding New Applications in Iraq," is outlined below.

1. Overview

Implementation period:

April 1, 2011 – March 31, 2013 (two years)

Counterpart:

Petroleum Research & Development Center (PRDC) of the Iraqi Ministry of Oil
Iraq National Oil Company

Participating companies:

JX Nippon Research Institute Ltd.
JX Nippon Oil & Energy Corporation
Green Consultant Co., Ltd.

In Iraq, asphalt is currently produced in refineries in the northern, central and southern parts of the country under a uniform nationwide standard, by blending bottom oil from the propane deasphalting unit (PDA) that is used for lube oil production with residue oil from the vacuum distillation unit (VDU). However, asphalt pavement defects such as rutting and cracking are occurring throughout the country.

The project being implemented aims to remedy this problem by transferring Japan's asphalt production, modification and paving technologies to Iraq. It began as a preliminary assistance study in fiscal 2010 and was upgraded to a joint technical cooperation project in fiscal 2011.

On October 5, 2011, the Iraqi Ministry of Oil and JCCP signed and exchanged an agreement for implementation of this project and the other project, in a signing ceremony held in Tokyo.

2. Progress and Update

In fiscal 2011 and 2012, samples of straight asphalt were obtained from Iraq and evaluated in Japan. The results indicated that the quality of straight asphalt produced in Iraq is at a level similar to that produced in Japan.

Pilot plant from Japan that was installed and is now being used at the Petroleum Research & Development Center (PRDC)

Wheel tracking device that was sent from Japan and installed in PRDC: Mr. Maher B. Antwan, Senior Chief Engineer at PRDC and leader of the project on the Iraqi side (left)

It was also found that straight asphalt produced in Iraq has the potential to deliver high performance with proper modification. However, evaluation technologies are needed to produce steady-quality asphalt, and the material and structure of the modified asphalt need to be designed with due consideration to the severe weather conditions and load conditions that road pavements in Iraq are subject to. Based on the results of various tests, the following technologies are currently being transferred to the Iraqi side.

(1) Straight asphalt evaluation technology
- Technical transfer of evaluation methods that use indicators such as the penetration index (PI) (FY2010)

(2) Modified asphalt production and evaluation technologies
- Installation of a pilot plant in Iraq for conducting a modification test by the Iraqi side (FY2011)
- Providing training in Japan to engineers from the Iraqi Ministry of Oil (FY2011 & FY2012)
- Installation of an asphalt evaluation facility in Iraq (FY2011: assembly in Japan; FY2012: transportation to Iraq)
- Design of an industrial-scale plant (FY2012)
- Technical support for conducting asphalt modification tests using the pilot plant in Iraq, and support for standardizing test procedures (FY2012)

(3) Road-paving technology

In order to minimize pavement problems, it is necessary not only to introduce the above production technologies, but to also upgrade road-paving technology in Iraq, which requires collaboration between asphalt suppliers (under the charge of the Ministry of Oil (MoO)) and users (under the charge of the Ministry of Construction and Housing (MoCH)).

Recognizing the significance of this JCCP technical cooperation project, engineers of MoCH came to join the project's technical conferences from the latter half of FY2011 and have contributed to making the discussions more specific. New requests have also emerged from the Iraqi side, such as for JCCP's cooperation in test-paving a segment of a highway (Route 6) under construction in Iraq and conducting a technical evaluation of the results. Consideration is being given to responding to this request by having the Iraqi side undertake the paving work and the testing and observation of the trial pavement, and JCCP taking charge of the planning and designing of the trial pavement, evaluating the test results and providing advice.

The following road-paving technologies are being transferred to the Iraqi side:
- Providing training in Japan to civil engineers from MoCH (FY2012)
- Support and evaluation of the trial pavement along a segment of Route 6 in Iraq (presently in the planning stage)
- Summary of the essential points of designing, constructing, inspecting and repairing road pavements, etc. (present in the planning stage)

The project is proceeding smoothly based on a firm relationship of mutual cooperation between the Iraqi side and JCCP. As road network development is indispensable to Iraq's reconstruction, we hope to provide technical transfer to a level that would ultimately enable the Iraqi side to produce and evaluate asphalt and to design and construct road pavements on its own.

The other technical cooperation project being implemented by the Iraqi Ministry of Oil and JCCP, the "Study on Technical Support of Introduction of Produced Water Treatment for SOC in Iraq" (participating companies: Water Reuse Promotion Center, Swing Corporation), is also well under way.

<by Hironao Naganuma, Technical Cooperation Dept.>

Study on Corrosion Assessment & Mitigation Technology in Kuwait

(Front row, from the second from left)
Dr. Shigeo Tsujikawa, Professor Emeritus, University of Tokyo;
Dr. Abdulhameed Al-Hashem, Director, PRSC;
Dr. Hamdy Shalaby, Manager, Corrosion Assessment & Mitigation Technology Program;
Dr. Koichiro Osozawa, Director, Corrosion Center

JCCP and Kuwait Institute for Scientific Research (KISR) have recently launched the Technical Collaboration Project for Newly Planned Corrosion Assessment and Mitigation Technology Program that is scheduled to run from fiscal 2012 to 2015.

1. Background

Plants in the oil industry in Japan and in many countries around the world are aging, and their safety and security have become a social issue today. Accidents occur frequently in oil-related facilities in Kuwait as well, the majority of which are said to be caused by deterioration and corrosion of plant materials

To address this problem, KISR, as a national research institute, established the Corrosion Assessment & Mitigation Technology Program in 2011 and commenced the program with 13 experienced researchers and experts. However, as there had been some concerns that while all members have made dedicated efforts in fundamental research they have not accumulated much experience in actually applying corrosion countermeasures on site in a refinery, JCCP's cooperation was sought in acquiring the assistance of skillful Japanese researchers over the long term.

JCCP initially explored the possibility of sending experienced corrosion engineers to Kuwait under the JCCP High-Level Researcher Dispatching Program, but there were unfortunately no candidates who assented to a long-term dispatch. JCCP therefore consulted with the Japan Society of Corrosion Engineering (JSCE; then a public utility association but now a general incorporated association), and judged that the Society's participation in a joint project would be highly meaningful in addressing corrosion countermeasures in diverse fields. In August 2011, an expert from the Society was sent to Kuwait to conduct a basic study under JCCP's Technical Cooperation scheme, and as a result of discussions with members from KISR and Kuwait National Petroleum Company (KNPC), an agreement was reached to implement a project on corrosion assessment and mitigation technology.

2. Overview

The organization that is actually participating in the project on the Japanese side is the Corrosion Center of JSCE. The Corrosion Center was established 20 years ago with the objective of widely applying to the world the advanced technical potentials possessed by members of the Society. This project is the first overseas undertaking in the Corrosion Center's history, and also coincides with its 20th anniversary. As a landmark project, the Center is focusing its efforts on the project by launching a KISR Project Committee and enlisting experts from diverse fields as members.

JCCP's counterpart in Kuwait is KISR, but KNPC and Kuwait Oil Company (KOC) are also participating in the project as observers. Principal corrosion issues have already been identified and shared among all parties in a meeting held in May. Plans hereafter include educating field engineers about corrosion and conducting an onsite examination of corrosion mitigation measures.

The project is being implemented with regard to the following seven themes.

(1) Synergistic effects of hydrogen sulfide and chloride on stress corrosion cracking of stabilized austenitic stainless steels
(2) The effect of excess chlorine on corrosion of carbon steel in cooling water service
(3) Corrosion behavior of high-performance heat exchange alloys in severe process conditions
(4) Failure investigations
(5) Application limits of carbon steel in sea water
(6) Application of electrochemical noise technique for refinery corrosion monitoring
(7) Application of RBI (risk-based inspection)

These themes will be addressed in a flexible manner from those with higher priority, in response to the needs of KNPC and KOC. Major activities for this fiscal year are being implemented as shown in the following schedule.

April: Kickoff meeting at KISR (verification of themes for FY2012)
May: Agreement signing ceremony, onsite inspection by KNPC and KOC, first training session
September: Invitation of KISR researchers to Japan (training in Japan, progress meeting, technology exchange meeting, JSCE annual meeting)
October: Introduction of test equipment to KISR
November: Progress meeting at KISR and second training session
January: Progress meeting at KISR and announcement of project results in a symposium

At the present stage, particular efforts are being directed to addressing the sixth theme, application of electrochemical noise technique, as introduced below.

The electrochemical noise technique was developed by a member of the Corrosion Center's KISR Project, and is a proven method for identifying the electrochemical corrosion properties of materials from their polarization characteristics. Later this fiscal year, KISR researchers will be invited to Japan to receive training on this electrochemical technique, and the relevant electrochemical device will be introduced to KISR to conduct basic tests. The tests will simulate the conditions of KNPC's refining facilities to identify

Training in electrochemical noise technique <1>

Training in electrochemical noise technique <2>

Site tour of the installation of the electrochemical noise device in Japan

corrosion properties and propose corrosion mitigation measures.

In mid-September, two KISR researchers received training in Japan over a period of five days at a technical center of a private company. Using the same device as that slated for introduction to KISR, practical training was provided on methods for its operation, results analysis and maintenance. Thanks to the Corrosion Center's kind consideration of the Kuwaiti researchers' cultural customs and diet, the two members were able to concentrate on their training program.

Upon completion of the above researcher training program, Dr. Abdulhameed Al-Hashem, Director, and Dr. Hamdy Shalaby, Manager, Corrosion Assessment & Mitigation Technology Program, both from the Petroleum Research & Studies Center (PRSC) of KISR, were invited to Japan to attend a project progress meeting at JCCP Headquarters. After the progress meeting, they visited Japanese companies to hold technology exchange meetings. The progress meeting at JCCP was attended by four members from KISR, Dr. Koichiro Osozawa, Director of the Corrosion Center, and eight members of the KISR Project, including Dr. Shigeo Tsujikawa, Professor Emeritus at the University of Tokyo, and provided the opportunity to verify the progress of the project and discuss future plans. At the beginning of the meeting, Dr. Al-Hashem expressed his appreciation for implementation of this project and also conveyed KNPC and KOC's expectations of the project in achieving safety and security in their plants.

3. Future Plans

During fiscal 2012, the themes of the project will be addressed, and two presentations on the results of electrochemical noise technique and other achievements are slated to be presented at the 14th Kuwait-Japan Joint Symposium, scheduled to be held in January. In fiscal 2013, an electrochemical device will be introduced to a KNPC refinery to demonstrate the applicability of the electrochemical noise technique to an actual plant.

JCCP expects this project to play a significant role in transferring Japan's advanced corrosion mitigation technology to Kuwait and preventing corrosion-related accidents, and hopes its successful completion will contribute to strengthening friendly ties between the two countries.

<by Hiroaki Hara, Technical Cooperation Dept.>

JCCP Receives a Visit by Two Researchers from Saudi Arabia

1. Dr. Mohammad Shamsuzzoha

King Fahd University of Petroleum and Minerals (KFUPM)

Date of visit: July 26, 2012

Dr. Shamsuzzoha from KFUPM came to Japan at the beginning of June under the FY2012 Research Invitation Program and engaged in research on "design and optimization of a divided-wall distillation column (DWC)" until the end of July under the guidance of Dr. Hiroya Seki, Associate Professor, Chemical Resources Laboratory, Tokyo Institute of Technology. DWC is a breakthrough technology that simultaneously realizes energy conservation and reduced construction cost, and in recent years is being constructed or renovated at rapid speed in countries abroad. The very concept of DWC was originally proposed by Dr. Richard Wright in 1949, but because a reliable design method had yet to be established and there were uncertainties about its ability to control reactions inside the column, the concept did not catch on. Thereafter, however, the experience of the two oil crises in the 1970s prompted the development of DWC technology in the 1980s. Ever since the construction of the world's first commercial DWC by the chemical company BASF in 1985, more than 100 DWCs have been built and are now in operation around the world.

A DWC has dividing walls inside the column that make it possible to separate three or more fractions in a single column, where two or more columns have conventionally been needed. This technology reduces the cost of constructing and operating the distillation column, as well as shortens construction time.

Presentation by Dr. Mohammad Shamsuzzoha

According to Dr. Shamsuzzoha, the advantages of a DWC are that it delivers (1) a high purity and (2) high yield of intermediate fractions with (3) relatively uniform volatility. However, a disadvantage lies in its difficulty in controlling pressure and temperature inside the column. Extreme interior pressure and temperature fluctuations have prevented the widespread introduction of DWCs.

In his research, Dr. Shamsuzzoha simulated four different designs (extreme design, optimal design, etc.) of the most basic DWC having three dividing walls by changing tray numbers and positions, and studied the yields of benzene, toluene and xylene and energy efficiency of each design. As a result, he found the column design that uses the Fenske-Underwood equation to be valid.

Dr. Shamsuzzoha said his recent research was made possible by JCCP cooperation, and expressed his deep gratitude to JCCP.

2. Mr. Mohammed Laffai M. Alotaibi

King Abdulaziz City for Science and Technology (KACST)

Date of visit: July 17, 2012

Mr. Alotaibi from KACST came to Japan in mid-June under the FY2012 Research Invitation Program and, until mid-July, engaged in research under Dr. Shukuji Asakura, Professor Emeritus at Yokohama National University and President of Venture Academia Co., Ltd.

KACST is a scientific research organization that reports directly to the Prime Minister of Saudi Arabia. There, Mr. Alotaibi engages in research in the corrosion and corrosion protection of metal materials.

Venture Academia is a venture business affiliated with Yokohama National University. It was founded in 2004 with the Asakura Laboratory in the Faculty of Engineering as its parent organization. Its main objective is to advance and support research on independent

test methods such as through re-enactment of special environments, in addition to conducting corrosion tests and electrochemical tests based on industrial standards such as JIS, ASTM and NACE. The venture company therefore closely coincided with Mr. Alotaibi's research theme.

Mr. Alotaibi visited JCCP Headquarters and said that his recent opportunity to study in Japan has greatly benefitted his second year of research at KACST as a milestone toward achieving his goal.

JCCP holds great expectations of future accomplishments by both researchers.

<by Sadao Wada, Technical Cooperation Dept.>

Mr. Mohammed Laffai M. Alotaibi (left)

Interim Report Meeting on the Study and Application of the Possible Photovoltaic (PV) System in UAE

An interim report meeting was held this past September 4th in Abu Dhabi on the "Study and Application of the Possible PV System Introduction in Petroleum Company Related Facilities in UAE," which was jointly launched in fiscal 2011 by JCCP, Showa Shell Sekiyu K.K. as the participating company on the Japanese side, and Abu Dhabi Oil Refining Company (TAKREER) as JCCP's counterpart in UAE. The study members presented the results of the first seven months of the study based on experimental data to Mr. Jasem Ali Al Sayegh, CEO of TAKREER, and other leaders at TAKREER, and reported on the potential effectiveness of operating a photovoltaic (PV) system under the environmental conditions in Abu Dhabi.

1. Background and Technical Development Overview

After conducting a study from fiscal 2009 to 2010 on the feasibility of introducing a PV system to oil refining facilities in UAE, it was found that TAKREER, which promotes a "Green Refinery Concept," is extremely proactive toward introducing a PV system to its refinery facility. A project was thus launched in fiscal 2011 with the Showa Shell Sekiyu Group as the participating member on the Japanese side. The Showa Shell Sekiyu Group is ideal for the role, as it manufactures solar panels and installs and operates PV systems in addition to operating refineries. As a result of conducting a study and discussing issues concerning the utilization of a PV system in TAKREER's refinery and ancillary facilities, it was agreed that PV facilities producing a combined total of 36.4kW of power would be installed on the roof and three other locations at BeAAT (waste treatment facility; literally meaning "environment" in Arabic) on a trial basis.

A demonstration test of the facilities was begun in January 2012 to collect data, and a completion ceremony was held in May with the attendance of relevant parties, including H.E. Mr. Tatsuo Watanabe, Ambassador of Japan to UAE.

2. Purpose of the Demonstration Test and Overview of Results

PV systems generally do not require a rotary device or other such drive instrument. Therefore, they can be operated at low maintenance cost even in locations subject to fine sandstorms, such as a desert. Compared to Japan, weather conditions in Abu Dhabi are advantageous to power-generating capacity, in that the strong intensity and large amount of sunlight can generate more electrical power. At the same time, however, they are disadvantageous in that high temperatures, low rainfall and the large amount of desert dust might contaminate the solar panels over time, and high surface temperatures might undermine power-generating capacity.

The Showa Shell Sekiyu Group's CIS (copper-indium-selenium) thin-film solar cell modules for PV systems exhibit better temperature properties compared to crystalline Si (silicon) cells, and characteristically minimize any drop in conversion efficiency even when exposed to high temperatures. The purpose of the test is to therefore bring together the above-mentioned advantages and disadvantages and demonstrate the comprehensive power-generating capacity and efficiency of the proposed system. Toward this end, the performance characteristics of the system were examined by installing solar panels in four different environmental conditions and operating the system to examine the effect of installation height on the environment and the effect of regular cleaning or the lack thereof on the panel surface.

The result of seven months of test operation showed that the effect of dust on power-generating efficiency is a drop in efficiency of around 3%, which is smaller than the initial estimate of 5% (comparison between solar panels that are cleaned and not cleaned), and that the effects of sunlight intensity and amount more than cancel out the effect of dust. When compared with Japan, it was found that approximately 40% more power could be generated.

Hereafter, the demonstration of the test facilities at BeAAT will be continued, and proposals and discussions will focus on seeking refinery-related locations for installing the second PV system in fiscal 2013.

<by Hideki Nomura, Technical Cooperation Dept.>

Technical Cooperation Evaluation Subcommittee for Projects Completed in FY2011

1. Overview

Since fiscal 2006, JCCP's Technical Cooperation Department has been evaluating projects upon their completion. Multiple-year projects are comprehensively evaluated in terms of their initial planning, management, adjustment in response to the rate of progress and changes in the external environment, and degree of achievement, including the beneficiary country's level of satisfaction, and the results and advice extracted from this comprehensive evaluation are fed back into subsequent projects to constantly enhance the general efficiency and effectiveness of the technical cooperation program. This fiscal year, the name of the evaluation committee was changed from "Ex-post Evaluation Committee" to "Technical Cooperation Evaluation Subcommittee."

This fiscal year's Technical Cooperation Evaluation Subcommittee held its first meeting on June 22 and its second meeting on August 1. The four-member committee headed by Dr. Noritaka Mizuno, Professor, Department of Applied Chemistry, School of Engineering, The University of Tokyo, included Dr. Yoshiki Ogawa, Professor, Faculty of Economics, Toyo University; Dr. Keiichi Tomishige, Professor, Department of Applied Chemistry, Graduate School of Engineering, Tohoku University; and Dr. Atsushi Satsuma, Professor, Department of Molecular Design and Engineering, Graduate School of Engineering, Nagoya University.

2. Evaluated Projects

The Evaluation Subcommittee evaluated six projects that were completed this year. Each project was evaluated as shown below from the four perspectives of "project goal and status," "project management," "degree of achievement of the project goal," and "practical application and spin-off effects of the project."

(1) Study on Mild Hydro-cracking of LCO & Evaluation of Gas Oil HDS Catalysts (Saudi Arabia)

1) Objective

This project aimed to lay the basic groundwork for development of mild hydro-cracking technology toward the effective utilization of light cycle oil (LCO) that is expected to be in surplus in Saudi Arabia in the future, and to develop an evaluation technology for catalysts to be used in the production of ultra-low-sulfur diesel fuel that complies with future laws and regulations in the country.

2) Evaluation

All in all, the Subcommittee judged that the project was implemented with favorable results. In addition to achieving the R&D goal of attaining a 50% or more conversion yield of alkyl benzene from LCO, the project was evaluated for its contribution to transferring the relevant technology to Saudi Arabia and increasing recognition of JCCP activities by presenting its results in papers submitted to five academic publications.

(2) Study on Hydrogen Pilot Unit Demonstration (HyPUD) for Integration to H2 Station (Saudi Arabia)

1) Objective

This project provided support for the construction, operation and study of a hydrogen production demonstration unit that uses an oil-reforming catalyst developed by Saudi Aramco, and was designed to provide the first step toward the demonstration operation of a hydrogen station that would produce hydrogen fuel from oil and dispense the fuel to fuel cell vehicles.

2) Evaluation

The project was initially planned to be implemented over a maximum period of three years. However, the Saudi Arabian side decided not to go through with the entire plan, and the project was therefore brought to a close after the first year, at the end of fiscal 2011. The

premature cancellation was unfortunate, but the project was nevertheless evaluated for being implemented with proper results. The construction cost of the demonstration unit was examined, a study was conducted to minimize the scope of construction, and relevant data and materials were provided to the Saudi Arabian side as planned, for their consideration of whether or not to proceed to the next stage of the project. JCCP believes that the issue of hydrogen stations might again become a matter of interest as further advancements are made toward the development of a hydrogen society, and expects the results of this project to play an important role at that time.

(3) Project on Kuwait Heavy Crude Oil Upgrading—Feasibility of Thermal Cracking (Kuwait)

1) Objective

This project studied the thermal cracking process as a means for lightening and reducing the sulfur content of heavy crude oil, which is an issue of major concern in Kuwait, and examined the feasibility of commercializing the process by creating a conceptual design of the process and assessing its economic efficiency.

2) Evaluation

Due to a delay in Kuwait's heavy oil production plan, which was the driving factor of the project, an agreement was not reached regarding the construction of a demonstration plant that was envisioned as the next step in the project, but the project was nevertheless evaluated as having been implemented with good results. For example, the advantages of Eureka, a thermal cracking process licensed by a Japanese company, were verified; technologies for testing, evaluating and analyzing the thermal cracking process were transferred to Kuwait; and a guideline report for commercializing the process was distributed to oil-related parties in Kuwait in preparation for resumption of the plan to increase crude oil production.

(4) Application Study of Sulfur Concrete Technology (UAE)

1) Objective

This project aimed to verify the applicability of modified sulfur concrete to UAE through a demonstration test of its use in a marine application (fish reef) and wastewater treatment application (sewerage system). The sulfur concrete was developed by Japan to make effective use of surplus sulfur in UAE, and was designed to deliver high salt and acid resistance.

2) Evaluation

The demonstration test of the sulfur concrete's application as a fish reef and wastewater treatment application was evaluated as having been implemented as planned with favorable results. In regard to its use in a marine application, the demonstration verified the concrete's effectiveness as an artificial fish reef, so the feasibility of its commercialization in UAE will be examined as a new study in fiscal 2012. In regard to the concrete's use in a wastewater treatment application, the demonstration test was instrumental in extracting technical issues specific to an environment that differs from that in Japan and helped establish guidelines for future improvement. The project was also evaluated for the measures taken to promote awareness of its implementation in UAE through project reporting meetings and forums such as the Joint GCC-Japan Environment Symposium.

Schools of fish observed around the artificial fish reef (modified sulfur concrete)

(5) Technical Support on Energy Efficiency Improvement and Corrosion/Fouling Problem at QP Refinery (Qatar)

1) Objective

This project aimed to provide technical support for improvement of energy efficiency and corrosion/fouling problems in response to a strong request from Qatar Petroleum (QP)'s Mesaieed Refinery, which has been struggling with low energy usage efficiency.

2) Evaluation

The project was evaluated as having been implemented with good results. As the proposed change in amine

solution was verified to have a large improvement effect on energy efficiency, there are expectations of its future application to the Mesaieed Refinery. The corrosion/fouling problem of refinery units was addressed by providing improvement measures based on the knowledge of Japanese refineries, with plans for future application of their results by the refinery.

(6) Survey of Practical Use of Sand-Asphalt (Egypt)

1) Objective

In Egypt, crude oil that has been left abandoned in oil fields since the early development period has mixed with desert sand, lost its volatile content over time, and turned into sand-asphalt. In response to the country's struggles to process this sand, this project aimed to examine whether it could be used as raw material for producing an asphalt paving compound.

2) Evaluation

A significant change occurred in the external environment during this project. That is, the Arab Spring prompted anti-government protests in Egypt as in other Arab countries, and President Hosni Mubarak's prolonged administration collapsed in February 2011. In the aftermath of this revolution, the project was terminated even before an agreement for its implementation could be signed by JCCP and the counterpart in Egypt, and the planned demonstration test could not be conducted. Although the project could not be implemented due to the counterpart's situation, it was evaluated in terms of the fact that JCCP was able to strengthen its relationship with the counterpart through continued negotiations, and that offers for cooperation were received after contacting other relevant parties in the oil industry. JCCP believes Egypt has strong needs for this project, and that it may once again request its implementation when circumstances improve.

3. Summary

In addition to the above project evaluations, the Evaluation Subcommittee also provided views and proposals for future projects. For example, with respect to projects that address issues that Middle East oil-producing countries have in common, it provided the view that such projects should be widely applied to other relevant countries as well. JCCP will give due consideration to the guidance and counsel provided by the Evaluation Subcommittee and incorporate them in the implementation of future technical cooperation projects.

<by Michio Fujitani, Technical Cooperation Dept.>

Assigned to Saudi Arabia for the Second Time

Junichi Kasuya, General Manager, Riyadh Office

As of February 1, 2012, I was temporarily transferred from my parent company Idemitsu Kosan Co., Ltd. to JCCP, and have been residing in Riyadh, the capital of Saudi Arabia, from March. I am the fourth representative of the JCCP Riyadh Office since it was established in 2003, but this is actually my second assignment in Saudi Arabia. The first time, I was stationed in Jeddah as a representative of the Idemitsu Jeddah Office from immediately after the Gulf War in 1991 to June 1993.

There are presently a little over 700 Japanese people living in Saudi Arabia, of which around 230 live in Riyadh, and there are 20 Japanese companies and organizations including the Embassy of Japan.

Saudi Arabia is roughly 5.7 times larger than Japan, and the largest country on the Arabian Peninsula. It is well known as a dominant power in terms of the Islam religion and the world's largest producer of crude oil. The country's population, which was around 16 million during my stay in Jeddah, has grown to approximately 26 million today, achieving a more than 60% growth in just 20 years. The population in the capital city of Riyadh has also grown considerably from around 1.8 million 20 years ago to more than 5 million, and now surpasses even the total population of UAE, a country made famous by the riches of Dubai. The cityscape of Riyadh is marked today by luxury brand shops and fast-food chains that are also popular and well known in Japan.

With the dissemination of cell phones, satellite broadcasts and Internet access, which did not exist 20 years ago, and a host of new technologies that are too numerous to name, Saudi Arabia has become a materially affluent and advanced country. It has also become more open and free, allowing Saudi Arabian women to appear on mass media and issuing business visas to women, freedoms that were unheard of in the past. There are still many inconveniences compared to Japan and the West, but the country is steadily advancing.

At the same time, however, the above-mentioned population increase has brought various issues that were never envisioned 20 years ago. Among them, unemployment and the sharp increase in energy demand are particularly serious issues. The latest unemployment rate was reported at around 11% as a whole, with up to 30% of youths and more than 50% of women said to be unemployed. Given this situation, there is urgent need to create new workplaces and build vocational facilities where people can acquire the necessary knowledge and skills. Demands for water, electricity and fuel have also surged to the point of affecting the supply of fuel, feedstock natural gas and crude oil to power plants, desalination facilities, the petrochemical industry, and other industries.

Over the past few years, the government has employed various initiatives for addressing these issues, such as by establishing unemployment countermeasures and promoting energy conservation and efficient energy use.

The changes taking place in Saudi Arabia are changes that are also taking place in other Middle East oil-producing countries as well.

Meanwhile, Japan's dependency on the Middle East for oil imports is around 90% at present, and has not changed much since 20 years ago. This means the Middle East oil-producing countries are as important to Japan's energy security today as they were back then. Based on this understanding, JCCP's mission to strengthen relationships with oil-producing countries stands firm, and JCCP's role remains as important as ever.

The Riyadh Office oversees JCCP activities not only in Saudi Arabia but also in Bahrain, Qatar, Kuwait and Egypt. Along with the JCCP Middle East Office in Abu Dhabi, it stands at the forefront of facilitating communications with these oil-producing countries. Close to 10 months have already passed since I took

up my present post at the Riyadh Office. I will make continued efforts to maintain and strengthen JCCP's relationships with oil-producing countries by expanding personal connections with relevant parties and searching for seeds of new projects.

Changing the subject, I live alone in Riyadh. Without my family here, without any movie theaters though I love to watch movies, and with a limited selection of entertainment, playing golf on the weekends has become one of my favorite pastimes. In Riyadh, there are two beautifully green golf courses that are simply stunning. As I am the only Japanese person on staff at the Riyadh Office and usually have few opportunities to speak Japanese, playing a round of golf with other Japanese members is a refreshing respite. Having said this, however, playing golf frequently becomes more a source of frustration than relaxation, since I am not necessarily good at the sport.

If anyone reading this has an opportunity to come to Saudi Arabia on business, please feel free to drop me a line. I will look forward to your visit.

Tidings from Middle East

Miraculous Abu Dhabi

Jun Nishimura, General Manager, Middle East Office

With the staff of the Middle East Office

More than two months have already passed since I came to Abu Dhabi as Director of the JCCP Middle East Office. I have lived here twice in the past on a business assignment for a total of about eight years, but the miraculous growth of this country never fails to amaze me.

In recent years, high-rise buildings that are up to 60 stories high, hotels, offices, and apartment complexes are particularly prominent features of the cityscape. They resemble cut bamboo stalks, and almost appear to have sprouted like bamboo shoots after a rain.

I believe the country's steady growth and miraculous achievements in nation-building based mainly on oil money acquired from its production of 2.5 bbl/d of crude oil is largely attributable to H.H. Sheikh Zayed bin Sultan Al Nahyan, the former president who is widely recognized as the "Father of the Nation."

In the early 1960s until crude oil production began in Abu Dhabi, there were no hospitals, and schools were open-air facilities that simply taught the Quran under the shade of palm trees. The only livelihoods to speak of were collecting a modicum of pearls, fishing and nomadic herding. This year marks the 50th anniversary of Abu Dhabi Marine Operation Company (ADMA; an oil company based on Das Island that produces crude oil offshore of Abu Dhabi), but back when the company was first established, local workers were employed at low wages by Western oil development companies.

With respect to this situation, Sheikh Zayed made a courageous decision. He embarked on a review of agreements with Western oil companies, instructed Abu Dhabi National Oil Company (ADNOC) to take control of the resources of the entire oil industry, and established a system for management of oil riches. Through these initiatives, he built a nation on the country's vast income earned from oil. Furthermore, he parceled out residential land and land to build a commercial building or warehouse to all citizens of Abu Dhabi so that even people who had only ever engaged in fishing or camel herding could earn a living from the real estate or rental business. He also established a system that requires all companies in UAE to be sponsored by a UAE citizen in order to do business in the country. Under this system, powerful citizens have come to sponsor as many as 10 or more companies, and are now well protected by a preferential treatment that gives them the right to receive part of the companies' profits and sponsorship fees. Diverse other benefits are provided to such citizens,

including subsidies for education and medical expenses and pension funds. These changes have allowed people who had been making a living from nomadic herding and fishing 50 years ago to enjoy affluent lifestyles on the wealth gained from oil.

It was also Sheikh Zayed who organized Dubai and the northern emirates and formed the United Arab Emirates, and who contributed one trillion yen to support the country's economy in the wake of the 2009 Dubai debt crisis. I have nothing but respect for the late Sheikh of the leading emirate of Abu Dhabi.

Amid such national development, Sheikh Zayed's final accomplishment was the smooth transfer of power to his successor. Ultimately, after his death in 2004, Sheikh Khalifa, his son from his first wife, became the new emir and president of UAE, and Sheikh Mohammed, his son from his third wife, became the next Sheikh leader. The fact that there were no arguments regarding inheritance is also an attestation to the former president. Sheikh Mohammed is presently 51 years old, and has made significant achievements as is evident in Abu Dhabi's remarkable growth.

It is miraculous, in a sense, that Abu Dhabi and the rest of UAE have maintained a peaceful quiet amid the turmoil in neighboring countries, including the Arab Spring, the Syrian civil war, and nuclear development in Iran. As a country that upholds neutrality, Japan sees Abu Dhabi as a partner with whom it can establish a close and steady cooperative relationship, and an optimal stage for JCCP activities.

On another note, I would like to introduce life in Abu Dhabi.

Previously, when I worked at Abu Dhabi Oil Company, meals were never a problem as I dined in the company mess room. However, since being assigned to the JCCP Middle East Office in August, I began cooking for myself. This made me more conscious of food prices, and opened my eyes to the extremely low prices of staple foods and vegetables in Abu Dhabi.

A package of six butter rolls costs 1Dhs (23 yen), a high-quality croissant costs 0.75Dhs (17 yen), and diverse types of rice are available at an average price of about 100-300 yen/kg. As long as I do not eat lavishly in a hotel, living in Abu Dhabi is friendly on the wallet and comfortable. It is even said that the government subsidizes living expenses.

One of my favorite books, *From Rags to Riches*, provides a good description of the history and present state of Abu Dhabi. Written by Mohammed Al Fahim, a former aide to Sheikh Zayed, the book has been translated into many languages around the world. *Abu Dhabi Report* by Haruo Yamagami is also a good reference book among more recent publications. It provides good reading if you are interested.

Al Salam Alaykum, as they say here in Abu Dhabi. Peace be upon you.

Graduates' Voices

Mr. Mutlaq A. Al-Subaey

Superintendent, Southern Area Industrial Training Division, Saudi Aramco

Graduate of regular courses on Human Resource Management (May 2010) and Training Management (October 2004)

I am delighted to contribute to JCCP NEWS as a JCCP graduate.

I am a superintendent at the Southern Area Industrial Training Division of Saudi Aramco in the Kingdom of Saudi Arabia. The Southern Area Industrial Training Division is a training organization under the Training & Development/Industrial Training Department at Saudi Aramco, mandated to train the future workforce of our company.

As a result of my participation in two JCCP regular courses on Human Resource Management (2010) and Training Management (2004), the training we deliver has been guided by the principles I have acquired in the courses. We strive to offer courses that pertain to the real needs or requirements of our customers, place top priority on the quality of our training and graduates rather than on quantity, consistently improve the skills and knowledge of our instructional employees in response to changing demands for technologies, and provide a pleasant training environment to our trainees.

My participation in the two JCCP courses was a memorable experience from which I acquired general and up-do-date knowledge about human resource development and training management. However, what I found most interesting was learning about Japanese styles and perspectives for improving management skills for human resources and training. Fields trips to successful business institutions in Japan were also highly meaningful, as they provided an opportunity to witness actual HRD practices and training in action and receive detailed explanations about the process of achieving success based on HRD and training management principles. Moreover, holding intercultural exchanges with participants from different countries through day-to-day training activities was a particularly invaluable experience.

I wish JCCP continued success and prosperity.

Mr. Jamal Mohamed Agrien

Supervisor of Automatic Control System, Instrumentation Division, Ras Lanuf Oil and Gas Processing Co. (RASCO), Libya

Graduate of a regular course on Advanced Field Devices & Control (October 2009)

I participated in a regular course on Advanced Field Devices & Control (TR-13-09) in FY2009.

One of the greatest benefits of having participated in a JCCP regular course is that I acquired insight into understanding the Japanese people. The course took us to various cities in Japan to visit industrial companies such as Yokogawa Electric Corporation, Yamatake Corporation (now known as Azbil Corporation), Idemitsu Kosan Co., Ltd., and Shinkawa Electric Co., Ltd. These trips exposed us to Japanese society in action, and not only helped us understand Japanese people's way of thinking, but also provided a glimpse into the secret of how the Japanese became such hardworking people. Even now after returning to my country, I wish to visit the great country of Japan once more and learn more about Japanese culture.

By participating in a JCCP course, I was able to improve myself in my position at work, and as the course covered practical aspects of control systems, I came to undertake more duties and responsibilities as a supervisor of automatic control systems.

I hope to return to Japan someday to participate in a regular course on advanced process control or model predictive control. I am convinced that my participation in another JCCP course would be greatly beneficial not only to me, personally, but also to future cooperation between RASCO and JCCP.

Announcement

The 31st JCCP International Symposium

JCCP invites oil experts from oil-producing countries to Japan every year and hosts an international symposium to promote dialogue and cooperation between oil-producing countries and Japan. The symposium will be held again this year, as shown below.

■ **Date & Time:** January 30, 2013 (Day 1)
14:00 – 17:20 Opening ceremony, Keynote speech, Guest speeches
18:00 – 20:00 Reception
January 31, 2013 (Day 2)
9:30 – 12:00 Session I
13:30 – 16:00 Session II

■ **Venue:** Hotel Okura Tokyo (http://www.hotelokura.co.jp/tokyo/)
Orchid Room (annex 2nd floor)

■ **Main theme:** Communication and Cooperation: For Sustainable Future of Oil Industry

■ **Session themes:** (Session 1) Change of Business Environment in Oil Downstream and Human Resources Development
(Session 2) Change of Business Environment in Oil Downstream and Innovation of Technology

■ **Program and Panelists:** Please see JCCP's website (http://www.jccp.or.jp)

■ **Contact:** International Symposium Secretariat
Mr. Koji Io, Operations Dept.
Phone: (+81)-3-5396-6000 / Fax: (+81)-3-5396-6006 /
Email: symposium@jccp.or.jp

Announcement

The 21st Joint GCC-Japan Environment Symposium

The Joint GCC-Japan Environment Symposium brings together environmental experts from the GCC countries and Japan to promote shared awareness of environmental improvement and conservation measures through mutual discussions and information exchanges. It is held in a different GCC country every year, and will be held again this fiscal year, as shown below.

■ **Dates:** February 5 – 6, 2013
February 5 (Day 1) Opening ceremony, Symposium session
February 6 (Day 2) Symposium session, Forum session, Closing ceremony

■ **Country:** Doha, Qatar

■ **Venue:** Sharq Village Hotel (http://www.sharqvillage.com/)

■ **Co-organizer:** Qatar Petroleum

■ **Main theme:** Sustainable Environment, Climate Change and Renewable Energy for Oil and Gas Industry

■ **Presenters** (planned)**:** Japan – 1 keynote speaker, 5 – 6 speakers
GCC countries – 18 speakers (from Qatar, Saudi Arabia, Kuwait, UAE, Bahrain, Oman)

■ **Contact:** Environment Symposium Secretariat
Mr. Yukiteru Watanabe or Ms. Mieko Onai, Technical Cooperation Dept.
Phone: (+81)-3-5396-8021 / Fax: (+81)-3-5396-8015
Email: environment-sympo@jccp.or.jp

Announcement

Please Help Us Update Our Roster

Thank you for reading *JCCP NEWS* as always.

JCCP has reached a significant milestone in its history and celebrated 30 years of operations last November.

In commemorating this achievement, we extended our deepest appreciation to you all for your support and cooperation in our activities.

All of you who have participated in a JCCP training program in the past (graduates) are a precious asset to JCCP. We therefore wish to take this occasion to confirm your current addresses and update our roster of former participants so that we may reconnect and maintain contact with you into the future.

Our current roster mostly shows information that you provided at the time you participated in a JCCP training program, and could be outdated by now. If there have been any changes in your affiliation (position), email address, or any other contact information, we ask that you provide the latest information on the attached form and return the form to JCCP's Planning & Public Relations Group. Those of you who return the form to us are entitled to receive the latest issues of *JCCP NEWS* and announcements and invitations to exhibitions and reunions.

Also, if you know of anyone who is a former participant but is not receiving copies of *JCCP NEWS*, or anyone who wishes to update his/her contact information, we would appreciate it if you would forward this message and the attached form to that person.

Please Send Us a Message as Alumni

Future issues of *JCCP NEWS* will feature a new section for messages from alumni. Please send us the latest news about what you are up to or photos that you wish to share with others. The Planning & Public Relations Group looks forward to hearing from you.

Thank you for your cooperation.

Yoshi Tanda, General Manager, Planning & Coordination
Masumi Kitahara (Ms.), Manager, Planning & Public Relations

Personnel Changes

Middle East Office

Outgoing Personnel

Shoichiro YAGI

Technical Cooperation Department
↓
Middle East Office

Transfer Personnel

Jun NISHIMURA

Editorial Postscript

H.H. Dr. Turki Saud Mohammed Al-Saud, Vice President for Research Institutes at KACST (Saudi Arabia), kindly contributed a message to this issue of *JCCP NEWS*. We are delighted with His Highness's heartwarming message, which expresses his strong wish to strengthen bonds between Saudi Arabia and Japan through JCCP activities.

We also received an update report from two JCCP course graduates. They say they have acquired much experience and knowledge from JCCP training, as well as from Japanese culture and customs, and are effectively applying what they have learned in Japan to their present work. We hope to publish update reports from other graduates again in the next issue of *JCCP NEWS*.

This year, the general managers of the JCCP Riyadh and Abu Dhabi Offices have changed, as introduced in the section on "Tidings from the Middle East" in this newsletter. As both new general managers have resided in the Middle East a number of times, their messages reflect their fondness for their country of residence in the Middle East. When visiting Abu Dhabi or Riyadh, please pay a visit to the JCCP Office in those cities.

Masumi Kitahara
JCCP News Editor
Planning & Public Relations Group

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