Japan Cooperation Center, Petroleum

JCCP NEWS

No. 116 2013 September

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Topics

JCCP NEWS No. 116 September 2013

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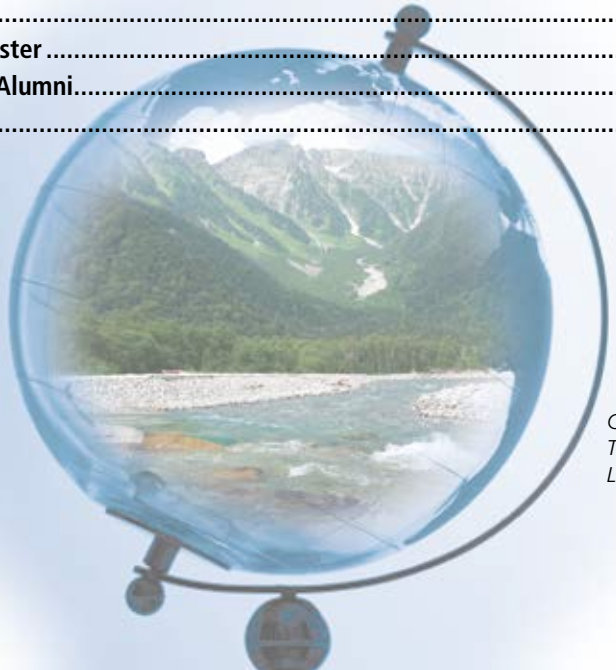

Cover photo
Taken by: Minoru Horike, Training Dept.
Location: Kamikochi (Hodaka Mountains and Azusa River)

Special Message

Engr. Andrew Laah Yakubu

Group Managing Director, Nigerian National Petroleum Corporation (NNPC)

Participant of a regular course on Essential Petroleum Refining for Process Engineers (TR-9-85) offered in July 1985

I was indeed elated to be invited to speak at the 31st JCCP Symposium held in January 2013. My visit to JCCP brought back nostalgic memories of the lectures, experience and fun of participating in course TR-9-85 on Essential Petroleum Refining for Process Engineers from July 3 to August 2, 1985, more than 28 years ago. As a young engineer, the experience and exposure I gained from the course were quite fascinating, as it broadened my horizon and understanding of the petroleum industry and refining, in particular.

I vividly remember my fruitful interactions with experienced and seasoned refinery operators during the course. The field trips also offered invaluable insight into the country, the people and Japanese-style management. There is no doubt the scintillating experience I gained in the course has been of immense benefit to my career.

Judging by the organization of the symposium, I am convinced that JCCP has, over the years, sustained and maintained a very high standard of programs, and would like to commend the JCCP management and staff for keeping faith with the underlying objective of the organization.

The conducive and dynamic learning environment, coupled with dedicated faculties drawn from the industry, makes JCCP programs top level programs that are worth attending by future industry leaders. This is indeed a testament to JCCP's commitment to continuous improvement and drive for excellence.

Looking into the future, I see that JCCP will continue to inculcate knowledge of the industry to participants with a view to further bringing harmony amongst producer and consumer countries for the benefit of all.

Mr. Yakubu's participation in a JCCP regular course in 1985 (front row, third from left)

The 21st Joint GCC-Japan Environment Symposium

(Follow-up Report)

Members of the symposium

JCCP and Qatar Petroleum (QP) co-hosted the 21st Joint GCC-Japan Environment Symposium on February 5 and 6, 2013 in Doha, Qatar, under the theme of "Sustainable Environment, Climate Change and Renewable Energy for Oil and Gas Industry."

The opening ceremony was held on February 5th, with opening speeches given by Dr. Ali Hamed Al-Mulla, Manager of Corporate Environment & Sustainable Development at QP; H.E. Mr. Kenjiro Monji, Japanese Ambassador to Qatar; and Mr. Morihiro Yoshida, Managing Director of JCCP. An audience of more than 160 speakers and participants filled the venue, including Dr. Takashi Tatsumi, Director and Executive Vice President of Tokyo Institute of Technology (leader of the Japanese delegation).

Dr. Al-Mulla formally called the symposium to order and expressed his pleasure of holding the Joint GCC-Japan Environment Symposium in Qatar for the second time in cooperation with JCCP. Ambassador Monji stressed that the symposium theme, "Sustainable Environment, Climate Change and Renewable Energy for Oil and Gas Industry," is an important issue not only to Japan and the GCC countries, but also to the rest of the world. He also said he hopes Japan can contribute with its knowledge and experience to the issue here in Qatar, which has just recently hosted a successful COP18 conference. Mr. Yoshida expressed JCCP's wish to contribute to reducing CO_2 emissions and addressing environmental issues through training and technical cooperation, and then thanked H.E. Dr. Mohammed bin Saleh Al-Sada, Minister of Energy and Industry, and QP for their strong support of the symposium.

Following the opening ceremony, Dr. Tatsumi gave a keynote speech on "Tackling Challenges to Sustainable Energy and Environment." He said that historically economic growth and energy consumption are closely

Dr. Takashi Tatsumi, leader of the Japanese delegation

Symposium audience

correlated, it is necessary to develop more efficient energy production and energy utilization technologies in the future. To achieve these goals, he stressed the need for drastic changes in people's consciousness toward industrial structure and energy conservation. Dr. Tatsumi also lectured that worldwide increases in energy demand will be countered in the short term by saving energy and storing/reusing CO_2 while also utilizing nuclear power and biomass. In the long term, photovoltaic power will be a core source of renewable energy.

Following the keynote speech, a total of 23 technical papers were presented by experts from the GCC countries and Japan, divided into three presentation sessions and a forum. Session 1 featured "Carbon Capture & Storage, Alternative Energy Applications," Session 2 "Oil and Gas Industry Environmental Issue," and Session 3 "Protection of the Marine Environment, Wastewater Treatment."

The panelists of Session 1 included two Japanese speakers. Mr. Soichi Ogawa (Deputy General Manager, Global Business Support Division, Solar Frontier K.K.) gave a presentation titled "CIS Technology Contribution to the Middle East Energy Business," and Mr. Mitsunori Shimura (Deputy Executive General Manager, Technology Development Unit, Chiyoda Corporation) a presentation titled "Development of Large-scale H_2 Storage and Transportation Technology with Liquid Organic Hydrogen Carrier (LOHC)."

Session 2 included presentations by two Japanese speakers. Mr. Hidemitsu Saito (Manager, Global Technical Cooperation Group, Overseas Business Division, JX Nippon Oil & Energy Corporation) spoke about "Technologies for Volatile Organic Compounds (VOC) Recovery in Petroleum Industry and JX's Activities in Middle East Area," and Mr. Toshiyasu Morita (Assistant Group Manager, Environment & New Energy Technology Development, Cosmo Engineering Co., Ltd.) about "Technical Support for Environmental Improvement of the Refineries in Middle East Countries."

In Session 3 held on the February 6th, Mr. Rajeev Supekar (Sales Director, Infrastructure Business Division, International Sales and Marketing Unit, Toyo Engineering Corporation) discussed "Improvement of Industrial Wastewater Treatment and Enhancement of Water Recycle with Zero Liquid Discharge (ZLD) Application in the Existing Refinery and Petrochemical Facilities."

In addition to the presentation sessions, a forum that focused specifically on environmental issues in refineries was held as a new initiative in the symposium. With the aim of achieving cross-cutting discussions on environmental issues among refineries in the GCC countries, members from GCC and Japanese refineries gave presentations under the theme of "Best Environmental Practices in Refineries," with Dr. Al-Mulla presiding over the forum. In addition to active exchanges of views, presentations were given on environmental initiatives related to refinery operations, including a presentation by Mr. Hiroaki Mimura (Instrumentation & Control Engineer, Technology & Engineering Center, Idemitsu Kosan Co., Ltd.) on "Importance of Alarm Management for Preventing Accidents which Lead to Environmental Pollution." Although it was the first undertaking of its kind, the forum provided a unique opportunity for lively discussions based on presentations given by each speaker on air pollution countermeasures, wastewater treatment, waste processing and other such environmental issues, and proved to be a productive forum for active exchanges of information on environmental issues in refineries.

The sessions and forum held over the course of the two-day event introduced Japan's advanced environmental technologies and the serious approaches to environmental issues made by the GCC countries,

Forum

and provided an ideal platform for GCC environmental experts to share and exchange knowledge on a wide range of environmental issues.

After the forum, Dr. Al-Mulla closed the symposium by summarizing the two days of discussions and expressing his gratitude to all symposium participants, JCCP and QP personnel.

It is also worth noting that a press conference was held after Dr. Tatsumi's keynote speech on the first day. Dr. Al-Mulla and Mr. Yoshida responded to questions from the press, mainly about the significance of holding the environment symposium in Qatar and prospects for cooperation between Qatar and Japan in the energy sector. News of the press conference and symposium was extensively reported in seven local newspapers on the following day (three English-language newspapers and four Arabic newspapers), and contributed to increasing public recognition of JCCP's presence in Qatar.

In the meantime, preceding the opening of the symposium, the Japanese delegation was given the honor of visiting with H.E. Dr. Al-Sada, Minister of Energy & Industry and Chairman & Managing Director of QP. On February 4th, Dr. Tatsumi, Mr. Yoshida, Mr. Junichi Kasuya, General Manager of the JCCP Riyadh Office, and Mr. Yukiteru Watanabe, Deputy General Manager of the Technical Cooperation Department at JCCP, made a courtesy visit to the Minister.


The Peninsula

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QP, JCCP hold environment symposium

Local newspaper article

Taking the opportunity of this newsletter, JCCP would like to express its deepest appreciation to everyone who cooperated in the successful implementation of the symposium.

<by Sadao Wada, Technical Cooperation Dept.>

FY2012 Joint GCC-Japan Environment Symposium Program

Opening Ceremony		
Keynote Speech	Japan	Prof. Dr. Takashi Tatsumi Executive Vice President for Research, Tokyo Institute of Technology "Tackling Challenges of Sustainable Energy and Environment"

	Country	Title	Speaker/Organization
Session 1: Carbon Capture & Storage, Alternative Energy Applications Session Chair: Dr. Muhammad Hassan Al-Malack (KFUPM/Saudi Arabia) Session Co-chair: Dr. Ali H. Al-Marzouqi (UAEU/UAE) Mr. Sadao Wada (JCCP/Japan)			
1	Saudi Arabia	CO_2 Capture and Sequestration: Overview of Research Efforts Supporting Sustainable Environment in Saudi Arabia	Mr. Abdulwahab Zaki Ali M. Abdullah King Fahd University of Petroleum & Minerals
2	Japan	Potential Contribution of Solar Frontier's CIS Technology to the Middle East Energy Business	Mr. Soichi Ogawa Solar Frontier K.K.
3	Oman	Renewable Energy Application in Oil & Gas Industry	Dr. Ali Al-Alawai Petroleum Development Oman

4	Qatar	Assessment of Solar and Wind Energy Potential in Qatar	Dr. Pitta Govinda Rao Qatar Petroleum
5	Japan	Development of Large-scale H_2 Storage and Transportation Technology with Liquid Organic Hydrogen Carrier (LOHC)	Mr. Mitsunori Shimura Chiyoda Corporation
6	Kuwait	Application of Renewable Energy in the Petroleum Industry	Dr. Mamun Halabi & Dr. Ayman Al-Qattan Kuwait Institute for Scientific Research
7	Qatar	Qatar Carbonates and Carbon Storage Research Centre: Status Update after Three Years of Fundamental Research	Dr. Jurgen Foeken Qatar Petroleum

Session 2: Oil and Gas Industry Environmental Issues Session Chair: Dr. Mohammad Albeldawi (QP/Qatar) Session Co-chair: Dr. Ayman Al-Qattan (KISR/Kuwait) Mr. Hiroaki Mimura (Idemitsu Kosan Co., Ltd./Japan)			
1	Qatar	Oryx GTL Experience in Flaring Reduction: Challenges & Opportunities	Mr. Mansoor Al-Marri Oryx GTL
2	Japan	Technologies for Volatile Organic Compounds (VOC) Recovery in Petroleum Industry and JX's Activities in the Middle East Region	Mr. Hidemitsu Saito JX Nippon Oil & Energy Corporation
3	Japan	Technical Support for Environmental Improvement of the Refineries in Middle East	Mr. Toshiyasu Morita Cosmo Engineering Co., Ltd.
4	UAE	Water Sensitive Urban Design (WSUD)— A Measure of Climate Change Adaptation	Dr. Rezaul Kabir Chowdhury UAE University
5	Saudi Arabia	Sustainable Energy and Environment Objectives, Challenges, the Needs and the Road Map	Dr. Alaadin A. Bukhari King Fahd University of Petroleum & Minerals
6	Qatar	Flare Mitigation Efforts in QP's NGL Complex and Its Contribution to Qatar's Sustainable Development	Mr. Abdulla Al-Qahtani Qatar Petroleum

Session 3: Protection of the Marine Environment, Wastewater Treatment Session Chair: Mr. Hamed Al Rumhi (ORPIC/Oman) Session Co-chair: Mr. Mohamed Al Amei (TAKREER/UAE) Mr. Toshiyasu Morita (Cosmo Engineering Co., Ltd./Japan)			
1	Japan	Improvement of Industrial Wastewater Treatment and Enhancement of Water Recycling with ZLD Application in the Existing Refinery and Petrochemical Facilities	Mr. Rajeev Supekar Toyo Engineering Corporation
2	UAE	Modeling Bioremediation of Oil Spills in Contaminated Groundwater Aquifers Using Slow-releasing Oxygen Sources	Dr. Mohamed Mostafa UAE University
3	Qatar	Application of Geospatial Analyses in Environmental Planning, Sea-level Modeling and Geosciences Research	Mr. Rob Ross Qatar Petroleum
4	Qatar	Evaluation of Environmental Performance and Impact Study on Marine Life around the QP Offshore Facility—North Field Alpha	Mr. Sajjan Khan Qatar Petroleum

Forum:	Best Environmental Practices in Refineries Session Chair: Dr. Ali Hamed Al-Mulla (QP/Qatar) Session Co-chair: Mr. Jun Nishimura (JCCP/Japan)		
1	Japan	Importance of Alarm Management for Preventing Accidents which Lead to Environmental Pollution	Mr. Hiroaki Mimura Idemitsu Kosan Co., Ltd.
2	Kuwait	Air Emission Management—KNPC Experience	Mr. Abhay Kumar Kashyap Kuwait National Petroleum Co.
3	Bahrain	Management of Hazardous Waste—BAPCO Approach	Mr. Ijaz Ashraf & Mr. Abdulla Al Ansari The Bahrain Petroleum Co.
4	Qatar	QP Refinery Waste Water Treatment Challenges and the Zero Liquid Discharge (ZLD) Initiative	Mr. Nadeem Shakir QP Refinery
5	UAE	BeAAT [Central Environment Protection Facilities] An Overview of BeAAT Plant	Mr. Jassim Jawas TAKREER
6	Oman	Solutions for the Re-use of Spent Catalyst from RFCC	Mr. Hamed Al Rumhi Oman Oil Refineries and Petroleum Industries Co.

Joint Conference with OAPEC

JCCP and the Organization of Arab Petroleum Exporting Countries (OAPEC) co-hosted a conference themed "Options for Heavy Crude Oil Refining in Arab Countries" from February 12 to 14, 2013, with the attendance of H.E. Eng. Osama Mohamed Kamal Abdel Hamid, Minister of Petroleum and Mineral Resources of Egypt, and H.E. Mr. Norihiro Okuda, Ambassador of Japan to Egypt. Approximately 160 people participated in the conference held at the JW Marriott Hotel in Cairo, Egypt.

At the opening ceremony, speeches were given by the two above-mentioned guests of honor, and also by H.E. Mr. Abbas Al-Naqi, Secretary General of OAPEC, and Mr. Morihiro Yoshida, Managing Director of JCCP.

1. Summary of Opening Speeches

H.E. Eng. Osama Mohamed Kamal Abdel Hamid:

It gives me pleasure to join you in participating in the opening ceremony of the OAPEC-JCCP joint conference, and extend my appreciation to all who have offered their cooperation in preparing for this event. The theme of the conference is highly relevant to the oil refining industry, which has large bearing on the development of each country and its economic growth. Technical development in the industry plays a positive role in optimizing the use of resources and in strengthening competitive production in response to global demand while also giving consideration to environmental protection. Therefore, the forthcoming period requires our utmost concerted efforts in the areas of technology transfer, absorption, adaptation and development of advanced technology. OAPEC is expected to play a role in stimulating cooperation and development and promoting scientific research in Arab oil-producing countries. I wish all participants the success of this conference.

H.E. Mr. Norihiro Okuda:

It is indeed a great honor and privilege to be invited to deliver a speech today, and wish to thank all parties concerned for their organization of this conference and for selecting a highly timely and important theme. The fact that fossil fuels have been and will remain absolutely indispensable to human lives is demonstrated by the steady increase of its demand in recent years, but there will come a time when production will not be able to keep up with demand in some countries. This is why

(From the left)
H.E. Mr. Abbas Al-Naqi, Secretary General of OAPEC;
H.E. Eng. Osama Mohamed Kamal Abdel Hamid, Minister of Petroleum and Mineral Resources of Egypt;
H.E. Mr. Norihiro Okuda, Ambassador of Japan to Egypt;
Mr. Morihiro Yoshida, Managing Director of JCCP;
Dr. Samir M. Elkareish, Director of the Technology Dept. at OAPEC

heavy crude oil, which had not been effectively utilized until recently, is now garnering attention. Crude oil will stabilize the world's supply-demand balance and generate revenue in oil-producing countries, but many technical issues related to heavy oil refining need to be overcome in order for this to happen. Hence, this is what makes this conference timely and beneficial. Japan has outstanding experience and technologies in the field, and is one of the best partners to oil-producing countries aspiring to expand the utilization of heavy oil.

H.E. Mr. Abbas Al-Naqi:

I am deeply honored to welcome you all to this conference co-hosted by JCCP and OAPEC with support from the Egyptian Ministry of Petroleum and Mineral Resources. Please allow me to express our sincere thanks and appreciation to H.E. Eng. Osama Mohamed Kamal Hamid for his support of the conference and for lending his presence today, and would also like to extend my gratitude to members of Egyptian General Petroleum Corporation (EGPC), who provided their efforts to implementation of the conference, and to H.E. Mr. Amr Abdul-Halim, representative of Egypt in OAPEC, who supported the organizing committee.

Conference in session

This conference is being held for the second time in cooperation between OAPEC and JCCP, one of the most important technical centers in Japan's oil downstream sector, and has become one of OAPEC's principal annual events. The oil refining industry is facing an increase of global demand to pursue high-quality oil products while satisfying environmental standards, and stands at the starting line to a global-level challenge. Heavy crude oil requires special processing technologies to upgrade, due to its high viscosity and impurity content, and thus the industry is researching achievable solutions for overcoming this difficulty. The Arab countries possess large reserves of medium and heavy oil crudes containing large percentages of impurities. For this reason, OAPEC countries are endeavoring to renovate their existing refineries, launch new projects to transform cheap heavy crude oil into high value light products, and avoid losses from selling at low prices. I wish this conference every success.

Mr. Morihiro Yoshida:

It is my great honor to be here in Cairo to attend this joint conference between OAPEC and JCCP under the patronage of the Minister of Petroleum and Mineral Resources of Egypt. JCCP was founded in 1981

with a mission to promote mutual understanding and relationships between oil-producing countries and Japan through personal exchanges and technical cooperation. With support from the Japanese government, JCCP has so far received more than 20,000 participants to training courses, has sent some 5,000 experts to oil-producing countries, and has implemented 240 or so technical cooperation projects mainly in this Arab region.

OAPEC and JCCP have engaged in a cooperative relationship since 2010, when a Letter of Intent (LOI) to establish the relationship was exchanged in Tunis between H.E. Mr. Amr Mohammed Moussa, Secretary General of the Arab League, and H.E. Mr. Akihiro Ohata, Japanese Minister of Economy, Trade and Industry. This second joint conference is being held in line with the LOI, with the participation of five Japanese presenters. We hope to somehow contribute to the OAPEC member countries the broad range of expertise and advanced technologies Japan has developed in diverse fields including the oil downstream sector. Lastly, I wish to thank the secretariat of OAPEC, the Egyptian Ministry of Petroleum and Mineral Resources, EGPC and Middle East Oil Refinery (MIDOR) for their effort in this successful joint conference.

2. Background and Objectives of Cooperative Projects with OAPEC

JCCP's relationship with OAPEC had its beginnings in May 2009, when the OAPEC Secretariat approached JCCP with an enquiry about a possible scheme of mutual cooperation. After a series of discussions, the two sides signed an LOI in 2010 as verification of their intent to establish a cooperative relationship. Since then, JCCP has been actively strengthening its cooperative ties with the multinational institution while also establishing friendly relationships with its member countries through technical exchanges and exchanges of experts based on Japan's knowledge and experience in the oil downstream sector.

(OAPEC member countries (10): Kuwait, Saudi Arabia, Libya, UAE, Bahrain, Qatar, Algeria, Iraq, Syria, Egypt)

3. Technical Sessions

The technical sessions that took place on the 12th and 13th featured 17 speakers, including five Japanese speakers, divided into four tracks. After each presentation, an active Q&A ensued, indicating the audience's strong interest in the topics presented.

The names and titles of presentations by the Japanese speakers (commissioned speakers) are as follows (random order).

(1) Mr. Isao Mochida (Professor, Kyushu University)
"Characterization and reactivity of atmospheric residue in HDM and HDS"

(2) Mr. Toshimasa Takanohashi (Leader, Advanced Fuels Group, Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology)
"Upgrading of Heavy Oil by Solvent-induced Relaxation of Asphaltene Aggregates"

(3) Mr. Hidenori Oe (General Manager of Facilities Engineering Dept., Arabian Oil Company)
"Application of EUREKA Thermal Cracking Process for Heavy Crude Oil Upgrader"

(4) Mr. Hirobumi Wada (Principal Process Engineer, JGC Corporation)
"Selection of Bottom Upgrading Process"

(5) Mr. Shigetaka Fujii (Engineering Consultant, Refinery, Petrochemical & New Energy Process Engineering Unit, Chiyoda Corporation)
"Introduction of Slurry Phase Hydrocracking (SPH) Process"

On the 14th, the conference members completed their agenda with a visit to MIDOR's refinery facilities in Alexandria.

<by Hironao Naganuma, Technical Cooperation Dept.>

Executive Meetings in Saudi Arabia and Oman

Mr. Masataka Sase, Executive Director of JCCP, visited JCCP counterpart organizations in Saudi Arabia and Oman from May 17 to 23, 2013 to propose requests for presentations at the 32nd JCCP International Symposium and to hold policy dialogues regarding JCCP activities. He was accompanied by Akio Yamanaka, Executive Councilor at JCCP; Junichi Kasuya, General Manager of the JCCP Riyadh Office; and Jun Nishimura, General Manager of the JCCP Middle East Office.

1. Saudi Arabia

(1) International Energy Forum (IEF) Headquarters (May 18)

The JCCP delegation visited IEF Headquarters in Riyadh and met with Dr. Aldo Flores-Quiroga, Secretary General, to give a broad outline of next year's JCCP International Symposium and to request a keynote speech from him at the symposium. Dr. Flores-Quiroga said he takes keen interest in Japan, and wishes to accept the offer if his schedule could be accordingly arranged. In turn, he requested JCCP's participation in IEF activities, such as by implementing workshops and training programs at IEF Headquarters based on JCCP's vast experience in providing training. The delegation thus agreed to examine potential schemes for cooperation with IEF in the future.

At IEF: Dr. Aldo Flores-Quiroga, Secretary General (second from right)

(2) Petro Rabigh (May 19)

JCCP receives Saudi Arabian participants to its training courses not only from Saudi Aramco, but also from Petro Rabigh, albeit in small numbers, but this was JCCP's first visit to the company. The delegation met with Mr. Salem A. Al Baddad, Assistant Supervisor and received requests for the acceptance of larger numbers of participants from Petro Rabigh and for the implementation of an expert dispatch program or special course on corrosion and corrosion prevention. The delegation gave word that they will take these requests back to JCCP for consideration.

At Petro Rabigh

(3) King Abdulla University of Science and Technology (KAUST) (May 19)

The JCCP delegation next visited KAUST as a potential counterpart for technical cooperation projects. Dr. Kazuhiro Takanabe, Associate Professor at the university, provided a general overview of the present state of the university and took the delegation on a tour of the campus. KAUST is a graduate university that opened in 2009. It is the first co-ed university in Saudi Arabia, and currently has approximately 700 students. Tuition is free. With plans to increase enrolment to the 2,000 level in the future, the university is outfitted with a core laboratory and the world's leading-edge laboratory equipment for use by all departments. The faculty is presently composed of around 100 members, but is

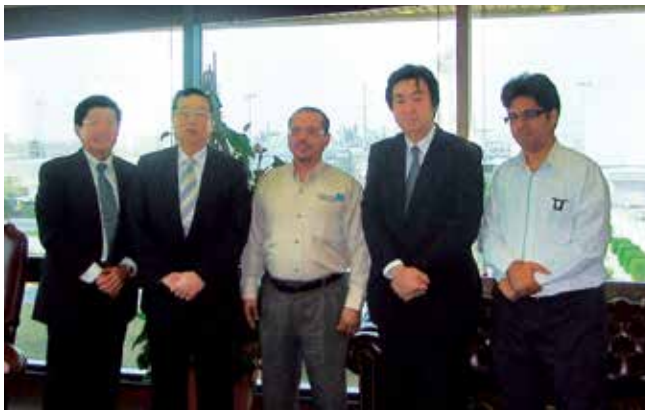
planned to be augmented in the future to 200. Students come from around the world, with Asian students comprising the largest majority of 33%. Most are from China and India, with none from Japan (one student is scheduled to enroll in September). Saudi Arabian students make up 20% of the total student population, but measures are being taken to increase that percentage to around 50% in the future. The campus and residential community face the Red Sea, and boast an impressive environment complete with welfare and recreation facilities (medical fees are free).

Saudi Aramco contributed funding for establishment of the university, and is strengthening its relationship with the university as one of its largest sponsors. JCCP should perhaps also explore specific means for cooperation with the university.

(4) Jeddah Refinery, Saudi Aramco (May 20)

At the Jeddah Refinery, the JCCP delegation met with Mr. Abdullah A. Al-Deraibi, Manager, and Mr. Ahmed A. Rajab, Superintendent, and exchanged views on training needs and other issues regarding training. Mr. Al-Deraibi participated in a JCCP course in 1989, and gives high marks to JCCP's training program, compared to Western training programs. He noted that his strongest concern is to address the urgent issue of preventing and minimizing human error in the operation departments, so the delegation offered to consider a special course on the issue.

During the delegation's meeting with Mr. Al-Deraibi, Mr. Omar S. Bazuhair, Executive Director, Refining & NGL Fractionation, who happened to be visiting the refinery from the head office of Saudi Aramco, dropped by. He thanked JCCP for its assistance in the area of human resource development, and asked for its continued support.



At Jeddah Refinery:
Mr. Ahmed A. Rajab, Superintendent (center)

(5) Japanese Embassy in Saudi Arabia (May 18)

The JCCP delegation paid a call on H.E. Mr. Jiro Kodera, Ambassador, to explain JCCP's plan to hold a JCCP alumni meeting in Saudi Arabia as an overseas network project for this fiscal year, and to request the Ambassador's attendance if the plan is realized. Ambassador Kodera, in turn, provided suggestions and invaluable advice for holding such a meeting in Saudi Arabia.

2. Oman

(1) Omani Ministry of Oil and Gas (May 21)

The JCCP delegation paid a courtesy call on Dr. Mohammed Hamed Saif Al Rumhy, Minister of Oil and Gas. It was the first time in five years for the minister and Mr. Sase to meet with each other. Dr. Al Rumhy expressed strong interest in recent affairs in Japan, and asked about the political and economic situations in Japan under the Abe administration. He also talked about his life at Waseda University back when he studied in Japan and contributed to the friendly atmosphere of the meeting, but had firm policies in regard to student exchange programs.

At the Omani Ministry of Oil and Gas:
Dr. Mohammed Hamed Saif Al Rumhy, Minister (center)

(2) Oman Refineries and Petroleum Industries Company (ORPIC) (May 21)

The JCCP delegation next visited ORPIC's Mina Al Fahal Refinery and met with Mr. Musab Al Muhrqi, CEO. Mr. Al Muhrqi demonstrated good knowledge about JCCP, and expressed his appreciation of JCCP training programs and technical cooperation projects. He also discussed training needs in the petrochemical sector. The delegation requested Mr. Al Muhrqi's participation

At ORPIC: Mr. Musab Al Muhrqi, CEO (center)

in next year's JCCP International Symposium as a panelist, and Mr. Al Muhrqi said he would like to accept the offer if his schedule permits, as it would be his first visit to Japan.

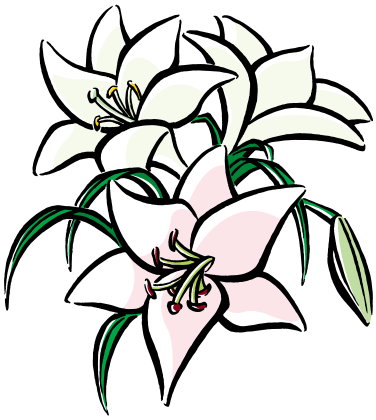
(3) Japanese Embassy in Oman (May 21)

At the Japanese Embassy in Oman, the delegation met with H.E. Mr. George Hisaeda, Ambassador, and reported on the status of JCCP activities in Oman, as well as on Minister Al Rumhy's request for an exchange study program, among other matters. The Ambassador, for his part, provided enlightening information about Oman, such as the status of education and training that is sought in Oman to help the younger generation find employment.

3. Summary

The visits to the two countries yielded positive results concerning the participation of key figures in next year's JCCP International Symposium. Moreover, through policy dialogues, JCCP received a strong request for uniquely Japanese training from the manager of Jeddah Refinery himself, and a request for training on new subjects from the CEO of ORPIC. Given the dynamic changes taking place throughout the oil industry, the delegation keenly felt the need to hold executive meetings on a regular basis, and to reflect the invaluable opinions obtained through such meetings to actual operations and activities.

<by Akio Yamanaka, Councilor, Administration Dept.>



VIP Invitation Program
Mr. Abdulla Al-Abdulmalek, Executive Director-Administration of Tasweeq, Visits Japan

Mr. Abdulla Al-Abdulmalek, Executive Director-Administration, and Dr. Majid Ibrahim, Head of Learning & Development, from Qatar International Petroleum Marketing Company Ltd. (Tasweeq) visited Japan from May 16 to 22, 2013 in response to an invitation extended to them by JCCP under the VIP Invitation Program, which is implemented with the objective of strengthening relationships with oil-producing countries.

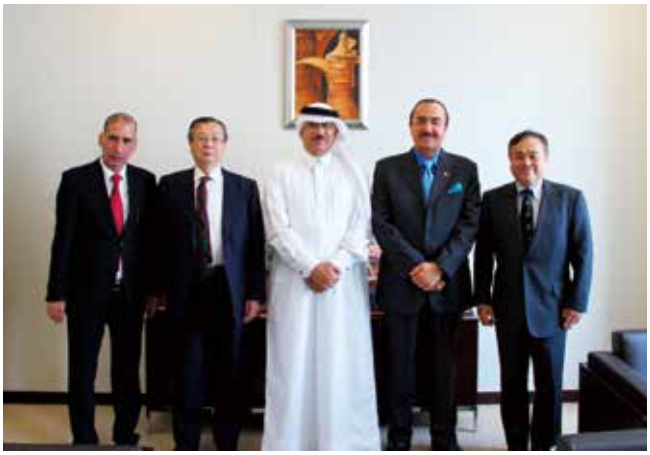
1. Overview of Tasweeq and Background to the Invitation

Tasweeq was incorporated in 2007 as a wholly-owned company of the Government of Qatar. In addition to being responsible for the export marketing of regulated products, including liquefied petroleum gas (LPG), refined products, condensates and sulfur, it also markets non-regulated products such as crude oil and GTL entitlements on behalf of Qatar Petroleum (QP) under an agency agreement. As a major sales contact in Qatar, Tasweeq is an important business partner to Japan's oil industry. JCCP has thus established close ties with the company to date, through training programs held at the initiative of both JCCP and member companies.

To further strengthen Japan's ties with the crude oil and oil marketing company in one of the most important oil-producing countries, JCCP invited Mr. Al-Abdulmalek, the overall person in charge of training matters at Tasweeq, to visit Japan and deepen his understanding of the oil situation in an oil-consuming country.

2. Visits to METI and Japanese Companies

During their stay in Japan, the two executives from Tasweeq made visits to the Agency for Natural Resources and Energy in the Ministry of Economy, Trade and Industry; JX Nippon Oil & Energy Staging Terminal Corporation; Central Japan International Airport Co., Ltd.; Idemitsu Kosan Co., Ltd.; Cosmo Oil Co., Ltd.; and Astomos Energy Corporation.



Mr. Abdulla Al-Abdulmalek, Executive Director-Administration (center); H.E. Mr. Yousef Mohamed Bilal, Ambassador (second from right); and Dr. Majid Ibrahim, Head of Learning & Development (left)

At the Petroleum Refining and Reserve Division at the Agency for Natural Resources and Energy, METI, they met with Mr. Ken Watanabe, Manager, and received a brief overview of the oil refining industry in Japan and its oil stockpiling policy. At the Kiire Terminal of JX Nippon Oil & Energy Staging Terminal Corporation and Central Japan International Airport, they received a tour of the facilities. At Idemitsu Kosan, they gained an understanding of the company's overseas business expansion strategy, and at Cosmo Oil, they received a brief lecture on crude oil procurement. They also exchanged views on the training program that is being planned between these two companies and Tasweeq. Lastly, at Astomos Energy, they learned about the LPG situation in Japan and the company's LPG marketing activities in and outside of Japan.

In addition to the above-mentioned visits, JCCP arranged to have Mr. Al-Abdulmalek give a presentation on his last day in Japan, to give a corporate outline of Tasweeq, including an introduction of its in-house personnel development program, and provide a forum for exchange with JCCP member companies. The presentation was held at JCCP Headquarters, and was attended by a large number of guests that included members from the

Agency for Natural Resources and Energy and JCCP member companies, and JCCP staff members.

Mr. Al-Abdulmalek also took the occasion of his visit to Japan to meet with H.E. Mr. Yousef Mohamed Bilal, Ambassador of Qatar to Japan.

This VIP invitation program provided an ideal opportunity to deepen mutual understanding among relevant parties in Japan's energy sector, JCCP and Tasweeq.

<by Koichi Io, Operations Dept.>

VIP Invitation Program
H.E. Mr. Abbas Al-Naqi, Secretary General of OAPEC, Visits Japan

JCCP invited H.E. Mr. Abbas Al-Naqi, Secretary General, OAPEC, to Japan, from June 1 to 8, 2013 under the VIP Invitation Program.

During his stay in Japan, Mr. Al-Naqi actively visited and gave presentations at various oil-related institutions and companies in Japan, and also enjoyed the opportunity to exchange views with Mr. Ichiro Takahara, Director-General, Agency for Natural Resources and Energy, METI.

1. Background and Significance of the Visit

JCCP's relationship with OAPEC had its beginnings in May 2009, when the OAPEC Secretariat approached JCCP about a possible scheme of mutual cooperation. After a series of working-level discussions, Mr. Al-Naqi and Mr. Morihiro Yoshida, Managing Director of JCCP, in the presence of H.E. Mr. Akihiro Ohata, Minister of Economy, Trade and Industry, and H.E. Mr. Amr Mohammed Moussa, Secretary General, the League of Arab States, signed a Letter of Intent (LOI) on December 10, 2010 in Tunis, verifying their intent to establish a cooperative relationship between OAPEC and JCCP. Thereafter in March 2011, the two parties signed a Memorandum of Understanding (MOU) to formalize their agreement to enter into a cooperative relationship.

Based on the MOU, OAPEC and JCCP hosted a joint technical seminar in Cairo, Egypt in 2011 and 2012 as a forum for discussion among OAPEC member countries and Japanese experts, and also helped translate Japanese standards for oil refining and stockpiling into Arabic.

The OAPEC Secretariat has direct ties to the cabinet officials (oil ministers) of member countries. Thus, by establishing a close, cooperative relationship with the Secretariat, JCCP hopes to also build new connections with oil-related organizations in OAPEC member countries.

(From the left) Mr. Ichiro Takahara, Director-General, Agency for Natural Resources and Energy, METI; H.E. Mr. Abbas Al-Naqi, Secretary General, OAPEC; Mr. Masataka Sase, Executive Director of JCCP; Mr. Morihiro Yoshida, Managing Director of JCCP

From the above perspective, inviting the leader of the OAPEC, that is an international organization of oil-producing countries and providing deep knowledge of Japan and Japan's oil industry accords with JCCP's mission to strengthen friendly relationships with government institutions in oil-producing countries and contribute to securing stable oil supply to Japan. From the standpoint of OAPEC as well, deepening its relationship with a major oil consumer that can offer excellent oil downstream technologies can contribute to the technological advancement of its member countries.

2. Schedule

Mr. Al-Naqi arrived at JCCP on June 3, and met with Mr. Masataka Sase, Executive Director, and Mr. Morihiro

Yoshida, Managing Director, to exchange information on recent oil situations and the circumstances surrounding the oil industry. He then toured JCCP's training facilities after receiving a brief overview of JCCP's activities and training program.

On June 4, Mr. Al-Naqi visited JX Nippon Oil and Gas Exploration Corporation and JX Nippon Oil & Gas Exploration Technical Services Corporation, and deepened his understanding of the JX Group's crude oil development strategies in a meeting with board members from the head office.

On the same day, Mr. Al-Naqi gave a presentation at JCCP Headquarters on "The role of OAPEC member countries in the global oil and gas market and their relationship with Japan in the energy sector" to an audience of roughly 60 people from the Ministry of Economy, Trade and Industry, JCCP member companies, JETRO, Japan Petroleum Institute (JPI), and other relevant organizations. An active Q&A session followed the presentation, which helped to further deepen understanding and exchanges among the audience.

In his presentation, Mr. Al-Naqi stated that OAPEC's role is to promote cooperation among member countries, and particularly to promote efficient utilization of energy and joint ventures among the countries. At present, OAPEC has 10 active members. Together, they account for 30% of the world's crude oil production, 55% of its reserves, 16% of the world's production of natural gas, and 40% of global crude oil exports (all figures as of 2011). Meanwhile, Japan's dependency on oil for energy has dropped from 80% in the 1970s to 42%, and instead, its consumption of natural gas is increasing. Recognizing this trend, OAPEC wishes to continue its cooperative relationship with Japan and JCCP based on oil and natural gas. As large investments are needed to increase production capacity, there are strong hopes for Japan's cooperation.

On the last day of his visit, Mr. Al-Naqi visited the Agency for Natural Resources and Energy, METI and met with Mr. Ichiro Takahara, Director-General. As Mr. Al-Naqi previously held an important post in the Kuwaiti Ministry of Oil, Mr. Takahara thanked him for Kuwait's assistance (donation of crude oil) in the wake of the Great East Japan Earthquake. He also said Japan has increasing expectations of maintaining and strengthening ties with the OAPEC countries, as energy security is a priority issue to Japan. In response, Mr. Al-Naqi described OAPEC's friendly relationship with JCCP, and expressed his wish to also maintain and strengthen this relationship in the future.

On the same day, Mr. Al-Naqi paid a call on H.E. Mr. Abdul-Rahman Al-Otaibi, Ambassador of Kuwait to Japan, and debriefed the Ambassador about his visit to Japan and the discussions that took place at the various institutions and companies he visited.

3. Observations

Mr. Al-Naqi's visit to Japan and exchanges with various Japanese institutions and companies in the oil industry, including JCCP, provided a highly important step in deepening mutual understanding between OAPEC and Japan and building an even closer relationship based on cooperation. JCCP is pleased that he left Japan with a smile.

<by Hironao Naganuma, Technical Cooperation Dept.>

Mr. Al-Naqi giving a presentation

Mr. Al-Naqi (center)

FY2012 JCCP Program Seminar

The JCCP Program Seminar was held for the second time this year, over an eight-day period from February 27 to March 6. The seminar invites 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.

The seminar was held twice this fiscal year, in consideration of the fact that expectations and requests of JCCP differ among regions and countries. This time, the seminar was offered to the Middle East and GCC countries, while the previous seminar held last July was offered to other oil-producing countries.

1. Participants

A total of six participants from four Middle East/GCC oil-producing countries, namely Iraq, Oman, UAE and Saudi Arabia, attended the seminar.

2. Seminar Content

(1) Regular course experience

The seminar provided an opportunity for the participants to experience the main activities of a regular course (preliminary orientation session, opening ceremony, administrative guidance, lectures at JCCP, offsite training, exposure to Japanese culture and history, closing ceremony, etc.) and deepen their understanding of JCCP regular courses.

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

A lecture was given on Kaizen, TPM, small-group activities, and other such management practices to provide deeper understanding of these subjects and elicit training requests from the participants. Part of an actual program was also implemented for the experience.

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

Seminar participants and JCCP staff

(3) Presentations by the participants and hearing of requests

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

3. Summary

As mentioned above, this Program Seminar was held for JCCP counterparts from Middle East oil-producing countries, which together account for 90% of Japan's crude oil imports. As a result, it not only benefited the participants, but also shed light on issues common to countries in the region.

At Idemitsu Kosan's Tokuyama Refinery

JCCP hopes the participants will widely share their knowledge of JCCP upon returning to their countries and thereby contribute to increasing the number of participants to JCCP regular courses.

<by Koichi Io, Operations Dept.>

	Organization & Country	Name	Position
1	Iraq Ministry of Oil / Iraq	Mr. Jasim Mohammed Hameed	Expert, Manager of Technical Division, Deputy of D.G., Technical Division
2	Iraq Ministry of Oil / Iraq	Mr. Saad Ahmed Abdulkhaleq	Chief of Senior Physicist, Training & Human Resources Development Dept., Daura Refinery
3	Orpic / Oman	Mr. Ali Said Al Mahrouqi	Team Leader, Training Logistics Services, HR Services Div.
4	Orpic / Oman	Mr. Sultan Mohammed Sulaiman Al-Alawi	Sr. HR Performance & Development, HR Support-Performance & Development Dept.
5	ADNOC / UAE	Mr. Zayed Mohamed Taher Lahdan Al Shuaibi	Head, Reception & Travel Department, Public Relations-Human Resources
6	Saudi Aramco / Saudi Arabia	Mr. Abdullah A. Al-Mustaneer	Career Counselor, Career Planning & Consultation Division, Professional Development Department

Personnel Exchange

Regular Course on Future Advanced Technology for Petroleum Industry

1. Background and Aim

This course gives priority to the new technologies those should be applied to the oil industry in the future, and thus differs from other ordinary regular courses. According to this objective, its main themes were selected from among future energy technologies, such as biomass fuel technologies, photovoltaic generation, carbon dioxide capture and storage (CCS), underground methane production, fuel cell vehicles and hydrogen stations. The course was implemented over a period of 18 days, from April 8 to 25, 2013.

2. Course Content

2.1 Training at JCCP

(1) Future Strategies of Japanese Oil Companies

This lecture introduced the characteristics of Japan's oil industry and discussed the various problems facing Japan today and their impact on the industry. It focused particularly on the shrinking oil market, which is due to such factors as the declining birth rate, the increasing numbers of fuel-efficient cars, and the transition from oil-fired to LNG-fired power plants. It also introduced new business activities initiated by Japan's major oil companies based on information collected from each company's public website. Their challenges to develop new technology not only in their core business but also other business fields have produced various seeds of future business. Hopefully this session has provided a useful vision of reference to the participants.

(2) Simulation for Optimization of Refinery Unit Configurations Using a Virtual Refinery

In this lecture, a simulator practice demonstrated how profit could be changed by refinery configuration. The participants were asked to examine more profitable

operational methods on their own after completion of the planned simulation, and the top three participants with the highest scores were awarded. This simulation workshop was a new approach taken this fiscal year.

(3) Carbon Dioxide Capture and Storage (CCS) Technology
(Lecturer: Mr. Masaki Iijima, Mitsubishi Heavy Industries, Ltd.

The topic of this lecture was the development of improved amine solutions as a means for a more efficient removal of carbon dioxide, the main substance of global warming. It focused particularly on providing a good understanding of the characteristics of amine solutions, such as their corrosion resistance and low consumption of heat energy for regeneration. The carbon dioxide that is captured could also be used for enhanced oil recovery (EOR) in oil fields.

Mitsubishi Heavy Industries has conducted CCS demonstration tests in 10 locations to date, and has plans to begin a 500 t/day operation in Qatar in 2014.

(4) Development Status of Fuel Cell Vehicles and Hydrogen Infrastructure
(Lecturer: Mr. Kazuhiro Kikuchi, JPEC)

JPEC provided a lecture that widely covered the development trend of fuel cell vehicles, related technologies (pressure vessels, regulations), and the construction of hydrogen infrastructures.

The lecture also introduced Toyota Motors' plan to launch fuel cell vehicles in 2015 and a project that is being planned for the construction of infrastructure to connect the Kanto, Chukyo, Osaka and Kitakyushu areas.

(5) Photovoltaic Generation
(Lecturers: Mr. Masahiro Kakuwa, Showa Shell Sekiyu K.K.; Mr. Soichi Ogawa, Toa Oil Co., Ltd.)

A lecture was given on photovoltaic generation as an important fundamental technology to cope with global warming, centered on Solar Frontier's system, which boasts an outstanding track record in and outside of Japan. Showa Shell Sekiyu began R&D activities in this field from an early stage.

The lecture also introduced the installation of a photovoltaic generation system in a waste treatment facility (BeAAT) operated by TAKREER in UAE (including ceremony photos) and a 10MW project being implemented in Saudi Aramco.

(6) World's Energy Situation
(Lecturer: Mr. Mitsuyuki Maeda, Energy & Innovation Institute)

As a comprehensive wrap-up of the course, the last lecture at JCCP discussed the world's energy situation and trends in alternative energies. The lecture triggered many questions from the participants, stemming from their serious concern about the impacts of shale gas and shale oil, which are recently being produced in the United States and Canada, on crude oil producers.

2.2 Offsite Training

(1) Chugai Technos Corporation, Biofrontier Center

Chugai Technos' Biofrontier Center provided training in the following three areas.

1) Methane production in depleted oil fields
   An overview was given of the technology for producing methane by injecting carbon dioxide in depleted oil fields in the presence of hydrogen-producing bacteria and nutrient salts.
2) Carbon dioxide leakage monitoring at carbon dioxide capture and storage (CCS) sites
   CCS technology is believed to be able to capture and retain carbon dioxide deep beneath the ground for long periods of time, but changes in bedrock conditions could cause the carbon dioxide to leak out to the ground surface. Thus, a systematic technology is needed that would allow monitoring of a wide area at reasonable cost.
3) Treatment of oil-contaminated soil
   A technology for treating oil-contaminated soil using bacteria that live in the root of plants was introduced. The hands-on experience in the dyeing and microscopic observation of aerobic and anaerobic bacteria was highly evaluated by the participants.

(2) Cosmo Oil Co., Ltd., Research & Development Center

Cosmo Oil, the only oil company that was visited in this course, provided training in (1) bioethanol, (2) biomass to liquid (BTL), and (3) catalyst development (diesel fuel deep desulfurization, FCC) in relation to its research activities as an oil company.

Comments from the participants indicated a strong interest in bioethanol in Southeast Asia, but also gave the impression that fermentation of cassava as the primary raw material is the basic method of production. Second generation technologies using raw materials that do not

conflict with food have not attracted Southeast Asia's interest.

(3) Toyota Motors Corporation, Commemorative Museum of Industry and Technology & Toyota Hall

At Toyota Motors, where preparations to launch fuel cell vehicles in 2015 to the market are in full progress, the participants studied not only the latest technologies, but also the history of improvements that have been made in automotive exhaust gas cleanup and fuel efficiency improvement. Since the fact that Toyota began operations as a manufacturing company of textile machines is not well known abroad, the participants seemed surprised and impressed that the company diversified into a manufacturer of automobiles, which was a new business area at the time.

(4) Kansai Electric Power Co., Inc., Nanko Power Station

Kansai Electric's Nanko Power Station operates three 600MW LNG-fired thermal power plants (started in 1990). Here, the participants received an overview of the operations of a facility that was developed and tested jointly with Mitsubishi Heavy Industries, Ltd. for the removal of carbon dioxide from exhaust gas.

(5) Osaka Gas Co., Ltd., Energy Technology Center

Today, Osaka Gas uses LNG for city gas, although in the past town gas had been produced by coal gasification. The transition from coal gas to LNG took place between 1975 and 1990, and applied research for the effective utilization of by-product coal as carbon fiber began around 1980. This technology reduces nitrogen oxide by activating carbon fiber and creating a hydrophobic function on its surface. The removal of nitrogen oxide is energy-free, as it requires only a natural draft, and no motors are necessary. The Energy Technology Center was selected as a training site for new business models, as these technologies could also be applied to petroleum pitch.

(6) Kawasaki Heavy Industries, Ltd., Kobe Plant

The main theme of training at Kawasaki Heavy Industries was on combined power generation systems that use solar power, wind power and an electricity storage system using batteries, but the lecture also covered gas turbines, which have energy-efficient and energy-saving features, and high-efficiency power generation system, in addition to small hydroelectric

Launching ceremony at Kawasaki Heavy Industries

generation and the eco-town concept (power generation from urban waste).

Kawasaki Heavy Industries has adopted a vertical type of wind vane instead of the more commonly seen windmill type, and rated output (5kW) is achieved at wind speeds of 12m and more. The participants went up to the rooftop of the actual demonstration site to feel the strength of the wind (there was a northwest wind of 7m/s on this day), and gained straightforward knowledge of the difficulty of finding areas suitable for wind power generation close to consuming areas. To mitigate fluctuations in the output of electricity from photovoltaic and wind power generation, the demonstration site is also equipped with a 50kWh storage battery system called Gigacell.

The participants had the good fortune to visit the Kobe Plant on the day of a ship launching ceremony and share an inspiring event.

(7) Electric Power Development Co., Ltd. (J-POWER), Wakamatsu Research Center

At J-POWER's Wakamatsu Research Center, the participants received lectures on the EAGLE Project, which aims to separate carbon dioxide from the coal gasification process, as well as on the use of the biofuel technology to produce hydrocarbon that corresponds to

gas oil from algae, and on the company's 1MW mega-solar power plant (located in Hibikinada).

The lecture on biofuel production explained that the key to efficient biofuel production lies in reducing energy input as much as possible. Since light can penetrate up to depths of roughly 20cm, there is a limit to the depth (thickness) of the fermenter. Regarding photovoltaic generation, a demonstration showed how power generation falls sharply when the panels are covered by a cloud. In regard to the removal of carbon dioxide, the relevant facility was introduced as being able to test two methods: the chemical adsorption method and physical adsorption method.

(8) Kitakyushu Water Plaza

The desalination of seawater by reverse osmosis is a method that is widely used in the Middle East and elsewhere. Especially in the Middle East, however, seawater salinity is high, desalination treatment requires a large amount of power, and the highly saline seawater that is discharged ends up further increasing the seawater salinity. As a result, there is a real possibility that the sea will become salty like as the Dead Sea and will have adverse impacts on the eco-system and fishery industry in the future.

By mixing an equal amount of treated sewage water to raw water, the necessary power for reverse osmosis could be reduced (the reverse osmosis system can be operated at lower pressures), and an energy-saving operation can be realized. At the same time, wastewater salinity could also be reduced, so environmental conservation could be achieved.

(9) Kitakyushu Hydrogen Town

Fukuoka Prefecture believes hydrogen energy would be a core technology of a new industry in the future, and engages in demonstration testing of a hydrogen town in Yahatahigashi Ward in cooperation with the Research Association of Hydrogen Supply/Utilization Technology (HySUT). At the hydrogen town, the participants learned about hydrogen stations for fuel cell vehicles that utilize hydrogen generated as a by-product from steel plants, 1kW solid polymer fuel cells for detached houses, and the operational conditions of 100kW phosphate fuel cells for a museum, and took a demonstration ride to experience the practical utility of fuel cell vehicles. The smooth and powerful acceleration and quietness inside the car attracted all participants.

3. Summary

This course covered contents not conventionally covered by regular courses, such as photovoltaic generation, fuel cells and biofuels, and was widely appreciated by the participants.

<by Bunsuke Kariya, Training Dept.>

At a hydrogen station in Kitakyushu

CPJ Seminar on General Process Control for Uzbekistan

A Customized Program-Japan (CPJ) was implemented for the first time for a group of engineers from Uzbekistan. The seminar focused on providing general knowledge of process control, and was held over a period of 12 days, from March 4 to 15, 2013. Uzbekistan is blessed with mineral resources, including an abundant production of natural gas (14th largest producer in the world) and a significant amount of crude oil reserves. It also enjoys a friendly relationship with Japan. In July 2011, JCCP's Training Department visited Uzbekistan and provided a basic outline of JCCP activities. Owing to this approach, JCCP began to receive increasing numbers of regular course applications from Uzbekistan, in addition to requests for customized programs in Japan from Uzbekneftegaz, and thus came to implement this CPJ seminar.

Participants and JCCP staff

1. Overview

The seminar was designed to provide overall knowledge of process control in Japanese oil companies, and to strengthen the cooperative relationship between Uzbekneftegaz and JCCP. It also aimed to foster mutual understanding between engineers from Uzbekistan and those in Japan's oil industry by providing a forum for international exchange.

The participants were a group of 12 engineers with an average age of 35, from Uzbekneftegaz and its six affiliates (including the Bukhara, Fergana and Jarkurgan Refineries).

The course content centered on process control technologies, but it also widely covered the latest topics in DCS (distributed control system), modernization of systems, information systems and field instrumentation devices, with hands-on training in part. At the request of Uzbekneftegaz, all lectures and explanations were given in Russian, with Japanese-Russian translation.

2. Course Content

Intended for process control engineers, the course introduced Japan's advanced technologies in a wide range of fields, from their basics to practical application. It also covered process control technologies in refineries, broadly ranging from field instrumentation devices to control systems and higher information systems.

The program at JCCP Headquarters included not only lectures, but also demonstrations and practical training in process responses and control (tuning, etc.) using CAI and simulators. Hands-on training was also included in some of the programs at offsite training destinations. Offsite training placed weight on providing knowledge of quality control and other technologies related to manufacturing processes in Japan.

(1) Offsite Training (3 companies, 4 locations)

Offsite training was provided at two instrumentation and control instrument manufacturers and a refinery.

Hands-on training in the overhaul of flow instruments

Hands-on training in DCS

Process control demonstration using a simulator

Training at the manufacturing plants drew questions from the participants not only about instrumentation and control instruments, but also about diverse subjects, such as quality control, Kaizen activities, safety activities, environmental issues, and personnel systems. Similarly at the refinery visited, questions pertaining to production management, environmental issues, and refinery-related issues in general prompted active discussions.

- Oval Corporation, Yokahama Office (March 6)
  Lectures on flow instruments in general; tour of the manufacturing site for calibrators; practical training in the overhaul of flow instruments
- Idemitsu Kosan Co., Ltd., Tokuyama Refinery (March 8)
  Lectures on refinery computer systems, real-time operation management systems and advanced control systems; lecture on application software in actual operation in an instrument room
- Yokogawa Electric Corporation, Mitaka Head Office and Komine Factory (March 11 & 12)
  Lectures on process control in general, from field instrumentation devices to DCS (distributed control system) and SIS (safety instrumented system); practical training of a control system in a demonstration room; lecture on analysis instruments; hands-on training at the production site of analyzers

At the plant of an instrumentation device manufacturer

(2) Training at JCCP (3 external lecturers, 1 JCCP lecturer)

At JCCP Headquarters, training covered a wide range of subjects, and included a demonstration of the basics of process control, a lecture on the modernization of instrumentation systems, a lecture on information and control systems in refineries, and a lecture and practical training on an operational assistance system. The participants displayed strong interest in safety instrumentation and wireless instrumentation, asked questions about the introduction framework and advantages of other systems as well, and made for an interactive training, just like at the offsite training destinations.

- External lecturer: Mr. Hisashi Murata (Toyo Engineering Corporation)
  Lecture on the modernization of instrumentation in reference to field buses, wireless instrumentation and safety instrumentation
- CAI room at JCCP
  Lecture on the basics of process control, namely process responses and controller PID tuning
- CAI room/No. 5 Simulator
  External lecturers: Mr. Taisuke Ishida & Ms. Junko Makise (Yokogawa Electric Corporation)
  Practical training in the construction of an operational assistance system through a demonstration and

Practical training on process control at a refinery

Process control demonstration using computers

hands-on training using a PC and simulator

- External lecturer: Mr. Hiroshi Osaka (Osaka Systems Planning, Inc.)
  General lecture on information and control systems used in refineries

3. Observations

There were initial concerns about whether the course could achieve its intended outcome, for several reasons: there were only three months from its planning to implementation, all explanations had to go through a translator, and not all participants were instrumentation/control specialists. However, judging by the participants' evaluation and impressions, it seems the intended objective of providing a general understanding of process control was practically achieved. This was made possible by the participants' sense of responsibility that stemmed from their conscious awareness of being representatives of their countries or companies, and by the outstanding qualities and determination of each individual. Their excellent teamwork and sincere attitude to receiving training were also evident in the way the leader of the group smoothly called everyone together after completion of the closing ceremony and gathered reports from everyone.

Based on the experience of this CPJ seminar, JCCP hopes to implement other training programs in the future in consultation with Uzbekneftegaz and strengthen ties between Uzbekistan and Japan.

<by Shigeru Matsui, Training Dept.>

CPO Seminar on Environment-friendly Activities for UAE

A Customized Program-Overseas (CPO) seminar on Environment-friendly Activities was implemented for TAKREER, over a period of three days, from February 12 to 14, 2013 at the Sofitel Hotel in Abu Dhabi.

1. Overview

In Abu Dhabi, where environmental consideration and responses constitute an important policy, a CPO seminar aimed at the development of new environment-friendly projects was implemented at the request of TAKREER. In addition to employees from TAKREER, personnel from other companies affiliated with the ADNOC Group attended the seminar. They took part in an exercise in drafting a new environmental project for each of the ADNOC Group companies, and gained useful knowledge for promoting environmental initiatives under their respective leadership. Lectures covered a broad range of topics, with the cooperation and participation of lecturers from Japanese companies engaging in business in the Middle East, as well as from UAE University and Abu Dhabi University. The seminar was featured in TAKREER's in-house journal, and was a successful event that shed light on JCCP training activities in UAE.

2. Background

The CPO came to be implemented in response to a request from TAKREER's personnel department for a seminar on the environment. Based on the company's annual training program, it requested the seminar to focus on environment-friendly activities. Upon confirming specific needs of the Environment Department at TAKREER, JCCP thus designed a program that would prepare participants for the development of new projects. The seminar also included an introduction of JCCP technical cooperation projects, an overview of environmental technologies and projects of Japanese companies, and R&D activities at UAE University. Furthermore, with additional support offered by the recently established Abu Dhabi University, the seminar was able to acquire the cooperation of the university's professors as lecturers and thereby offer a content-rich program.

Lecturers from Abu Dhabi University

Some of the participants and lecturers

Group discussion on the development of environment projects

Workshop on the development of new environment projects

3. Seminar Content

To respond to the expectations of diverse participants with different backgrounds and business duties, the focus of the seminar was placed on hands-on training in formulating a new, environment-friendly project, as a program that would respond to a wide range of needs.

Before participants with various backgrounds could each engage in hands-on training in the development of a new project, however, lectures needed to cover a wide range of technologies and commercial aspects as a prerequisite. Furthermore, case studies for project development needed to be prepared, and facilitation capacities were required to oversee everyone's projects concurrently. For these reasons, the seminar was implemented with the cooperation of experts in diverse fields, including oil companies, engineering companies, manufacturers and the academic world.

(1) Session 1: Corporate Environmental Activities

<Day 1 morning>

A lecture was first given by Mr. Kubota on a comprehensive history of environmental countermeasures in Japan, ranging from pollution control measures to the latest clean energy technologies, to explain the historical background to current countermeasures being implemented in Japan. Mr. Iwamatsu from Idemitsu Kosan Co., Ltd. then introduced examples of voluntary and advanced environment-friendly activities of Japanese oil companies. Following Mr. Iwamatsu, Arii introduced case examples of wastewater treatment and waste countermeasures in Japan and global warming countermeasures for a low-carbon society, from the standpoints of private business and government cooperation. Public-private cooperation was discussed by combining the perspectives of environmental economics and business, as waste and global warming countermeasures require cooperation between the government and business world, as well as cooperation among industries. Mr. Yamazaki from Kawasaki Heavy Industries, Ltd. then lectured on the latest energy conservation technologies and introduced his company's environmental initiatives. The participants engaged in active Q&A in this session, and learned about the need to take a broad viewpoint in regard to corporate environmental activities.

(2) Session 2: Latest Environmental (Water, Air) Technologies *<Day 1 afternoon>*

At the request of TAKREER, four professors from Abu Dhabi University undertook part of the lectures in this session.

Prof. Abdel Mohsen Onsy Mohamed and Prof. Fares Howari lectured on Abu Dhabi University's education and research activities. They both expressed their wish to actively cooperate with JCCP's training program, and agreed to promote information exchanges hereafter.

Dr. Naser Tibi introduced an air-quality monitoring project being implemented with the Abu Dhabi Ministry of Environment and Water, and Dr. Alena Bartonova introduced the latest environmental monitoring technologies and case examples of advanced air-quality measures in Northern Europe. Such examples of government cooperation in each country supplemented the lectures given by Japanese lecturers and enriched the content of the session.

(3) Session 3: New Environmental Initiatives

<Day 2 morning>

Dr. Muftah El-Naas, a professor at UAE University

Presentation on a new project

in charge of JCCP technical cooperation projects, introduced wastewater treatment technologies and an actual JCCP project being implemented in UAE, and generated awareness of JCCP technical cooperation projects to the large audience from the ADNOC Group. Additionally, Mr. Ozaki from JGC Corporation lectured on advanced technologies related to air quality with a focus on combustion technology, and Mr. Yamazaki on the progress of flue-gas desulfurization technologies. Furthermore, Mr. Bassam Osman from Hitachi Plant Technologies, Ltd. gave a lecture on the latest wastewater treatment technologies, and Mr. Iwamatsu introduced VOC technologies. As these technologies are already being promoted in the Middle East market by Japanese companies, the lectures benefited the participants in acquiring the latest technical trends.

(4) Session 4: Practice in the Development of a Long-term Environment Project Plan

<Day 2 afternoon>

This session provided training in the development of an environment project plan from a long-term perspective.

Firstly, Mr. Osma from Hitachi Plant Technologies, Ltd. discussed case studies of wastewater treatment, water recycling and solar power projects in UAE with a focus on the process of project development.

Then, each participant drafted a new environment project that they expect would be needed in UAE from the long-term perspective, and presented their plan upon holding a group discussion. Various themes were examined from the standpoint of developing a project plan, including countermeasures for flare gas, waste and wastewater, and carbon management. The lecturers also participated in the training as facilitators and provided guidance to each group on the process of project development. On the whole, the session was well received by the participants, as it allowed them to examine and prepare to develop projects that ADNOC and TAKREER would likely need to implement in the future.

(5) Session 5: Practice in the Development of a Short-term Environment Project Plan

<Day 3 morning>

This session provided training in the development of a practical project plan that could be implemented within a few years.

Mr. Ozaki introduced examples of projects that have utilized combustion equipment and heat exchangers, and discussed case studies. Particular emphasis was placed on maintaining a short-term, practical perspective, so that the participants could take prompt action after training. Group discussions yielded emergent and active insights, as the participants included members not only from TAKREER, but from other ADNOC Group companies as well. The presentations by the participants were also pragmatic and convincing, as they were based on the participants' conscious daily awareness of their respective issues, and proved to be highly meaningful.

4. Features of the Seminar

The seminar was a new attempt in terms of the following points.

(1) Shift of focus from knowledge to capacity-building

The seminar not only included lectures on the latest environmental technologies, but also allotted ample time for hands-on practice in building capacities for new project development and emphasized the importance of capacity-building. Furthermore, as the lectures focused on the process of formulating environment projects, the seminar as a whole was highly rated by the participants as giving them an opportunity to link their respective issues to the development of a new project.

(2) Expansion of the scope of participants

The participants were a group of approximately 20 members from a variety of fields, who have strong interest in the environment. They mainly represented TAKREER, but also represented other ADNOC Group companies in roughly equal numbers, since the theme of the seminar had general relevance to all companies.

By expanding the scope of participants, JCCP was able to effectively promote greater awareness of its activities among the ADNOC Group companies. An article about the seminar in TAKREER's in-house journal also contributed to increasing recognition of JCCP training activities in TAKREER.

(3) Cooperation by the Technical Cooperation Department

A UAE University professor introduced the technical cooperation project on wastewater that is being implementing at TAKREER with the cooperation of JCCP's Technical Cooperation Department, and contributed to widely promoting awareness of JCCP technical cooperation projects among participants from the ADNOC Group of companies.

(4) Training cooperation with universities in UAE

The seminar was fortunate to receive cooperation from UAE University and Abu Dhabi University. Professors from the universities undertook some of the lectures in the seminar for the participants from ADNOC, and contributed to enriching the content of the seminar. JCCP hopes to exchange information on the possibility of cooperation with universities in UAE in future training programs as well.

(5) Cooperation with local Japanese companies

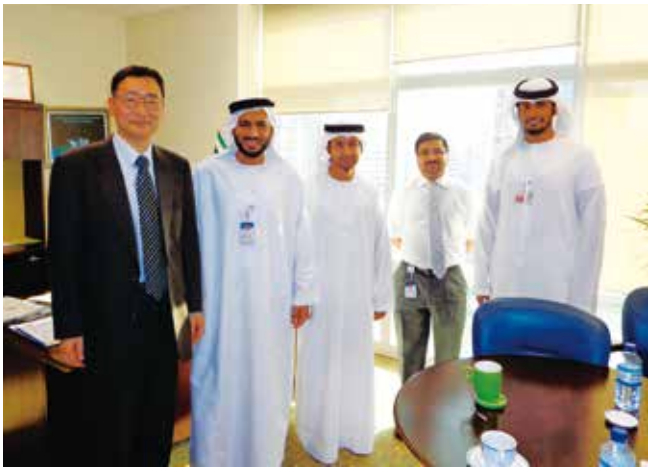
Owing to the cooperation of Kawasaki Heavy Industries, Hitachi Plant Technologies, and other Japanese companies engaging in business in the Middle East, the seminar included lectures by resident members of Japanese companies. As market experts, they based their lectures on the latest market technologies and fully satisfied the needs of the participants.

5. Consultation with ADNOC

In a consultation with ADNOC's Environment Subcommittee regarding training activities, the ADNOC side expressed its wish to strengthen cooperation with JCCP, and made the following requests for cooperation.

(1) Given the success of the energy efficiency seminar held in Abu Dhabi last year, the ADNOC side requests JCCP's cooperation again this year in the seminar that is being planned by the ADNOC Group. The "effective utilization of water" is being considered as a possible seminar theme.

(2) For the first time, two members from the ADNOC Environment Subcommittee participated in a regular course on development of a new energy efficiency project" held in Japan. As the two members had high praise for the course, the Environment Subcommittee, which is composed of ADNOC executives, decided it would like to select and send members from the ADNOC Group to participate in JCCP regular courses (environmental management and energy management) in the future on a continuous basis.



Meeting with members of the ADNOC Environment Subcommittee

The above-mentioned seminar to which JCCP cooperation was requested by ADNOC was scheduled for June 2013 under the theme of effective utilization of water resources. As the HSE Department that is mainly in charge of environmental and safety issues at ADNOC is a directly managed organization under ADNOC, JCCP hopes to continue deepening its cooperative relationship with the department.

JCCP also renewed its commitment to accurately assess needs in relevant departments in oil-producing countries, and to offer customized programs that fully satisfy those needs.

<by Tetsuo Arii, Training Dept.>

CPO Seminar on Practical TPM Activities for Field Operators Held at Saudi Aramco

Seminar participants and lecturers

A Customized Program-Overseas (CPO) on TPM activities for visualization of field operations was held at Saudi Aramco, intended for machine operators and maintenance staff. It took place at the Yanbu Refinery's Training Center and at the site of a diesel fuel hydrodesulfurization unit in Process Area 3, over a period of 5 days, from March 2 to 6, 2013.

1. Objective and Background

Saudi Aramco and JCCP have implemented a series of joint seminars on TPM activities since fiscal 2008. Held at the Ras Tanura Refinery, Riyadh Refinery, Yanbu NGL, Jeddah Refinery, and Southern Area Oil Operations (Abqaiq), these seminars comprised classroom lectures only, and fell short of providing deep understanding of TPM activities, which are mainly field-oriented. Given this situation, the recent seminar on TPM activities for visualization of field operations was designed to mainly provide practical hands-on training to field managers, and was held on the refinery floor, at the strong request of Yanbu Refinery, which is currently considering the introduction of TPM activities.

The seminar program gave due consideration to the sustainability of TPM activities, as requested by Mr. Basim A. Zarie, Superintendent, Planning & Training Division. It also aimed to encourage voluntary activities by field operators and maintenance staff who undertake operations and maintenance activities in the refinery.

2. Seminar Content

Lectures were given in the mornings on the first two days, and hands-on field training was provided in the afternoons to facilitate understanding of issues presented in the lectures.

Mr. Basim A. Zarie, Superintendent, Planning & Training Division, giving an opening speech

Lecturers included Fumihiro Tone from JCCP and three members from Idemitsu Kosan Co., Ltd.: Messrs. Yoshisumi Tamao, Masanori Wada, and Masaaki Desaki.

The group of participants consisted of a total of 22 elite members selected from Saudi Aramco's various refineries and departments. From the Yanbu Refinery, they included one engineer and three technicians from the maintenance department and 11 operators from the operations department. They also included one supervisor and one operator from the Ras Tanura Refinery, one maintenance planning officer from the Riyadh Refinery, one supervisor from Juaymah NGL, one maintenance engineer from Yanbu NGL, and two instructors from the Yanbu Training Center.

On the first day, the seminar began with an opening speech by Mr. Osama A. Hassan, Supervisor, Planning & Accountability, followed by a detailed explanation of the significance and objectives of the seminar by Mr. Zarie. Mr. Zarie attended a regular course on maintenance in fiscal 2008, and is also well-versed in Japanese-style management practices, so his support for the implementation of this seminar was deeply appreciated.

Mr. Tone defined and provided an overall description of TPM in his lecture entitled "Overview of TPM and maintenance management and safety management based on TPM activities in the refinery." In reference to a case example of a serious accident that occurred in an oil complex in Japan, he explained that TPM activities came to be introduced as a means for improving maintenance management following the accident. He also explained that the success and failure of TPM activities are predicated on the awareness of the leader, and emphasized the importance of management practices in oil-related companies in Japan and the role of the manager in boosting motivation in the workplace. Tone then introduced representative small-group activities that form the core of TPM activities, including the tool-box meeting (TBM), hazard prediction activity, learning from near-misses, and the 5S policy, explaining that this policy is particularly important to achieving visualization.

In the afternoon, the participants engaged in Workshop Part 1 on extracting and examining problems in visualization in an actual workplace. Divided into two groups for pumps and compressors, they assessed the present state of defects and grime and searched for problems using a checklist.

On the second day, Messrs. Tamao, Wada and Desaki from Idemitsu Kosan introduced case examples of TPM activities implemented in Idemitsu's refineries. Mr. Tamao first gave a general outline of TPM activities, frameworks, and key points for establishing TPM activities in the refinery. Mr. Desaki then conducted an exercise in identifying defects using photos of pumps riddled with defects, to make the point that the spirit of initial cleanup—"cleanup equals inspection"—is the first step in voluntary maintenance activities, which form

Extracting problems

Mr. Masanori Wada giving a lecture

Initial cleanup

Hands-on training in visualization

an important pillar of TPM activities. Lastly, Mr. Wada showed a video of serious accidents that have occurred at Idemitsu Kosan in the past, to provide an understanding of the importance of visualization, and Mr. Tamao explained the effects of visualization in an easy-to-understand manner through photos of workplaces before and after the implementation of visualization activities.

In the afternoon, the participants engaged in Workshop Part 2 on extracting and examining problems in visualization in an actual workplace, and took to the task of identifying areas for cleanup from among the problems and concerns they had extracted on the previous day. For the compressor, they limited the range of their task, as it was too large to complete within the time available.

On the third day, the problems that were extracted were classified into those related to maintenance and those related to visualization, and after narrowing them down to 10 or so visualization problems due to limited time, the participants discussed their levels of priority, cleanup method, overall plan, and members to be in charge of each task. In temperatures reaching to 35°C, they applied themselves to the cleanup with vigor, actively cleaning oil stains with a solvent and eliminating dust with an air blower or water hose. Some areas were ready for painting by the same afternoon.

On the fourth day, Mr. Desaki first explained about the necessary tools for achieving visualization of gauges and how to use them, and had the participants engage in hands-on practice in cleaning the gauges.

Before

After

The participants then moved to the site of their workshop for post-cleaning verification, and performed additional cleaning and painting of needed areas. Certain considerations were given so that paint colors and remedies to some of the equipment defects conformed to Saudi Aramco's regulations. Among the problems extracted were malfunctions of the vibration indicator and pressure gauge in regard to the compressors, and malfunctions of the pressure gauge in regard to pumps, but because these problems require the judgment and instruction of a supervisor from a dedicated department and also require time to address, they were decided to be left until they could be addressed in future activities. Lastly, visualization measures were applied to selected equipment, to visualize the proper range of gauges and motor rotation direction, for example. After completion of training in the workplace, both groups looked back on their tasks and summarized matters that came to their attention during the activity and future action plans.

On the fifth and last day of the seminar, the participants compiled presentation materials in preparation for giving a report on the results of their activities to the refinery management. They formed the structure of their presentation in consultation with each other, and made the necessary corrections to the materials by having a speaker rehearse the presentation. Such team efforts could also be said to be a meaningful result of this seminar.

The closing ceremony was held with the attendance of Mr. Mustafa M. Almahdi, Yanbu Refinery Manager, Mr. Zarie, and Mr. Mohammed S. Aidarous, Supervisor, Training Unit. Mr. Almahdi said the seminar presented knowledge and skills that would prove highly useful in upgrading refinery maintenance, and should be put to full use hereafter. He also articulated his plan to request JCCP's cooperation in implementing similar seminars in the future. Tone expressed his appreciation to the Saudi Aramco management on behalf of JCCP, and brought the seminar to a close after presenting the participants with a completion certificate.

3. Observations

Last year (FY2011), a seminar on workplace visualization activities was held for supervisors and post-supervisors, with the main aim of developing leaders of visualization activities.

This year, the seminar was held for operators and maintenance staff. Because they normally work under instructions from their supervisors, there was a slight concern about whether they would be comfortable with taking voluntary action. The concern, however, was dispelled once the seminar began. The participants seemed to enjoy and gain a sense of satisfaction in engaging in practical, hands-on training in an actual workplace as in the previous seminar, indicating that such training would also be effective if incorporated in other seminars in the future. In particular, the participants seemed well aware of the objective of cultivating the "my machine," "my plant" ownership mindset that is a keyword in TPM activities, and thus seemed to take the hands-on training with a sense of purpose. Field activities are necessary for achieving specific results such as changes in awareness and improving equipment reliability, and the establishment of systems and schemes that managers can initiate are particularly important.

The Yanbu Refinery is presently composed of three areas, two of which have been used for onsite training in this seminar. The participants applied themselves to two days of initial cleanup activities, and achieved the intended results of visualization. At the end of the seminar following their presentations, most of the participants declared their intention to apply the practice to their respective workplaces, and raised expectations for future achievement of visualization.

In a meeting held after the seminar, the Training Unit sought the continued implementation of the seminar next year. Thus the content, period of implementation, and other particulars of the seminar will be discussed in detail hereafter, with a view to offering an even more practical seminar that includes onsite training and that could be attended by all members concerned, from manager-level employees to field operators and maintenance staff.

<by Fumihiro Tone, Training Dept.>

Human Resource Management

(TR-4-13: May 7 – May 24, 2013)

Mr. Abdulrehman A. Al-Sebaie (Superintendent, Riyadh Refinery Operation, Saudi Aramco)

I am honored and pleased to contribute a message to *JCCP NEWS* on behalf of 17 members from 13 great nations.

During the opening ceremony when I introduced myself, I mentioned that 18 Japanese members from Japan Steel Works, Ltd. (JSW) conducted inspection and maintenance work on hydrocracker unit reactors at Riyadh Refinery over a period of 20 days. All refinery employees were amazed at the quality and excellent execution of the critical job. Personally, I was eager to know the secret to their outstanding work, so I invited them to my house for dinner. However, wanting to know even more, I decided to attend this HR course.

Now, after attending this course, I can confidently say that I know the secret. It is because Japanese-style management differs from that of other nations. It is based on team and group contribution, rather than on individuals. I felt this from all companies we visited, which included JX Nippon, Uyeno Kosan, Idemitsu Kosan, Cosmo Oil and Shirashima National Stockpiling Base. We acquired many examples of HR programs at these companies, but here I shall cite the example at Idemitsu Kosan.

Idemitsu Kosan was founded by Sazo Idemitsu more than 100 years ago. It grew from a small store to a large corporation that now has 8,700 employees, 32 domestic offices, 34 overseas offices, and 4.5 trillion yen in sales. The most important factor of this success lies in the founder himself. He firmly stood by the concept of "respect for human beings," based on the following principles:

- Human beings are the main actors in economy and society, not materials and money.
- Discipline and education are important to make employees worthy of respect from society.
- Human power is gained through total cooperation.
- Do not be slave to money.

Did he mention anything about profit? Absolutely not. That is the secret. Idemitsu's management style completely differed from that in Western society, which tends to focus mainly on achieving profit.

To maximize the benefit of the course, the weekends were spent on gaining exposure to Japanese culture. We had the opportunity to visit many historic places, such as Hiroshima and a number of shrines and castles, and to have a taste of various Japanese delicacies.

On behalf of the course participants, I would like to thank JCCP management for its outstanding organization of the course, from the first minutes of arriving at Narita Airport to the end of the course. We especially appreciated the orientation on how to use the public transportation system, which allowed us to visit many places of interest independently, and are grateful for the JCCP members' detailed response to each and every one of our questions.

I can confidently say that the course objective was met 100%, and assure you that we will take all that we learned back to our countries.

It is rare to have a course that is both practically meaningful and enjoyable, but it was achieved in this course by the outstanding efforts of our three lecturers, Mr. Shoji, Mr. Okuyama and Mr. Jimbo. They spent day and night developing the course program, and dedicated their full attention to our group over the entire duration of the course. They accompanied us throughout the course, but worked so seamlessly as a team that we completely gave ourselves over to enjoying the program without a clue as to who was in charge of what. This, precisely, was a real demonstration of Japanese HR management. Can you imagine managing a group of 20 individuals travelling a total distance of around 2,500 kilometers by foot, bus, taxi, train, boat and airplane, and checking in and checking out of 10 hotels, all smoothly and in an enjoyable atmosphere? I must say they were amazing.

Thank you, Arigato Gozaimas.

With 18 Japanese members of JSW and my family at my house in Saudi Arabia

JCCP Regular Courses Completed

TR-20-12 Quality Management of Refinery Products
February 5 – February 22, 2013 **Lecturer: Minoru Horike**

Content: Quality Management; Quality Control in Japan; Environmental Strategy of Japanese Oil Companies; QC in the Refinery; ISO-9000; Clean Fuel in Japan; Product Planning by LP Model

Site visits: DKK TOA Corporation; Shimadzu Corporation; Idemitsu Kosan Co., Ltd. (Tokuyama Refinery); JX Nippon Oil & Energy Corporation (Negishi Refinery); Yokogawa Electric Corporation; Tanaka Scientific Limited

Countries: Indonesia, Iraq, Kuwait, Libya, Myanmar, Sudan, UAE, Uzbekistan, Vietnam, Yemen

<10 countries / 15 participants>

TR-21-12 Advanced Process Control on DCS
February 5 – February 22, 2013 **Lecturer: Teruhiko Sasaki**

Content: Basic process control theories with practice using computer simulator and miniature-plant with applied to DCS;
Practice of advanced process control theories and operation support system using DCS;
Application for shutdown sequence system on DCS and practice of safety instrument system;
Latest DCS related technologies and APC system

Site visits: Yokogawa Electric Corporation (Mitaka Headquarters);
JX Nippon Oil & Energy Corporation (Marifu Refinery);
Seibu Oil Co., Ltd. (Yamaguchi Refinery)

Countries: Indonesia, Iraq, Kazakhstan, Kuwait, Libya, Myanmar, Nigeria, Pakistan, Saudi Arabia, Sudan, Thailand, UAE, Uzbekistan, Vietnam, Yemen

<15 countries / 16 participants>

TR-22-12 Human Resource Development
February 12 – March 1, 2013 **Lecturer: Eiji Okuyama**

Content: Petroleum Industry in Japan;
Japanese-style Human Resource Management & Development;
HRM & TPM at Refinery;
Small Group Activity at Refinery;
HRD of Engineering Company;
Training Program Development;
HRD of Oil Company;
Rational Thought & Team Consensus Building

Site visits: Idemitsu Kosan Co., Ltd. (Tokuyama Refinery);
Cosmo Oil Co., Ltd. (Sakai Refinery);
JGC Corporation (Yokohama World Operation Center); Meisei University (Hino Campus);
JX Nippon Oil & Energy Corporation (Head Office)

Countries: Indonesia, Kazakhstan, Kuwait, Libya, Malaysia, Myanmar, Pakistan, Papua New Guinea, Saudi Arabia, Thailand, Timor-Leste, UAE, Uzbekistan, Yemen, Vietnam

<15 countries / 17 participants>

TR-1-13 Petroleum Marketing
April 8 – April 25, 2013 **Lecturer: Masayuki Jimbo**

Content: Petroleum Industry in Japan; Refinery Shipping System of the Petroleum Products;
On-site Observation of the Facilities;
Endless Price War in Retail Market;
Oil Flow to Mass Consumers;
Latest Service Station Facilities;
Integrated Refueling System;
Facilities and Safety Refueling Operation;
Distribution of Petroleum Products;
Facilities and Safety Measures;
New Automobile Fuel;
Business Expansion to Non-Oil Field;
Management by Rational Thinking Process;
Workshop"Advanced Negotiation";
Workshop" Financial Accounting";
Workshop "Procurement"; Workshop" Oil Derivatives"

<14 countries / 20 participants>

Site visits: JX Nippon Oil & Energy Corporation (Mizushima Refinery);
Fujitani Inc. (depot, service stations); San-ai Oil Co., Ltd. (Haneda Airport Branch);
Tatsuno Corporation (Yokohama Plant);
JX Nippon Oil & Energy Corporation (Head Office)

Countries: Bahrain, Cambodia, Ecuador, Indonesia, Iraq, Libya, Myanmar, Nigeria, Thailand, Timor-Leste, UAE, Uzbekistan, Vietnam, Yemen

TR-2-13 Future Advanced Technology for Petroleum Industry
April 8 – April 25, 2013 **Lecturer: Bunsuke Kariya**

Content: New Business Strategy of Japanese Oil Industry;
Underground Microbial Carbon Recycling;
Workshop for the Refinery Equipment Optimization Using Virtual Refinery;
Research Activities at Cosmo Oil;
Carbon Capture and Storage;
Hydrogen Infrastructure; Solar Power Generation;
Role of Car Manufacturer in Environmental Protection;
Carbon Capture Technology in Power Company;
Utilization of Heavy Fraction as Activated Carbon;
Combined Renewable Energy System;
Biofuel Production & Mega Solar;
Energy Saving Type Sea Water Desalination;
Hydrogen Filling Station & Fuel Cell Vehicle;
World Energy Situation

<11 countries / 14 participants>

Site visits: Chugai Technos Corporation; Cosmo Oil Co., Ltd. (Central Research Laboratory);
Toyota Motor Corporation; Kansai Electric Power Co., Inc.; Osaka Gas Co., Ltd.;
Kawasaki Heavy Industries, Ltd.; Electric Power Development Company;
Kitakyushu Water Plaza; Kitakyushu Hydrogen Town

Countries: Bahrain, Ecuador, Indonesia, Iraq, Kuwait, Libya, Nigeria, Qatar, Thailand, Uzbekistan, Vietnam

TR-3-13 DCS Fundamentals and Applications
April 8 – April 25, 2013 **Lecturer: Kazuhiro Suzuki**

Content: Petroleum Industry in Japan;
Outline of Distributed Control System (DCS);
Latest DCS; Process Control Theory;
Hands-on Training of Process Control;
Engineering Practice on DCS;
Advanced Process Control; Process Optimization;
Fieldbus Engineering;
Modernization of Instrumentation

Site visits: Azbil Corporation (Shonan Factory);
Emerson Japan, Ltd. (Mizushima Solutions Center);
Idemitsu Kosan Co., Ltd. (Tokuyama Refinery);
Yokogawa Electric Corporation (Mitaka Headquarters)

<10 countries / 15 participants>

Countries: Indonesia, Iraq, Kuwait, Libya, Malaysia, Nigeria, Qatar, Uzbekistan, Vietnam, Yemen

TR-4-13 Human Resource Management
May 7 – May 24, 2013 **Lecturer: Taro Shoji**

Content: Petroleum Industry in Japan; Japanese-style Human Resource Management & Development;
HRM of Oil Company; HRM & TPM at Refinery;
Small Group Activity at Refinery;
HRM of Transportation Company;
Energy Security by Japanese National Oil Stockpiling Base; Rational Thought & Team Consensus Building

Site visits: JX Nippon Oil & Energy Corporation (Negishi Refinery); Idemitsu Kosan Co., Ltd. (Aichi Refinery);
Cosmo Oil Co., Ltd. (Sakai Refinery);
JOGMEC (Shirashima Oil Stockpiling Base); Shin Shin Toitsu Aikido Kai (Headquarters)

<13 countries / 17 participants>

Countries: Indonesia, Iraq, Malaysia, Myanmar, Pakistan,
Papua New Guinea, Qatar, Saudi Arabia, Thailand, Timor-Leste, UAE, Uzbekistan, Vietnam

TR-5-13 Upgrading Processes of Heavy Oil
May 7 – May 24, 2013 **Lecturer: Takaaki Yuasa**

Content: Outline of Upgrading of Heavy Oil;
Hydrotreating and Hydrocracking Catalyst;
Thermal Cracking Process; IGCC Technology and Selection of Heavy Oil Upgrading Process;
FCC & Resid-FCC Process Technology;
Hydrotreating and Hydrodesulfurization Process Technology; FCC Catalyst Reaction Theory;
Thermal Cracking (Delayed Coker, Flexi Coker) Unit and FCC Unit; Operation and Troubleshooting and Decreasing Effect in Heavy Oil Production;
Developed HDS & FCC Catalyst and its Theory;
Process and Characteristics of RFCC and VRHDS Unit; Evaluation Technology and its Results for HDS Catalyst & FCC Catalyst;
Process Simulator Practice of FCC Startup;
Linear Programming and Production Planning for Refinery

<10 countries / 15 participants>

Site visits: JGC Catalysts & Chemicals Ltd. (Kitakyushu Operation Center);
JX Nippon Oil & Energy Corporation (Marifu Refinery);
Idemitsu Kosan Co. Ltd. (Aichi Refinery); Toa Oil Co. Ltd. (Keihin Refinery)

Countries: Indonesia, Iraq, Kuwait, Myanmar, Qatar, Sudan, Thailand, Timor-Leste, Uzbekistan, Vietnam

TR-6-13 Petroleum Distribution
May 28 – June 14, 2013 **Lecturer: Kazuo Kojima**

Content: Petroleum Industry in Japan; Management by Rational Thinking Process; Jet Fuel Facilities & Refueling to Airplane at Airport; Petrol Dispensing Pump Manufacturing; Transportation of Oil Products; Shipping System & Maintenance at Refinery; Production & Maintenance of Pipelines; Stockpiling, Loading & Unloading at Oil Terminal; Distribution System at the Head Office of Oil Company; World Energy Situation & Challenges

<16 countries / 22 participants>

Site visits: San-ai Oil Co., Ltd. (Haneda Branch Office);
Tatsuno Corporation (Yokohama Plant);
Uyeno Kosan Ltd. (Kawasaki Field Office); Cosmo Oil Co., Ltd. (Yokkaichi Refinery);
JFE Steel Corporation (West Works);
JX Nippon Oil & Energy Staging Terminal Corporation (Kiire Base);
Cosmo Oil Co., Ltd. (Head Office)

Countries: Bahrain, Brazil, Indonesia, Iraq, Kazakhstan, Kuwait, Libya, Myanmar, Nigeria, Qatar, Saudi Arabia, Sudan, Thailand, UAE, Uzbekistan, Vietnam

TR-7-13 Maintenance Management
May 28 – June 14, 2013 **Lecturer: Hiromitsu Saito**

Content: Petroleum Industry in Japan;
Maintenance Management in Japanese Refineries;
Maintenance Activities in Japanese Refineries;
Manufacture and Inspection Technologies for Turbine and Boiler; Manufacture Technology and Material Characteristics of Stainless Steel Tubes & Pipes; Maintenance Management & Technology as Contractor; Reliability Management in the Refinery, Trouble Experiences and Countermeasures;
Project Management, Maintenance Management, Risk & Reliability Management, Inspection Management System; Safety and Reliability of Aged Plants; Plant Life Cycle Engineering;
Project Management Activities in a Japanese Refinery and Maintenance Management by TPM

<11 countries / 15 participants>

Site visits: Mitsubishi Heavy Industries, Ltd. (Nagasaki Shipyard & Machinery Works);
Nippon Steel & Sumitomo Metal Corporation (Steel Tube Works);
Sankyu Inc. (Maintenance Centre); Toa Oil Co., Ltd. (Keihin Refinery);
JGC Corporation (Yokohama Headquarters)

Countries: Indonesia, Iraq, Kazakhstan, Kuwait, Myanmar, Nigeria, Pakistan, Saudi Arabia, Qatar, UAE, Vietnam

TR-8-13 Refinery Management
May 29 – June 12, 2013 **Lecturer: Tetsuji Kubota**

Content: Overview of the Oil Industry in Japan;
Project Management / EPC Business / Plant Safety Design, Risk Management;
An Example of Maintenance Management / Carbon Management / Energy Management;
Safety Management / Environmental Management / Production Planning Management /Human Resource Management / Refinery Efficiency Improvement;
Rational Thinking Management; Case Study

<12 countries / 17 participants>

Site visits: JGC Corporation (Yokohama World Operation Center); JX Nippon Oil & Energy Corporation (Mizushima Refinery)

Countries: Cambodia, Indonesia, Kuwait, Libya, Myanmar, Nigeria, Qatar, Sudan, Thailand, UAE, Uzbekistan, Vietnam

Study on the Application of Ground Deformation Monitoring Technologies towards Preserving the Natural Resources Infrastructure's Potential in Saudi Arabia

KACST-JCCP 1st Joint International Workshop for the Earth's Surface and Subsurface 4D Monitoring

JCCP and King Abdulaziz City for Science & Technology (KACST) implemented a study on Application of Ground Deformation Monitoring Technologies towards Preserving the Natural Resources Infrastructure's Potential in Saudi Arabia over a period of four years, from fiscal 2009 to 2012.

1. Background

In Saudi Arabia's oil fields, ground subsidence is occurring as a result of changes in the subsurface structure brought about by many years of crude oil production and injection of seawater, thereby raising concerns about the impact of ground subsidence and induced earthquakes on refineries, pipelines and other oil facilities.

In response to this situation, the study was implemented to preserve the potential of oil-related infrastructures in Saudi Arabia by detecting any impact of ground subsidence and induced earthquakes in advance. More specifically, the study aimed to examine the feasibility of risk management using induced earthquake analysis technology and active earthquake exploration technology to monitor changes in the subsurface structure.

2. Overview

1) Implementation period: April 1, 2009 – March 31, 2013 (four years)
2) Overseas counterpart: King Abdulaziz City for Science and Technology (KACST)
3) Participating companies: NTT Data CCS Corporation
4) Activities: The following activities were implemented through a joint effort between JCCP and KACST based on the main theme of establishing ground deformation monitoring technologies by applying the ACROSS continuous seismic monitoring system (accurately controlled routine-operated signal system) and analysis technology. Developed in Japan, the ACROSS system uses accurate sinusoidal waves to monitor seismic motion, and has been applied to various studies in the earth sciences field.
   - Analysis of induced earthquakes
   - Development of seismic analysis tools

- Installation and operation of seismometers
- Training in seismic analysis
- Installation and operation of the ACROSS system and analysis of the data obtained
- Monitoring of ground deformation in oil fields
- Technical examination of the integrated analysis of ground subsidence and seismic analysis

3. Observations

In the study, the ACROSS seismic source was applied to geophysical exploration, and a test was performed to monitor ground deformation using its high reproducibility. Additionally, an air injection test was performed in Awaji Island, in which the location of air spaces and their movement were successfully assessed by injecting air into the strata. Furthermore, a monitoring test was performed at a water pumping field in Saudi Arabia, with results indicating that time-lapse changes in the locations of the water table could be monitored over time.

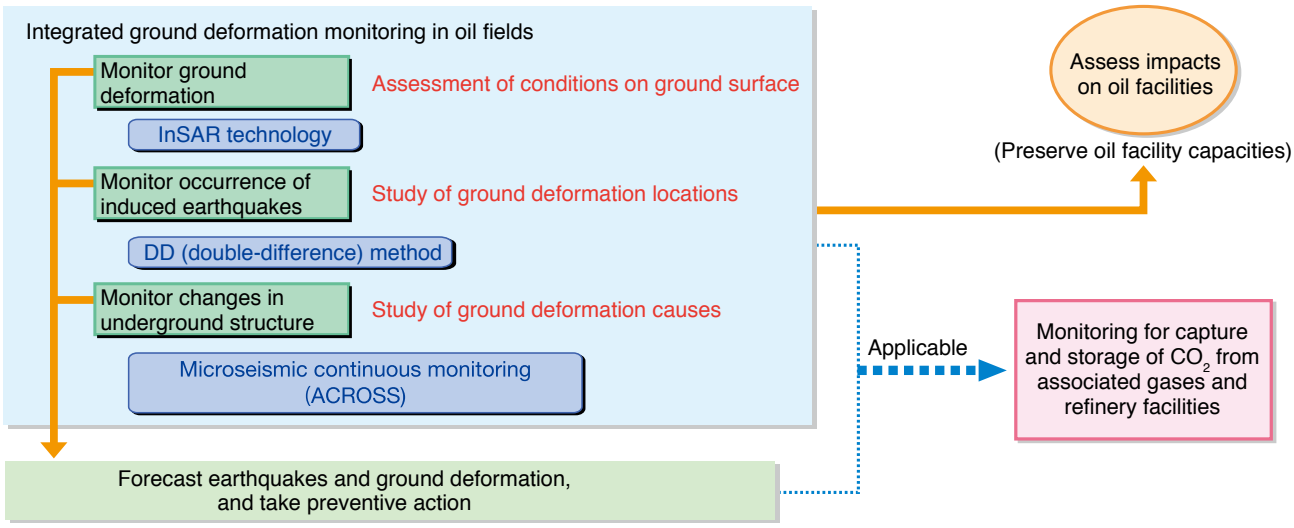
In January 2012, KACST and JCCP held the 1st Joint International Workshop for the Earth's Surface and Subsurface 4D Monitoring at KACST in Riyadh. Attended by experts related to surface and subsurface deformation monitoring and resource exploration and as many as 300 visitors, the workshop captured the strong attention of geophysics experts to the ACROSS system and its analysis method.

The ground deformation monitoring technologies deliver an extremely high level of reproducibility, and are suited to hourly monitoring of subsurface changes in such places as oil and natural gas reservoirs and CO_2 underground storage. For this reason, the technologies are also garnering strong attention for their potential to contribute to carbon capture and storage (CCS), which has become a focus of widespread attention as a core technology for environmental conservation, by monitoring storage conditions before CO_2 generated from oilfield-produced gas and oil refining facilities could be stored in underground sealed layers. A demonstration test of the results of the study will be launched as a new project next fiscal year.

JCCP hopes to further deepen ties between Saudi Arabia and Japan in the future through technical cooperation such as this study.

<by Toshifumi Amemiya, Technical Cooperation Dept.>

Ground deformation monitoring technologies



Source: NTT Data CCS Corporation

Feasibility Study for Hydrogen Production (Organic Chemical Hydride Method) and Storage, Transportation, Utilization in Saudi Arabia

JCCP and Saudi Aramco jointly implemented the Feasibility Study for Hydrogen Production (Organic Chemical Hydride Method) and Storage, Transportation, Utilization in Saudi Arabia over a period of two years, from fiscal 2011 to 2012.

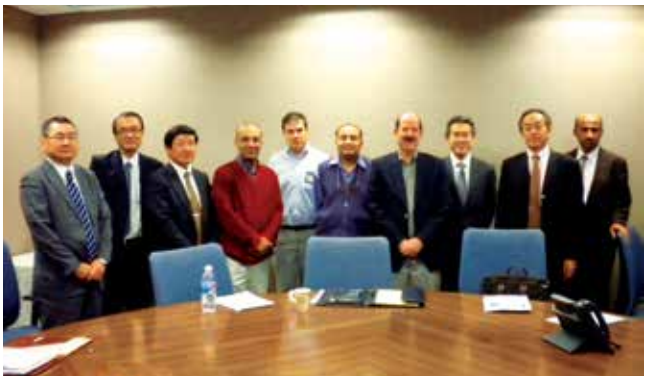
1. Background

Combating global warming through CO_2 reduction is an important issue in Japan. As a measure for addressing this issue, policies are being implemented to promote the dissemination of hydrogen fuel cell vehicles that do not release CO_2.

Japan has succeeded in developing and commercializing a technology for long-distance mass transportation of hydrogen for the first time in the world. It is garnering particular attention for its organic chemical hydride method, which adds hydrogen to aromatics to convert it to a saturated ring compound (organic chemical hydride) so that the hydrogen can be transported in liquid state at ordinary temperatures and pressures. Since this method utilizes existing infrastructure and know-how for the storage and distribution of oil products, it has the potential to become a promising energy transportation method in the near future.

Meanwhile, in oil-producing countries, various sources of hydrogen are available, including hydrogen produced from fossil resources such as naphtha and natural gas, hydrogen generated from associated gases that have been used as fuel up to now and by-product hydrogen from refineries. When using these hydrogen sources, the CO_2 generated in the process of producing hydrogen from fossil materials could be efficiently treated by carbon capture and storage (CCS) and enhanced oil recovery (EOR) technologies.

By utilizing clean hydrogen as a new energy product, Japan could make a significant contribution to preventing global warming, as well as expand energy options in society after the Great East Japan Earthquake in 2011.



With members of Saudi Aramco

By the same token, oil-producing countries could engage in the export of new energy products that contribute to global warming prevention, and could also deepen cooperative relationships with Japan, as the realization of hydrogen production from solar energy and other alternative energy sources in the future would allow them to export energy using the same infrastructure on a permanent basis.

2. Overview

1) Implementation period: April 1, 2011 – March 31, 2013 (two years)
2) Overseas counterpart: Saudi Aramco
3) Participating companies: Chiyoda Corporation
4) Activities: The following studies were conducted to examine the business feasibility of efficient hydrogen production in oil-producing countries, the organic chemical hydride production process, and hydrogen supply to Japan.
   (1) Study on the hydrogen production process (hydrogen production using fossil fuels and renewable energy sources)
   (2) Study on business feasibility related to the hydrogen storage and transportation technology

based on the organic chemical hydride method

(3) Study on the utilization of hydrogen (large plants, hydrogen stations)

(4) Conceptual design of a plant (case study)

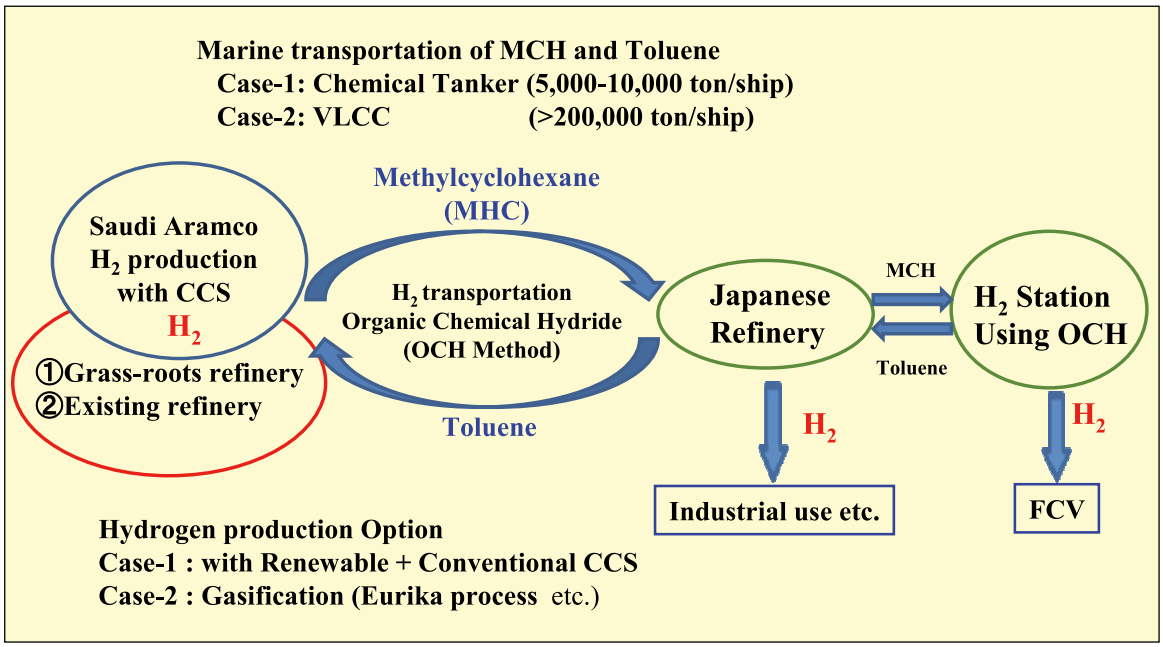
3. Observations

Through this study, Japan's advanced technologies in the relevant field were introduced, the potentials of hydrogen as a new energy source were jointly examined by the parties involved, and the feasibility of commercializing the relevant technologies was verified. In this respect, the study had significant meaning, and has helped strengthen the relationship of trust between members of Saudi Aramco and JCCP.

JCCP hopes to further deepen ties between Saudi Arabia and Japan in the future through technical cooperation such as this study.

<by Toshifumi Amemiya, Technical Cooperation Dept.>

Organic hydride supply chain



Source: Chiyoda Corporation

Study on Compositional Analysis of Selected Cuts of Kuwait Heavy Crude Oils and Its Impact on Hydroprocessing

Over a period of three years, from fiscal 2010 to 2012, JCCP and Kuwait Institute for Scientific Research (KISR) implemented the Study on Compositional Analysis of Selected Cuts of Kuwait Heavy Crude Oils and Its Impact on Hydroprocessing in Kuwait.

1. Background

Kuwait meets its domestic demand for oil products by mixing crude oil for export with heavy crude oil and processing them at three refineries in the country. The country also exports surplus oil products such as diesel fuel. Furthermore, to maintain a steady revenue from crude oil, it needs to process new heavy crude oils such as Lower Fars crude oil and Eocene crude oil within the country and maintain its export of relatively light Kuwait Export crude oil (KEC). Toward this end, Kuwait National Petroleum Company (KNPC) is promoting two projects simultaneously—a new refinery project and a clean fuel project at its existing refineries.

Under this situation, KNPC has strongly requested KISR to conduct a study on the development of desulfurization catalysts and the evaluation of catalyst performance for diesel fuel and heavy oils. Thus, KISR requested JCCP's technical cooperation, and commenced a study with the participation of Nippon Mining Research & Technology Co. Ltd. (now JX Nippon Research Institute, Ltd.) and Kyushu University.

Presentation of the results of the study to KNPC

Invited engineers

2. Overview

1) Implementation period: April 1, 2010 – March 31, 2013 (three years)
2) Overseas counterpart: KISR
3) Participating companies: JX Nippon Research Institute, Ltd., Kyushu University
4) Activities: This study was implemented with emphasis on the following three objectives.
   (1) To evaluate the reaction characteristics of the feedstock for diesel fuel produced from heavy and ultra-heavy crude oils, and heavy oil by compositional analysis before and after desulfurization reaction in a hydrodesulfurization unit.
   (2) To examine ideas concerning the direction of improvement for the development of new high-performance catalysts, with a focus on demetallization catalysts for the desulfurization of heavy oil feedstock. Also, to propose outstanding combinations of commercial catalysts and to select and provide a catalyst for use in a pilot test based on that knowledge.
   (3) To propose test conditions for the pilot test apparatus at KISR, and to examine and propose improvements for operations, the collection of samples and analysis items, as necessary.

First, four types of crude oil, including crude oil for

Test apparatus at Kyushu University

Test apparatus at KISR

export, heavy crude oil, Lower Fars crude oil and Eocene crude oil, were transported from Kuwait to Japan, to secure feedstock oils for the test to be conducted in Japan on the distillation of diesel fuel fractions (260 – 340°C fractions, 340 – 350°C fractions, 350 – 360°C fractions) and bottom oil (fractions above 360°C). Using these feedstock oils, a reaction test was performed by using an autoclave at Kyushu University, and a reactivity analysis was performed of desulfurization characteristics according to the different types of crude oil.

The desulfurization reactivity of diesel fuel fractions is largely influenced by the difference in type of crude oil, but it was found that the sulfur content of 260 – 340°C fractions could drop below 10 ppm regardless of crude oil type. It was also found that there are many impediments to reducing the sulfur content of two fractions of heavy cuts of Lower Fars crude oil and Eocene crude oil to below 10 ppm (340 – 350°C fractions and 350 – 360°C fractions).

With respect to bottom oil, a microanalysis and structural analysis was performed of vanadium and nickel, which influence desulfurization. The result showed that desulfurization is more difficult than demetallization.

The pilot tests conducted at KISR included an evaluation of the reaction characteristics of the bottom oil of four types of crude oils in fiscal 2011 and an evaluation and test of catalyst life conducted using the bottom oil of the heaviest Lower Fars crude oil in fiscal 2012. The results of these tests indicated practically the same trend as the results of tests conducted in Japan, and indicated the successful transfer of relevant technologies.

3. Presentation at the Kuwait-Japan Joint Symposium

In fiscal 2011, KISR presented the results of the above study at the 13th Kuwait-Japan Joint Symposium held at KISR on January 17 and 18, 2012 as an interim report meeting for the study. KISR and Kyushu University each gave a presentation, with KISR giving a general description of the study, and Kyushu University introducing the results of advanced structural analysis and an evaluation of reactions in the autoclave test unit.

The presentation by Kyushu University invited many questions and comments, and inspired deep interest in molecular structures, such as of carbons, sulfur and metals inside crude oil and in the comparison with the reaction results. Moreover, it elicited a request from KISR for research on the reactions of heavy fractions in atmospheric residue and the deterioration of catalyst after mid-operation of the desulfurization unit.

Kuwait-Japan Joint Symposium

4. Observations

In this study, which focused on four types of crude oil in Kuwait, the reaction conditions and desulfurization catalysts were sought for ultra-deep desulfurization of diesel fuel fractions, the molecular structure of desulfurization-resistant chemical species was revealed, and suggestions were offered for operational improvement of the hydrodesulfurization unit and other facilities. With respect to the bottom oil fractions of the four types of crude oil, as well, the characteristics of demetallization/desulfurization reactions were sought, a structural analysis and reaction analysis were performed on feedstock oil and product oil at the molecular level, and suggestions were offered for operational improvement in the refinery.

It is hoped that these results will contribute to KISR's new refinery project and clean fuel project at existing refineries, and to ultimately strengthening ties between Kuwait and Japan.

<by Hiroaki Hara, Technical Cooperation Dept.>

Technical Cooperation

Study on Removal of Acid Gases from Natural Gas using Membrane Contactors, Phase II (UAE)

The study on Removal of Acid Gases from Natural Gas using Membrane Contactors was implemented by JCCP with the participation of JX Nippon Research Institute, Ltd., and with subsidy from the Ministry of Economy, Trade and Industry (METI) for technical cooperation projects in oil-producing countries. In cooperation with United Arab Emirates University as JCCP's counterpart, it was implemented over a period of five years, from fiscal 2008 to 2012.

1. Background

UAE is experiencing a surge in economic growth mainly in the oil and gas industries, but accompanying this growth are heightening concerns about global warming and environmental pollution issues. To address this situation and to conserve the environment, UAE University strongly requested a study on acid gas treatment, in close recognition of the needs of the Abu Dhabi National Oil Company (ADNOC) Group, which essentially controls the oil and gas industries in UAE. The University also proposed this study to the ADNOC Group, and captured the interest and support of ADNOC and Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS).

As the sole comprehensive national university in UAE, UAE University also serves as a research and education institution for the country's oil industry. Thus, it is an important counterpart to JCCP in strengthening UAE-Japan relations.

In light of the above-mentioned situations, implementing this study based on Japan's vast expertise in environmental countermeasure technologies in the oil industry sector has significant meaning in JCCP's efforts to strengthen the friendly relationship between the two countries.

Against this background, this study specifically focused on examining improvement measures for acid gas treatment, using ADGAS's Das Island LNG Plant as a model.

2. Overview

In Phase I of the study, which was implemented from fiscal 2005 to 2007, a test system and mathematical model for a CO_2/CH_4 two-component sample gas were developed in a university laboratory (mainly for ordinary temperatures and pressure, and partially for high pressures), to verify the potentials of membrane contactors in the acid gas removal process.

Based on the results of Phase I, Phase II initially focused on establishing a test system and mathematical model for high temperatures and pressures similar to

Participants of the Scientific Council Meeting

operational conditions in the workplace, for an H_2S/CH_4 two-component sample gas and a $CO_2/H_2S/CH_4$ three-component sample gas. Then, the applicability of membrane contactors as a new process for acid gas removal was demonstrated at the laboratory level, and the implementation of a continuous treatment test was examined using actual gas at the Das Island LNG Plant.

(1) Acid gas removal test: A simulation test was performed in a university laboratory, envisaging the continuous treatment test to be performed at ADGAS's LNG plant using actual gas, to demonstrate the feasibility of the test. Using a hollow fiber membrane processing machine, polymeric hollow fiber membranes were produced under various conditions to achieve high-efficiency gas separation.

(2) Development of a mathematical model: Again envisaging the continuous treatment test to be performed at ADGAS's LNG plant using actual gas, the high-temperature, high-pressure membrane contactor $CO_2/H_2S/CH_4$ absorption model was modified, and a simulation was performed to validate the model using test data.

(3) Examination of field test equipment: Safety measures for the field test equipment were examined, a preliminary design was produced, and the quantity survey was reviewed, once again envisaging the continuous treatment test to be performed at ADGAS's LNG plant using actual gas.

The results of the study can be summarized as follows.

(1) The production technology and characteristic evaluation technology for polymeric hollow fiber membranes were transferred to the UAE side.

(2) Hollow fiber membranes that could withstand pressures as high as 50 bar were successfully produced, and an acid gas removal test was successfully completed at a gas temperature of 50°C and an absorbent temperature of 100°C, which resemble actual conditions at the ADGAS plant, using an eight-component gas mixture and a three-component adsorbent. (World first)

(3) A complex and precise mathematical model for acid gas removal using membrane contactors was developed in consideration of physical, thermal and momentum balances, and a numerical solution was successfully achieved from the model. (World first) The predicted values derived from the model closely corresponded to the test data, and were able to be used in the simulation performed in the field test.

(4) The continuous treatment test to be performed at the ADGAS plant using actual gas was examined, the preliminary design, including safety measures for field test equipment, was completed, and a preliminary estimate of the manufacturing cost of field test equipment was prepared. The field test equipment was unable to be produced in this study, but ADGAS has shown an interest in implementing the field test.

3. Observations (Summary)

This study on acid gas treatment by membrane separation was implemented with the aim of improving ADGAS's Das Island LNG Plant, which provides large supplies of LNG to Japan. It was completed successfully

with highly significant results, owing to the extensive efforts of many people, including Dr. Mohamed Al-Marzouqi, chief researcher, other researchers at UAE University, and laboratory assistants.

The results of the study have been reported every six months at the Scientific Council Meeting held regularly for evaluation by Dr. Gharib Aly, Professor Emeritus at Lund University, who is also an advisor for JCCP. After evaluation, the results have also been disclosed to members of UAE University, ADGAS engineers and other parties concerned, as appropriate, and were presented at the Joint GCC-Japan Environment Symposium hosted by JCCP in fiscal 2011. On the Japanese side, the study received research guidance from Dr. Masaaki Teramoto, Professor Emeritus at Kyoto Institute of Technology, and Dr. Hideto Matsuyama, Professor at the Department of Chemical Science and Engineering, Graduate School of Engineering, Kobe University.

It is hoped that technical exchanges that have been held among members from UAE University, ADGAS, JX Nippon Research Institute and other organizations concerned in the increasingly important environment sector and the results that have been obtained through this study have helped to promote even greater cooperation between UAE and oil-related organizations in Japan.

A Scientific Council Meeting held at UAE University

<by Masahiko Shibata, Technical Cooperation Dept.>

Technical Cooperation

Study for Operation Improvement at QP Refinery

JCCP implemented the "Study for Operation Improvement at QP Refinery" in fiscal 2012 with Qatar Petroleum's Mesaieed Refinery as its counterpart and Cosmo Engineering Co., Ltd. as a participating partner from Japan, and successfully brought the study to a close after making constructive improvement proposals.

Members from the Mesaieed Refinery and Cosmo Engineering Co., Ltd.: Mr. Salim (third from left)

1. Background

QP's Mesaieed Refinery is comprised of three main systems, namely Refinery 1, Refinery 2, and a condensate refinery. The first group of crude oil atmospheric distillation units (Refinery 1) was constructed in 1974 with a 10,000 b/d capacity. The second group of crude oil atmospheric distillation units (Refinery 2) was constructed in 1984 with a 70,000 b/d capacity, along with other downstream facilities. Furthermore, export/import facilities were installed in 1989, a group of condensate distillation units (condensate refinery) was constructed in 2001, and various enhancements have been made for greater efficiency thereafter.

Against this background, JCCP has continuously implemented a number of technical cooperation projects with the Mesaieed Refinery as its counterpart, since fiscal 2004. They have included a study on flare gas

Final report meeting

reduction technologies, a study on LPG recovery, a study for operation improvement, and technical support for corrosion/fouling problem. Based on the relationship of trust that these projects have fostered, JCCP agreed to implement the following project in fiscal 2012 in response to a strong request from its Qatari counterpart.

2. Overview

At the Mesaieed Refinery, LPG and naphtha fractions from the atmospheric distillation column are distilled into total naphtha, and the total naphtha is processed in a naphtha hydroprocessing unit. There were concerns, however, about unwashed naphtha falling into the slop tank during start-up and shut-down of the unit or during a malfunction, because unwashed naphtha contains flammable gas (LPG), which could swell and damage the floating roof in the slop tank or cause a large amount of hydrocarbon vapor to be released into the atmosphere. Thus, measures for operation improvement were sought. Additionally, in the polymer gasoline unit, not only is gasoline produced from light olefins from the residual oil fluid catalytic cracking unit, but LPG is also generated as a by-product, and the remaining offgas is used as fuel gas in the refinery. Again, there were concerns of the fractions of the by-product LPG flowing into the offgas and reducing the yield of by-product LPG fractions, so operation improvement was desired as a means for improving LPG yield.

Under this situation, a study was implemented to provide support for operational improvement at the Mesaieed Refinery based on Japan's experience and accumulated technologies for operation improvement in the oil industry. The study not only contributed to improving operations in the refinery, but also has successfully transferred Japan's oil refining technologies and experience in operational improvement to Qatar Petroleum.

3. Summary

In regard to the operational improvement of atmospheric distillation units, the majority of refineries in Japan have a unit that separates flammable gas fractions from distilled naphtha (stabilizer), so it would be unusual for them to experience the type of problem that the Mesaieed Refinery is facing. Therefore, to address the problem at the Mesaieed Refinery, the status of actual operations was investigated and operating data was collected with the cooperation of the refinery, and the collected operating data was analyzed. Based on the results of the above, the following proposals were made based on thorough consultation and discussion.

- Proposal for addressing the issue through an improvement of operational procedures
- Proposal for addressing the issue through a diversion of part of the equipment
- Proposal for addressing the issue by installing a new unit (two examples)

In addition to the above, an explanation was also given of the actual startup procedure for atmospheric distillation systems in Japanese refineries.

In regard to the issue of improving the yield of by-product LPG from the polymer gasoline unit, the initial request from the Mesaieed Refinery was to investigate the lack of capacity of the by-product LPG separation system. However, as a result of examining operating status with the cooperation of the refinery, it was judged that the hydrogenation system upstream of the by-product LPG separation system would also need to be examined, so a final report was prepared that included the hydrogenation system in the scope of the study. The fact that the final report meeting was held with the attendance of concerned parties from various departments in the refinery, and that active, cross-departmental discussions sprang up on the spot after the report, indicated that the proposals were of high relevance and benefit to the Mesaieed Refinery.

<by Masatoshi Yokotsuka, Technical Cooperation Dept.>

Completion of the Joint Project for Introduction of Produced Water Treatment in Iraq

Fiscal year-end reporting meeting for four projects under the Special Cooperation Program for Iraq

On March 4, 2013, a fiscal year-end presentation meeting on projects implemented by JCCP and the Petroleum Research & Development Center (PRDC) of the Ministry of Oil-Iraq was held in Istanbul. After a reporting of the results of the joint study on "Technical Support of Introduction of Produced Water Treatment for South Oil Company (SOC) in Iraq," the front-end engineering design (FEED) for a practical-level water treatment facility was handed over to PRDC and SOC, from participating companies on the JCCP side, namely the Water Use Promotion Center and Swing Corporation.

<Background and Overview of the Project>

1. Background

In Iraq, water that is produced in the crude oil production process is released and treated in an evaporation pond at present, but as a measure for environmental conservation, government policy is slated to prohibit the release of produced water into evaporation ponds from 2014. In anticipation of this policy, SOC sought to reutilize produced water in the water-flooding process in the production of crude oil, instead of treating it as wastewater, and JCCP responded to this need by providing technical support for produced water treatment based on Japan's wastewater treatment technologies.

In December 2009, JCCP and the Ministry of Oil-Iraq reconfirmed the importance of resuming and stimulating greater exchanges with a reconstructed Iraq through training activities and technical cooperation projects, and signed a memorandum of agreement (MOA) to that effect. In line with the MOA, JCCP launched a special cooperation program for Iraq in fiscal 2010, and implemented two projects that address priority issues of

The pilot plant that has been transferred from Japan to North Rumaila Field DS-1

FEED presentation and project completion ceremony

the oil ministry—this project and technical support for asphalt production technology—as preliminary surveys for the implementation of a technical cooperation project. Thereafter, the project commenced in full in fiscal 2011 as a joint undertaking by JCCP and the Ministry of Oil-Iraq, following the signing of a project implementation agreement.

2. Overview

The joint project was implemented at SOC over a period of two years, from April 1, 2011 to March 31, 2013, with the participation of the Water Use Promotion Center and Swing Corporation. Its objectives were to draft a system for produced water treatment, and to implement and propose to the Iraqi side a front-end engineering design (FEED) for a practical-level water treatment facility.

In the first year of the project, a pilot plant was built in Swing Corporation's Fujisawa Office, and pilot tests using simulated produced water were performed with the participation of two engineers from Iraq. After verifying the plant's treatment performance and transferring operational technologies to the Iraqi engineers, the plant was moved to a crude oil production plant operated by SOC in the North Rumaila oil field (North Rumaila Field DS-1).

In the second and final year, the Iraqi side performed a pilot test of the plant using produced water from North Rumaila Field DS-1, and confirmed its treatment potential. Based on the results of the test, the Japanese side produced and provided the FEED for the actual facility to the Iraqi side.

In the coming years, if everything goes smoothly, SOC will prepare a tender document for the water treatment facility based on the FEED provided by the Japanese side and the technologies it has acquired, call for bids, and select a contractor or vendor. Construction of the facility will begin thereafter.

3. Summary

In addition to the produced water treatment project described above, three other projects were also implemented under the Special Cooperation Program for Iraq, i.e. the study on "Development of asphalt industry and finding new applications in Iraq" (extended for a year; slated for completion in FY2013); "Technology cooperation for lubricating oil production" (undertaken as a joint project from FY2013); and the "Study on technical support of introduction of produced water treatment for NOC" (completed as a preliminary survey project). All projects have received high praise from the Ministry of Oil-Iraq for their contribution to addressing technical issues in Iraq.

It is also worth noting that the Water Use Promotion Center and Swing Corporation have again joined hands with the Ministry of Oil in implementing a new, preliminary survey project: "Study on technical support of introduction of formation water treatment for refineries in the southern region of Iraq," slated to commence within this fiscal year.

<by Hironao Naganuma, Technical Cooperation Dept.>

Energy Conservation Study on CDU Furnace of Dung Quat Refinery in Vietnam

Members of the final reporting meeting held at the Dung Quat Refinery

In fiscal 2012, JCCP implemented the Energy Conservation Study on CDU Furnace of Dung Quat Refinery under the Special Cooperation Program for Vietnam, with Vietnam Petroleum Institute (VPI), a subsidiary of Petrovietnam, as its counterpart, and Idemitsu Engineering Co., Ltd. as a participating company from Japan.

1. Background and Objective

Vietnam is garnering expectations for even greater growth in the future, not only because it is rich in natural resources such as crude oil, but also because it has displayed a continuous trend of high economic growth in recent years. At the same time, however, the country is dependent on imports for most of its industrial products, and while it is an oil-producing country, it imports most of its oil products, as well as faces chronic electricity shortages, among other energy issues.

Binh Son Refining & Petrochemical Co., Ltd. (BSR), an affiliate of Petrovietnam, commenced operations of the Dung Quat Refinery in 2009, and took a large step toward the domestic production of oil products. As the country's first refinery, the Dung Quat Refinery has had its initial problems, but it overcame them and now enjoys stable operations. Under this situation, its next challenge is said to lie in promoting energy conservation. However, the country is ill-prepared to formulate energy conservation measures on its own, as there are few human resources in Vietnam who possess the necessary skills and experience in oil engineering. JCCP thus decided to investigate whether Japan could contribute to the effective utilization of energy in Vietnam by transferring the Japanese oil industry's engineering skills and experience to local engineers. The study focused on analyzing the present status of energy consumption of the crude distillation unit (CDU) furnace at the Dung Quat Refinery, examining potential energy conservation technologies suited to the facility, and on calculating the cost required for facility renovation, to evaluate cost performance if BSR were to actually renovate the facility.

For this study, an investigative team was organized with the inclusion of Vietnamese engineers, and the series of examinations were jointly pursued by Japanese and Vietnamese members, so that Japan's vast experience in introducing energy-saving measures to furnaces, and the process of examination toward their introduction, could be transferred to the Vietnamese side.

2. Overview

The study mainly comprised the following three activities.

(1) Analysis of thermal efficiency of the CDU furnace

First, the operating data of an actual CDU furnace was obtained, including its crude oil throughput, fuel use and furnace temperature, and its present operating performance was examined in terms of heat exchange efficiency and other relevant factors. By comparing this data to that of Japanese refineries, it was possible to identify areas for improvement.

(2) Examination and economic evaluation of facility renovation for efficiency improvement

As a result of examining energy conservation measures for the CDU furnace based on the areas for improvement that were identified, the following two measures were selected as the most appropriate from among various improvement technologies employed in Japanese refineries.

- Introduction of an optimum combustible air control system based on oxygen content in exhaust gas as an indicator
- Installation of a combustible preheater for recovery of heat from exhaust gas

A basic design was formulated for the introduction and installation of the above two measures to the CDU furnace at the Dung Quat Refinery, and the cost of introduction and energy conservation effects were estimated and compared. The result indicated that both measures are effective measures with short payback periods, and that they are worthy of further consideration.

(3) Technical transfer of the process of examining energy conservation measures through an invitation seminar

By discussing issues in (1) and (2) above jointly with VPI, the process of examining energy conservation measures for the furnace, and specific matters for consideration at each stage of the process, were able to be transferred to VPI.

At the same time, engineers from VPI were invited to attend a seminar, which featured intensive lectures and an exercise in applying the actual results of furnace renovation measures. The seminar provided practical knowledge to the engineers and promoted exchanges between oil engineers from both countries.

3. Observations and Summary

The study analyzed the present efficiency of the CDU furnace and examined renovation measures for efficiency improvement, and thereby clarified the cost effectiveness of a renovation for energy conservation.

The conclusion derived from the study was that a renovation toward energy conservation of the furnace would be an effective measure with a short payback period, and that it is a measure worthy of further consideration. Furthermore, other potential key issues were also brought to light and presented to VPI toward the next stage in the renovation of the furnace, including the impacts of changes in operating conditions accompanying the renovation to other existing facilities and the valuation of such impacts, and ancillary construction work that would arise in conjunction with the renovation.

Moreover, through the study, energy conservation technologies were transferred to Vietnamese engineers, and a stronger partnership was established between relevant parties in the two countries.

With their newly acquired knowledge, VPI engineers are expected to be capable of examining and implementing facility improvement measures on their own, and of ultimately contributing to the further development of oil refining technologies in Vietnam.

<by Masahiko Shibata, Technical Cooperation Dept.

Reporting of the results of the study to the Dung Quat Refinery

Preliminary Survey on Hydrogen Liquefaction in Qatar

During fiscal 2012, JCCP and Qatar Petroleum (QP) implemented a preliminary survey on liquefied hydrogen production in Ras Laffan, Qatar.

1. Background

Qatar is home to the North Field Gas Reserves, which has the world's largest reserve of natural gas, and is an important energy supplier to Japan. As a worldwide increase in demand for natural gas is expected in the future, the reserves are garnering stronger attention than ever before. To secure a stable energy supply, Japan should also maintain a close relationship with Qatar.

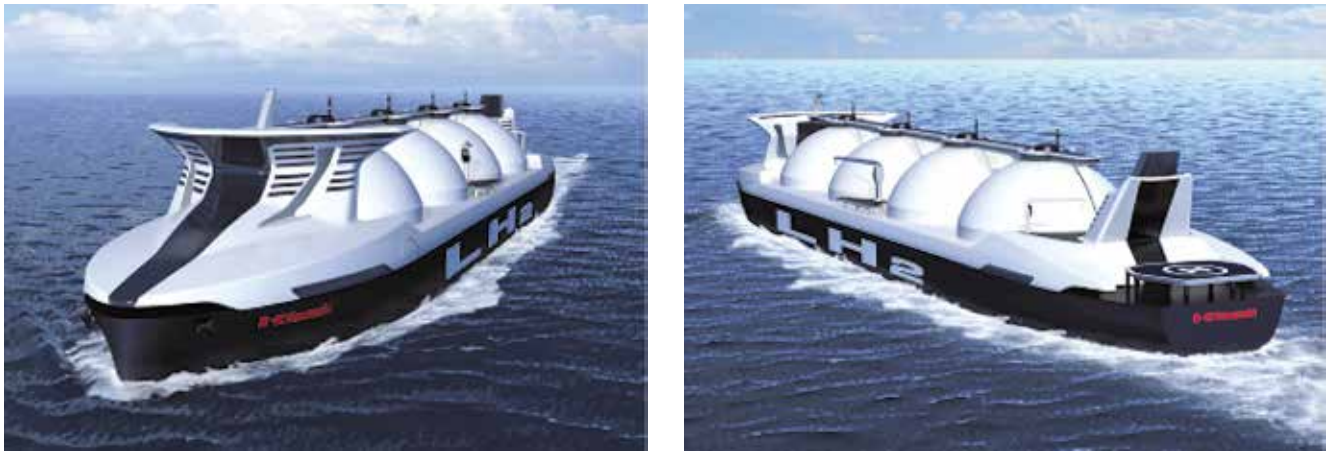
Meanwhile, natural gas is considered the ultimate clean energy source, and efforts are being made in Japan and around the world to use natural gas to produce hydrogen. Many refineries have already begun to use hydrogen in large amounts for desulfurization and other such processes, but in the future, demand for hydrogen is also expected to increase for use in power generation and as automotive fuel. Although hydrogen can be produced from various energy sources, using reformed natural gas is a proven method and is considered the best suited to producing large amounts of hydrogen. In this regard, natural gas-rich Qatar is a hydrogen supplier of great potential. Japan, for its part, boasts an impressive worldwide performance record in storing and transporting large amounts of hydrogen, and leads the world in liquefaction technology, particularly in the industrial gas and aerospace sectors.

This study was thus implemented based on the thinking that if Japan's world-class hydrogen liquefaction and storage technologies could be used to transport hydrogen produced in Qatar to Japan, it could contribute to increasing the added value of natural gas in Qatar, and to creating a low-carbon and hydrogen society in Japan.

2. Overview

Implemented with the participation of Kawasaki Heavy Industries, Ltd., this study examined the status of hydrogen production in Qatar and the feasibility of its transportation to Japan, by obtaining relevant information from QP, JCCP's counterpart in this study. It also examined the feasibility of hydrogen production, liquefaction and transportation operations in Middle East oil-producing countries around Qatar.

More specifically, as by-product hydrogen is generated from facilities such as natural gas and ethylene plants that are currently in operation, the study examined the feasibility of relying on by-product hydrogen as a source of hydrogen generation, in terms of supply amounts and cost, and surveyed the present utilization status of by-product hydrogen, in particular. A preliminary study was also made of hydrogen storage and transportation technologies in Qatar.



Rendering of a liquefied hydrogen tanker
(provided by Kawasaki Heavy Industries, Ltd.)

3. Observations

Through examinations in this study, there were found to be various issues to using by-product hydrogen generated from such sources as natural gas and ethylene plants in Qatar. It was thus considered too soon yet to press forward with a hydrogen liquefaction project in Qatar, and the study was decided to be brought to an end for the time being at the close of fiscal 2012.

However, the study had great meaning in terms of the fact that Japan's advanced technologies in the natural gas liquefaction field were introduced to Qatar, and that networks and relationships of trust were established with relevant parties in Qatar.

It is hoped that diverse forms of technical cooperation will continue to be implemented to further deepen ties between Japan and Qatar.

<by Toshifumi Amemiya, Technical Cooperation Dept.>

Conference with QP members (September 2012)

Graduates' Voices

Mr. Abdullah M. Niaz
Project Executive Engineer, Engineering Dept., Project Unit,
Petro Rabigh, Saudi Arabia
Graduate of a regular course on Maintenance Management
(January 2001)

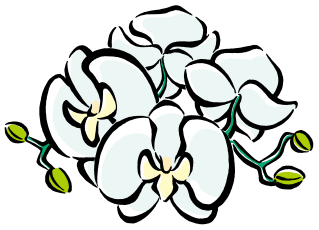
It is always a pleasure to me to receive a copy of *JCCP NEWS*.

I wish to express my deepest appreciation to all JCCP staff for their time and effort in keeping in touch with large numbers of JCCP alumni. I understand that more than 20,000 people have participated in JCCP training courses during the past 20 years. This is not an easy feat, so it is particularly worth noting that Mr. Hiroaki Kudo, the training lecturer who was in charge of the course I attended 11 years ago, still continues to send me email messages. I would also like to thank Mr. Kazumasa Nakazawa for his patience in dealing with us both during the course and during his visit to Rabigh.

The 21 days I spent in Japan are unforgettable and remain firmly in my memory. I distinctly remember the moment the plane landed at Narita Airport in the snow, members of the JCCP staff welcoming us at the airport gate, the city tour of Tokyo we received before training began, the welcome extended to us by Mr. Koichi Kujirai on the first day of training, and the visits made to Japanese cities and refineries to gain hands-on knowledge. The JCCP staff had indeed organized an excellent training program. It has been 11 years since I participated in a JCCP course, but I have never forgotten the JCCP staff, the enjoyable JCCP experience and the respectful kindness of the Japanese people. I pay my deepest respect to your hospitality and sincerity throughout and long after the training period, and also admire your politeness in all situations. These excellent Japanese attitudes are impressed on my mind. Frankly speaking, I miss the friends I made in Japan. I often long to see them again while glancing at old photos.

I wish to end my message by wishing all JCCP staff future success, and look forward to hearing from you again.

I wish you all the best.



Mr. Sase Participates in Prime Minister Abe's Economic Mission to the Middle East

Date: April 30 – May 2, 2013
Destinations: Saudi Arabia (Jeddah), UAE (Abu Dhabi, Dubai)

Description:

Mr. Masataka Sase, Executive Director of JCCP, participated in Prime Minister Abe's economic mission to Saudi Arabia and UAE.

His event-filled agenda included, in Saudi Arabia, a conference of the economic mission with the Prime Minister in Saudi Arabia; in Abu Dhabi, UAE, a dinner hosted by H.H. General Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi, and the UAE-Japan Economic Forum; and in Dubai, a luncheon hosted by H.H. Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister of UAE.

The joint statement issued with the two countries emphasized anew the importance of cooperation in the energy sector. The joint statement made with the government of UAE, was particularly meaningful to JCCP, as it mentioned JCCP's cooperation for the establishment of the refining research center.

(From the left) Mr. Masataka Sase, Executive Director of JCCP; Prime Minister Shinzo Abe; Mr. Koji Hori, General Manager, Administration Dept.; Mr. Junichi Kasuya, General Manager, Riyadh Office

Mr. Sase Participates in an Economic Mission that Accompanied METI Minister Motegi to Abu Dhabi

Date: February 10, 2013
Destination: UAE (Abu Dhabi)

Description:

Mr. Masataka Sase, Executive Director of JCCP, joined members from other Japanese organizations and companies in accompanying H.E. Mr. Toshimitsu Motegi, Minister of METI (Ministry of Economy, Trade and Industry), on his visit to Abu Dhabi, UAE on February 10 following his visit to Saudi Arabia.

In the presence of Minister Motegi and His Excellency Abdulla Nasser Al-Suwaidi, Director General, ADNOC (Abu Dhabi National Oil Company), ADNOC and relevant Japanese organizations signed a cooperation agreement. Also, in the presence of Minister Motegi and His Excellency Nasser Ahmed Khalifa Alsowaidi, Chairman of the Department of Economic Development in Abu Dhabi, a signing ceremony was held for an agreement on Japan-Abu Dhabi industrial cooperation in the education and medical sectors. The entourage also attended a luncheon hosted by the Department of Economic Development and a dinner hosted by the Japanese Embassy in UAE.

Mr. Motegi's recent visit to UAE was the first visit by a METI minister following former Trade Minister Yukio Edano's visit in October 2011. The Abu Dhabi side thus expressed strong expectations of Japan, and confirmed the cooperative relationship between the two countries in broad-ranging areas including oil, personnel exchanges and medicine.

H.E. Mr. Abdulla Nasser Al-Suwaidi, Director General, ADNOC (left); H.E. Mr. Toshimitsu Motegi, Minister, METI (right) (from the METI website)

Nigeria Power and Energy Forum

The Nigeria Power and Energy Forum was held in Tokyo on April 25, 2013 under the sponsorship of the Embassy of Nigeria in Japan. Mr. Masataka Sase, Executive Director of JCCP, participated in the forum as a panelist and introduced JCCP's operations and activities. He explained JCCP's advantage in providing cooperation for human resource development, in line with the theme of the forum, "Partnering to Develop the Nigerian Oil & Gas Sector," while also noting that JCCP has received as many as 800 Nigerian participants to its regular courses, and that Mr. Andrew Laah Yakubu, the present Group Managing Director of Nigerian National Petroleum Corporation (NNPC), is himself a JCCP alumnus of 1985.

Personnel Changes

Councilor, Administration Dept.

Outgoing Personnel

Hisayoshi TANDA

Training Dept.

Outgoing Personnel

Kenichi MOROTA

Kazuo KOJIMA

Incoming Personnel

Masami FUNAYAMA

Taro SHOJI

Eiji TSUKAMOTO

Technical Cooperation Dept.

Outgoing Personnel

Takeyoshi HAISHIMA

Hiraoki HARA

Incoming Personnel

Yukio NOBAYASHI

Tsuyoshi OTA

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 in 2011.
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.

Akio Yamanaka, General Manager, Planning & Coordination
Masumi Kitahara (Ms.), Manager, Planning & Public Relations

Thank you for reading *JCCP NEWS*.
If you have any comments or feedback about this newsletter,
please free to contact us by e-mail.
Your feedback is appreciated.

Planning & Public Relations Group, Administration Department
E-mail: planning@jccp.or.jp

Editorial Postscript

Thank you for reading *JCCP NEWS* No. 116.

For this issue, we received messages from three JCCP alumni: Mr. Andrew Laah Yakubu, Group Managing Director of Nigerian National Petroleum Corporation (NNPC), who participated in a regular course in 1985; Mr. Abdulrehman A. Al-Sebaie from Saudi Aramco, who shared his impressions of a regular course he completed in May 2013; and Mr. Abdullah M. Niaz from Petro Rabigh, who wrote about his JCCP experience in 2001. The timing of their participation ranges over a period of 20 to 30 years, but they share the same deep impression that the Japanese people are courteous and hospitable. This certainly makes us proud to be Japanese.

The active endeavors of JCCP alumni have great meaning to JCCP's operations, and our network of past participants, we believe, has direct bearing on future human resource development programs, technical cooperation projects, international conferences, and VIP invitations. We would also like to ask for your continued support of JCCP.

Masumi Kitahara
JCCP News Editor
Planning & Public Relations Group

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