JCCP NEWS

Newsletter of Japan Cooperation Center, Petroleum

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In this issue:

Topics

JCCP Welcomes a New Executive Director

Mr. Mikio Kojima has retired from the position of Executive Director of JCCP as of June 30, 2008, and has been appointed Executive Advisor, effective July 1. The position of Executive Director has been filled by Mr. Masataka Sase, on July 1.

The next issue of JCCP NEWS will feature messages by Messrs. Kojima and Sase.

We ask for your continued support and cooperation in JCCP.

Mr. Mikio Kojima
Executive Advisor

Mr. Masataka Sase
Executive Director

Signing Ceremony
for the Joint Project on FCC Catalyst Development and Evaluation Technologies in Saudi Arabia

On April 27, 2008, JCCP and King Fahd University of Petroleum and Minerals (KFUPM) held an MOA signing ceremony for the "Technical Cooperation Project on FCC Catalyst Development and Evaluation Technologies in Saudi Arabia," which the two organizations will be jointly implementing. The ceremony was held at KFUPM in the presence of Mr. Hiroshi Oka, Japanese Minister to Saudi Arabia, followed by a press conference and other related events. Other attendees included Mr. Takahiko Yamaji, President of Nippon Oil Research Institute Co., Ltd., who attended on behalf of the two companies that will be responsible for implementing the project (Nippon Oil Research Institute Co., Ltd. and Nippon Oil Corporation), as well as a number of members from Saudi Arabian Oil Company (Saudi Aramco). Amid this gathering, Dr. Sahel N. Abdul-Jauwad, Vice Rector for Applied Research at KFUPM, and Mr. Katsuo Yokoyama, Managing Director of JCCP, mutually signed the agreement. News of the signing ceremony was broadcast on Saudi national TV, followed by a press conference. Dr. Abdul-Jauwad expressed his joy in being able to sign the project agreement. He stated that the goals of the project are to strengthen the relationship of joint research with Japan and develop research capacities at KFUPM. He also emphasized his firm belief that the project will bring beneficial results to the oil refining industry in both countries. Mr. Yokoyama expressed his confidence that the project will contribute to the oil industry in Saudi Arabia and ultimately help KFUPM researchers develop new, advanced catalysts on their own, toward improving productivity in their refineries. Stating that building a strong relationship of trust between the two countries based on the project is JCCP's ultimate goal, he affirmed JCCP's commitment to achieve that goal.

The new project is based on the results of the Technical Cooperation Project on the Effective Utilization of Light Oil Distillates in Saudi Arabia, which was also jointly implemented by JCCP and KFUPM, from April 2006 to March 2007, as part of JCCP's project-finding (PF) activities. It is estimated that FCC catalysts could be used ten times more by installing new FCC units and expanding existing units in Saudi Arabian refineries, as planned. The new project therefore aims to transfer to KFUPM evaluation technologies that Saudi Arabian refineries would need in the future to select an optimum FCC catalyst. It also aims to take this objective further, to help Saudi Arabia build the necessary capacities

Courtesy call on H.E. Dr. Khaled S. Al-Sultan, Rector of KFUPM (left)
Mr. Oka (right), Mr. Yamaji, President of Nippon Oil Research Institute Co., Ltd. (second from right)

Exchange of the contract
Dr. Sahel N. Abdul-Jauwad (right), Mr. K. Yokoyama (left)

for independently developing new catalysts suitable to the country's FCC units in the future.

The project is scheduled to be implemented over a period of three years, from April 1, 2008 to March 31, 2011, with the participation of Nippon Oil Research Institute Co., Ltd. and Nippon Oil Corporation, and is to be implemented in the following four stages.

(1) Introduction of facilities

An advanced cracking evaluation unit (ACE unit) will be installed at KFUPM, and operational training provided to KFUPM researchers, to upgrade research activities related to the evaluation of FCC catalysts.

(2) Technical transfer

Technologies for producing FCC catalysts and for conducting tests using the ACE unit will be transferred to KFUPM.

(3) Evaluation of FCC catalysts

Further technologies will be transferred to KFUPM, to allow KFUPM researchers to actually use the technologies transferred to them in stages (1) and (2), and to evaluate catalysts that are planned to be used.

(4) Development of FCC catalyst

Efforts will be made to foster the ability in KFUPM researchers to research and develop advanced FCC catalysts suitable to FCC units in Saudi Arabia.

The project is expected to improve the processing technologies of FCC units in Saudi Arabia, and to ultimately play an important role in the global oil refining sector.

Prior to the signing ceremony, the Japanese parties to the project paid a call on H.E. Dr. Khaled S. Al-Sultan, Rector of KFUPM. His Excellency acknowledged the significant relationship that JCCP and KFUPM have cultivated through the years, and expressed his strong expectations that the new project will further strengthen and develop the cooperative relationship. He showed especially strong interest in the advancements being made with regard to the high-severity fluid catalytic cracking (HS-FCC) technology, which has been jointly developed by KFUPM, Saudi Aramco, Nippon Oil Corporation, and JCCP. He took note of the development of the semi-commercial HS-FCC unit in Japan, and inquired about the future registration of patents for that technology.

Mr. Yokoyama expressed his strong hopes that the project will further deepen the relationship of trust that KFUPM and JCCP have cultivated through the implementation of numerous projects, to date.

News of the signing ceremony was covered by local newspaper *Al-Watan* (April 28, 2008 edition) and on its English website.

JCCP hopes that the successful completion of the project will further strengthen friendly ties between Saudi Arabia and Japan, and that the transfer of evaluation technologies for FCC catalyst development will contribute to upgrading oil refining technologies in Saudi Arabia.

<Keikoh Sasaki, Technical Cooperation Dept.>

Saudi Gazette

INTERNET EDITION

Friday, 02 May 2008

KFUPM, JCCP sign contract on catalytic research

JEDDAH — King Fahd University of Petroleum & Minerals (KFUPM) and Japan Cooperation Center, Petroleum (JCCP) signed a new contract to support catalytic research in the Kingdom of Saudi Arabia.

Dr. Saheil N. Abduljawad, KFUPM vice-rector for Applied Research, and Katsuo Yokoyama, JCCP managing director, signed the agreement in the presence of Hiroshi Oka, minister of the Japanese embassy in Saudi Arabia.

The accord marks the continuation of the productive collaboration between KFUPM and JCCP since 1990.

The new project calls for exchange of technical know-how between KFUPM and Nippon Oil Research Institute (NORI) in FCC catalyst development and evaluation. The Center for Refining & Petrochemicals (CRP) at KFUPM Research Institute has accumulated more than 15 years of technical collaboration with JCCP mainly in petroleum refining research.

"We believe the project will contribute to the oil industry in Saudi Arabia," Yokoyama said, adding that "in the final stage of the project, we believe KFUPM researchers, in collaboration with Japanese researchers, will develop new high performance FCC catalysts to improve productivity of the refineries in Saudi Arabia. Our ultimate aim is to build the concrete reliable relationship between Saudi Arabia and Japan through the project. JCCP will continue to work earnestly toward this goal."

Abduljawad said the new research project "will foster collaborative research ties with Japan and enhance our mission in establishing a research capability at KFUPM. Combining Japanese expertise in refining and KFUPM scientists, will help us reach these goals more quickly. I'm sure that results of this project will be beneficial to the petroleum refining industry in Saudi Arabia and Japan."

Dr. Sulaiman Al-Khattaf, director of CRP, said the collaboration projects with Japan included the following:

q Development and commercialization of FCC refining technology with partnership between KFUPM, JCCP, Nippon Oil and Saudi Aramco. The new process converts heavy petroleum fractions to gasoline and petrochemical feedstocks.

q Development of high performance catalyst for heavy oil upgrading.

q Enhancement of aromatics production, mainly paraxylene from heavy aromatics.

Under the accord, the university will acquire enhanced capability for the evaluation of FCC catalysts using Advanced Cracking Evaluation (ACE) unit to improve yield and quality of products. - Agencies

جامعة الملك فهد تحصل على 426 مليون
من الأبحاث التطبيقية خلال عا

الظهران: عمر الشدي

أوضح وكيل جامعة الملك فهد للبترول والمعادن
والأبحاث التطبيقية الدكتور سهل نشأت عبد الجواد، أن الج
تجهيزات للأبحاث لا يوجد مثيل لها في منطقة الشرق الأو
الجامعة حصلت على دعم 12 برنامجاً بتكلفة 426 مليون
إلى أن دخل الجامعة من الأبحاث التطبيقة بلغ العام الماض
مليون ريال، جاء ذلك بعد توقيعه ممثلاً للجامعة، ظهر أمس
عقد مشروع مع المركز التعاوني البترولي الياباني، الذي
الإداري للمركز كاتسو بوكوياما، بحضور مدير الجامعة ا
السلطان. ويتعلق عقد المشروع ببحث مشترك حول "ت
حفازات التكسير الحفزي FCC"، والذي تصل تكلفته إلى
ريال سعودي لمدة ثلاث سنوات. وأشار الدكتور عبد الـ
المشروع بهدف إلى تقييم الحفازات المستخدمة في تكسي
البترولية الثقيلة وتحويلها إلى منتجات مرتفعة القيمة مثل
والقائم للصناعة البتروكيماوية. وقال الدكتور عبد الجواد
الجديد ينص على أن يقوم المركز الياباني بدعم التعاون والـ
والخبرات الفنية بين الجامعة ومعهد بحوث شركة نيبون للزيت في
تطوير وتقييم حفازات تكسير المشتقات البترولية الثقيلة. وأضاف أن
التوقيع على العقد يمثل تعزيزاً واستمراراً للتعاون المثمر بين الجامعة
والمركز الياباني منذ عام 1993، في مجالات تعزيز قدرات الجامعة
البحثية والفنية لتقديم الدعم لصالح البترول المحلية فيما يتعلق بتطوير
الحفازات والعمليات التكريرية. وبين الدكتور عبد الجواد أن مشروع
البحث الجديد سوف يساعد الباحثين وأعضاء هيئة التدريس بالجامعة
على التعاون مع باحثين شركة نيبون اليابانية للزيت، بتقديم الحلول
المتعلقة بالبحوث الأساسية والتطبيقية لحفازات التكسير. ومن جهته
أعرب بوكوياما عن ثقته بأن المشروع سوف يدعم صناعة التكرير
بالمملكة ، مشيداً على سمعاته بما نتج عنه التعاون بينهم وبين
السعودية في مجال الأبحاث والتدريب ، وقال إن الجديد في التعاون
السعودي الياباني، هو إرسال عدد من العلماء اليابانيين إلى المملكة
لعرض تجاربهم فيها لمدة مختلفة، وعلى رأسهم عالم الكيمياء
البروفيسور أنوري، الذي سيمكث في السعودية لمدة ثلاثة أشهر
سيعرض فيها خلاصة خبرته التي امتدت إلى خمسة عقود. وبين أن
التعاون السعودي الياباني يتضمن أكثر من 40 مشروعاً خلال الفترة من
1993 إلى 2011 ، تراوحت بين الجامعة وأرامكو السعودية وجامعة
الملك عبدالله، مبينا أن ما ينفقه المركز في المملكة سنوياً يتراوح بين اثنين
إلى ثلاثة ملايين دولار أمريكي.

Articles of the signing ceremony featured in the local newspaper and its English website.

Signing Ceremony for the Joint Project on Removal of Acid Gases from Natural Gas Using Membrane Contactors (Phase II)

On May 19, 2008, United Arab Emirate University (UAE University) and JCCP held a ceremony for the signing of a Memorandum of Agreement (MOA) on a joint technical cooperation project slated for implementation in FY2008.

Members of the Japanese delegation and UAE University, with H.E. Dr. Maitha Salem Al-Shamsi, Minister of State (center)

Joint technical cooperation projects are the mainstay of JCCP technical cooperation activities. UAE University and JCCP began implementing these projects in FY2001, with the participation of the UAE oil industry (Abu Dhabi Oil Refining Company (TAKREER)) and the UAE gas industry (Abu Dhabi Gas Liquefaction Co. Ltd. (ADGAS)). They aim to strengthen friendly relations between UAE and Japan, by transferring Japan's technologies and expertise in global warming and environmental pollution countermeasures to UAE University and UAE oil and gas industries.

The project for which the signing ceremony was held constitutes phase 2 of the project on acid gas treatment, which was implemented from FY2005 to FY2007. It will examine the feasibility of employing membrane contactors in the selective removal of acid gases (e.g. CO_2 or H_2S) from hydrocarbon gas at the laboratory level, applying the Das Island LNG plant as a model. The ultimate goal of the project is to reduce energy consumption by using the membrane separation technology to remove acid gases, in place of the conventional method that uses an amine solution.

In UAE, Abu Dhabi National Oil Company (ADNOC) is strongly promoting a Health, Safety and Environment (HSE) Management Program in the oil sector. Under this scheme, TAKREER, an oil refining company affiliated with ADNOC, and JCCP have jointly implemented projects for wastewater and acid gas treatment within the UAE oil industry, from FY2005 to FY2007, in the effort to enhance technologies for mitigating environmental burden in the Ruwais Refinery of TAKREER.

Based on the results of those projects, UAE University and JCCP decided to implement phase 2 of the project in FY2008, to promote the commercialization of the technology for the selective removal of acid gases from a hydrocarbon gas stream. Following the preparation of a new MOA, the two organizations held the signing ceremony at UAE University on May 19, and officially kicked off the FY2008 project.

Prior to the signing ceremony, Mr. Katsuo Yokoyama, Managing Director of JCCP, and other members of the Japanese delegation paid a courtesy call on Mr. Kazuo Sunaga, Minister at the Embassy of Japan in UAE, to report on the successful completion of the signing ceremony, and to introduce and ask for his cooperation with JCCP activities in UAE.

The signing ceremony was held in an auditorium on UAE University's Al-Maqam campus, with the attendance of Dr. Abdulla Al-Khanbashi, Acting Vice Chancellor and Provost, and other members of the University on the UAE University side, and members of a Japanese delegation headed by Mr. Yokoyama. Amid a friendly atmosphere, Dr. Al-Khanbashi and Mr. Yokoyama signed the MOA with hopes for the project's success, and exchanged commemorative gifts and words of congratulations.

Mr. Takahiko Yamaji, President of Nippon Oil Research Institute Co. Ltd., also attended the ceremony and articulated his firm commitment to the project. Nippon Oil Research Institute is a major participant in a number of JCCP technical cooperation projects, and will be the main implementing company of the new project. Mr. Matsushita, First Secretary at the Embassy of Japan in UAE, attended the ceremony on behalf of Ambassador Takuma Hatano, and relayed the Ambassador's hopes that the project will further promote friendship between UAE and Japan. On the UAE University side, the ceremony was honored by the attendance of H.E. Dr. Maitha Salem Al-Shamsi, Minister of State. Before being appointed to Minister of State in February 2008, Dr. Al-Shamsi was Assistant Provost for Research of UAE University, and a counterpart for JCCP technical cooperation projects in UAE (she still holds the position of Director of the center for externally funded research activities (eFORS)). At the signing ceremony, she conveyed words of appreciation for JCCP technical cooperation projects.

A dozen or so newspaper journalists and photographers witnessed the ceremony. Articles introducing the event, accompanied by photos, were carried in *Khaleej Times*, a major English-language newspaper in UAE, and on Internet websites.

JCCP looks forward to the successful completion of the project and to the smooth transfer of Japan's technologies in environmental and environment improvement measures, as significant steps in deepening friendly relations between UAE and Japan.

<by Nobuyuki Suyama, Technical Cooperation Dept.>

Exchange of commemorative gifts
Dr. Abdulla Al-Khanbashi, Acting Vice Chancellor and Provost of UAE University (right), and
Mr. Katsuo Yokoyama, Managing Director of JCCP

16 Tuesday, May 27, 2008 HOME Khaleej Times

Dh7m project to develop new gas purifying system

SCIENTISTS FROM UAE-JAPAN SIGN AGREEMENT

By a staff reporter

AL AIN — Scientists from the UAE and Japan would be developing a new acid gas removal process to ensure purification of natural gas before it could be used and liquefied.

An agreement was recently signed by UAE University Acting Vice-Chancellor Dr Abdulla Khanbashi and Managing Director of Japan Cooperation Centre, Petroleum (JCCP), Katsuo Yokoyama, to develop a new gas purifying system to replace the drawbacks of the conventional system in use.

The Dh7-million three-year project would also involve Abu Dhabi Oil Refining Company (TAKREER), ADGAS, Nippon Oil Research Institute (NORI) and Kobe University of Japan.

Hailing the Japanese contribution, Dr Khanbashi said the new research project would benefit the oil and gas industry in the UAE.

"Years of cooperation with JCCP signifies the resolve of both our countries to find new solutions that will keep our environment clean.

"The new project being undertaken by the University and JCCP will find a new mechanism to purify natural gas from harmful elements, making it safer for use," he said.

Katsuo Yokoyama said the conventional process of removing of acid gases using columns suffers from numerous shortcomings, including high-energy requirements, corrosion and forming.

He said the new process, to be developed under the agreement, would use membrane contactors to overcome these drawbacks.

H.E. Sheikh Nahayan Mabarak Al Nahayan

Katsuo Yokoyama and Dr Abdulla Khanbashi signing the agreement. — Photo by Asif Zaidi

Article on the signing ceremony
(Khaleej Times, *May 27, 2008 edition)*

Participation in "The 6th Middle East Refining and Petrochemicals Conference & Exhibition" in Bahrain

From May 26 to 28, 2008, "The 6th Middle East Refining and Petrochemicals Conference & Exhibition" (ME Petrotech 2008) was held at the Bahrain International Exhibition Centre, located in Manama, Bahrain, under the auspices of national oil companies of GCC oil-producing countries, including Saudi Arabian Oil Company (Saudi Aramco), Kuwait National Petroleum Company (KNPC) and Bahrain Petroleum Company (BAPCO), as well as western oil and petrochemical companies such as UOP, Shell, and Dow Chemical.

Held once every two years, ME Petrotech is the largest event in the Middle East, for oil and petrochemical business in the oil-producing countries of the region. JCCP participated in the exhibition part of the event for the third time, following its previous participation in the 4th (2003) and 5th (2006) exhibitions.

This year, JCCP was allotted a space at the end of the central aisle of the exhibition floor to set up its booth (18 m^2: 3 m x 6 m). Owing to this favorable location, the JCCP booth received more than 1,000 visitors, mainly from oil-related companies in GCC oil-producing countries, throughout the duration of the event, a number far exceeding JCCP's original expectation.

The booth introduced JCCP using 16 information panels, an introductory DVD on JCCP activities, publication materials including brochures, annual training programs, and newsletters.

A number of the panels used in the previous exhibition were revised this year. A new panel was added to two existing panels that provided an overview of JCCP activities, and the comprehensive view of JCCP activities was designed so that two panels connect to form a single image, to facilitate understanding. Where two panels previously introduced JCCP training courses and recent achievements, two new panels were added to show step-by-step how regular courses and tailor-made courses are implemented, in an easy to understand design using photographs. In the area of technical cooperation projects, a panel provided an overview, another introduced the Joint GCC-Japan Environment Symposium, and seven panels featured representative technical cooperation projects, including the joint international research project with King Fahd University of Petroleum and Minerals (KFUPM) and the joint project on high-severity fluid catalytic cracking (HS-FCC) technology (demonstration study) conducted with Saudi Aramco.

The entrance to the ME Petrotech venue

At the JCCP booth

Using information panels to explain technical cooperation projects

JCCP graduates focusing their attention on an introductory DVD on JCCP activities

In addition to key figures from major oil-producing countries and top executives of JCCP counterparts such as Saudi Aramco, a large number of people who have heard about JCCP training courses and technical cooperation projects visited the JCCP booth. JCCP members received the strong impression that JCCP activities are becoming more widely recognized in the Middle East region. Nevertheless, few people had a full understanding of both training courses and technical cooperation projects, and many inquired as to why JCCP is providing support to oil-producing countries. Therefore, the exhibition provided the perfect opportunity for JCCP members to personally explain JCCP's overall activities and its mission in detail to each visitor.

The JCCP booth also received visits by many JCCP graduates from JCCP counterparts such as Saudi Aramco, Abu Dhabi Oil Refining Company (Takreer), and BAPCO. Many of them planned to recommend that their colleagues and subordinates attend a JCCP regular course, since they themselves have greatly benefited from participating in JCCP training courses. This indicated a strong need for human resource development in the Middle East. In addition to JCCP graduates, many engineers came to the JCCP booth, inquiring detailed information on technical cooperation projects. Their detailed questions were also indicative of the high level of interest in technical cooperation projects in oil-producing countries.

JCCP values the opinions and requests that were obtained through direct communications with visitors to the JCCP booth, and will use the feedback to further enhance activities in response to their expectations. Events such as this ME Petrotech, which offer opportunities for JCCP to directly interact with parties in the oil industries in Middle East oil-producing countries, are an ideal forum for publicity activities. JCCP will continue to seize such opportunities to introduce JCCP activities and promote greater understanding of its mission.

<by Kaoruko Nakamura, Administration Dept.>

Responding to questions from visitors

JCCP graduates (Saudi Aramco engineers in front of the JCCP booth)

Establishment of New JPI Award for Technical Developments in Oil-Producing Countries

Japan Petroleum Institute (JPI) established a new award for technical developments in oil-producing countries this year, in commemoration of the 50th anniversary of its founding. The award is to be presented to individuals or organizations in both oil-producing countries and Japan, who have together made a significant achievement in the research and development or improvement of oil-related technologies in oil-producing countries, or have contributed to promoting technical exchanges. The commendation is expected to deepen mutual understanding between oil-producing countries and Japan, increase technical exchanges in the oil sector, and thereby promote future international exchanges of technologies. It is also expected to contribute to the development of infrastructures in the downstream sector in oil-producing countries, and ultimately play a significant role in securing oil resources and stable supplies of energy. For these reasons, JCCP is fully supporting the new award.

An overview of the award is provided below, as a prime example of strong collaboration between JCCP and organizations to which JCCP is directing its cooperation efforts in recent years.

1. Background to Establishment of the Award

In February 2007, JCCP arranged a mission for experts from universities and industries in Japan to tour the sites where technical cooperation projects are being implemented in Middle East oil-producing countries. A university professor who participated in the mission proposed the use of an award hosted by JPI, an authority in its field, as a means of facilitating technical transfers to Middle East oil-producing countries. In response to this proposal, JCCP held a series of discussions with the Ministry of Economy, Trade and Industry and JPI, as well as consulted in detail with the professor who proposed the idea, and the award was finally brought to fruition this fiscal year.

JPI itself is actively involved in technical cooperation projects with Middle East oil-producing countries. In fact, it has been implementing catalyst seminars with King Fahd University of Petroleum and Minerals (KFUPM) in Saudi Arabia, since 1991. JPI was considered the ideal host of the new award, because it possesses abundant experience and expertise in bestowing awards, such as the JPI Award and the Noguchi Memorial Award. It was also fortunate that JPI had already been planning to create a special commemorative award to be presented as part of its 50th anniversary celebrations, and had set up a 50th Anniversary Commemorative Awards Subcommittee for that purpose.

2. Composition of the Award

The award will be composed of the Japan Petroleum Institute Award for Invaluable International Cooperation and the Japan Petroleum Institute Award for International Cooperation on Technology. The Japan Petroleum Institute Award for Invaluable International Cooperation will be presented to individuals or organizations in both oil-producing countries and Japan, who have together made a significant achievement in transferring oil-related technologies to oil-producing countries, or in developing human resources in oil-producing countries by means of technical exchanges. The Japan Petroleum Institute Award for International Cooperation on Technology will be presented to individuals or organizations in both oil-producing countries and Japan, who have together made a significant achievement in the research and development or improvement of oil-related technologies in oil-producing countries. In

other words, the former focuses on "people" who have contributed to technical exchanges between Japan and oil-producing countries, and the latter, on "technologies."

3. Presentation of the Japan Petroleum Institute Award for Invaluable International Cooperation

The JPI 50th anniversary ceremony was held on May 15, 2008. Mr. Toshikazu Kobayashi, Vice President of Nippon Oil Corporation and newly appointed president of JPI, presented the Japan Petroleum Institute Award for Invaluable International Cooperation and commemorative gift to Dr. Sahel N. Abdul-Jauwad, Vice Rector for Applied Research at KFUPM, who attended the ceremony on behalf of H.E. Dr. Khaled S. Al-Sultan, Rector of KFUPM, and Dr. Tatsuaki Yashima, Professor at Nihon University Advanced Research Institute for Science and Technology. H.E. Dr. Khaled S. Al-Sultan was recognized for his leading role in promoting technical exchanges with Japan and in developing human resources in Saudi Arabia through the technical exchanges. Dr. Yashima was recognized for his many years of effort in promoting international exchanges between Japan and Saudi Arabia/Kuwait, as chairman of the JPI Overseas Cooperation Subcommittee.

Upon receiving the award, Dr. Abdul-Jauwad

Mr. Toshikazu Kobayashi, President of JPI, presenting the Japan Petroleum Institute Award for Invaluable International Cooperation to Dr. Sahel N. Abdul-Jauwad, Vice Rector of KFUPM

(Front row, from right) Dr. Sahel N. Abdul-Jauwad, Vice Rector of KFUPM, and Dr. Tatsuaki Yashima, Professor at Nihon University Advanced Research Institute for Science and Technology
(Back row, from left) H.E. Mr. Faisal H. Trad, Ambassador of Kingdom of Saudi Arabia to Japan, and Mr. Toshikazu Kobayashi, President of JPI

expressed his appreciation for the award, stating that the prestigious award holds great significance as a strong incentive to continue contributing to building a fertile relationship with Japan. Dr. Yashima also thanked JPI for the award, and affirmed that it would certainly be instrumental in building constructive relations between the GCC countries and Japan.

4. Strengthening Cooperation with Oil-Producing Countries

As Dr. Abduljauwad stated, the Japan Petroleum Institute Award for Invaluable International Cooperation was interpreted as a strong incentive for oil-producing countries to strengthen cooperative relations with Japan. The award is therefore expected to strengthen collaboration not only between oil-producing countries and JCCP, but also between those countries and other relevant organizations in the oil industry.

Unfortunately, there were no recipients of the Japan Petroleum Institute Award for International Cooperation on Technology this time around. Continued efforts need to be made to establish a record of outstanding performance.

(by Toyonori Uemura, Administration Dept.)

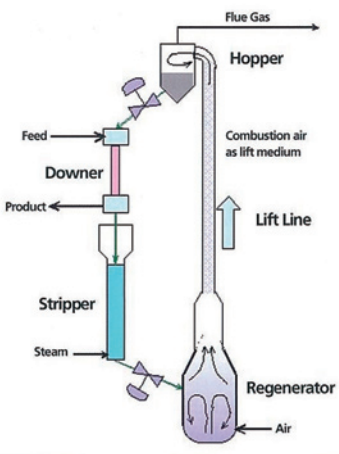
Article on HS-FCC Process
(High-Severity Fluid Catalytic Cracking)
in Saudi Aramco Journal of Technology

JCCP and King Fahd University of Petroleum and Minerals (KFUPM) in Saudi Arabia have carried out a number of years developing the HS-FCC (High-Severity Fluid Catalytic Cracking) technology, with the cooperation of Nippon Oil Corporation and Saudi Aramco. Studies of the technology first began with a 0.1 b/d pilot plant, and thereafter moved on to test operations of a 30 b/d demonstration unit. Following a series of feasibility studies on increasing the scale of the unit, significant advancements have been made toward the construction of a commercial-scale unit. Today, a new project is underway, for the construction of a 3,000 b/d semi-commercial unit.

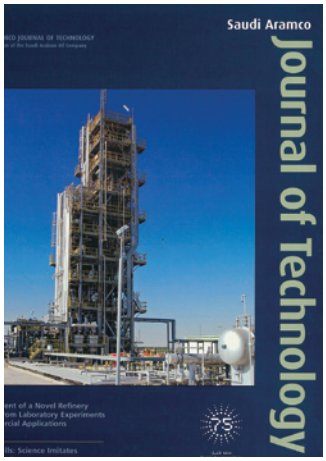
HS-FCC is an innovative process that aims to maximize the production of propylene and other petrochemical feedstock, by using a down-flow reactor, instead of the conventional up-flow system. It is attracting widespread attention as a new solution to the needs of the times.

The new process was introduced in a leading article in the Spring 2008 issue of *Saudi Aramco Journal of Technology*. Titled "Development of a New Oil Process: From Experiments to Commercialization," the article describes the characteristics of the HS-FCC process, results of tests conducted using the 0.1 b/d pilot plant, results of test operations of the 30 b/d demonstration unit carried out at Saudi Aramco's Ras Tanura Refinery, analyses of those results, and future plans for its commercialization. The cover of the journal features a photo of the 30 b/d demonstration unit constructed at the Ras Tanura Refinery. On the following page is an article on receiving the Noguchi Memorial Award. Last year, the award was presented to JCCP, KFUPM, Nippon Oil Corporation, and Saudi Aramco by the Japan Petroleum Institute (JPI), in recognition of their efforts in the HS-FCC development project. The article is accompanied by a photo of Mr. Khalid Al-Buainain, Senior Vice President of Saudi Aramco, and Saudi Aramco engineers who have participated in the project. The journal's special focus on the HS-FCC process is a clear indication of the extreme importance that Saudi Aramco attaches to the development of the technology.

<*by Minoru Horike, Technical Cooperation Dept.*>



The HS-FCC Process



Cover of Saudi Aramco Journal of Technology
The photo is of the 30 b/d demonstration unit

The Noguchi Award was presented by the Japanese Petroleum Institute for the groundbreaking development of the innovative High-Severity Fluid Catalytic Cracking (HS-FCC) process technology to the research consortium of Saudi Aramco, the Japanese Cooperation Center Petroleum, Nippon Oil Company and King Fahd University of Petroleum and Minerals (KFUPM). This was the first time the award has gone to any organization outside of Japan.

Article on receiving the JPI Noguchi Memorial Award

Implementation Report on Petroleum Marketing Regular Course (TR-2-08)

1. Objective

From April 3 to 22, 2008, JCCP implemented a 14-day JCCP-initiative regular course on "Petroleum Marketing" (TR-2-08). Intended for management-level employees, the course was aimed at providing wide-ranging knowledge of Japan's intense petroleum marketing situation, which may help participants improve their oil business and operations in their respective countries. Specifically, the course covered topics in the stable supplies of crude oil and oil products, effective distribution systems of products, the competitive oil market, and marketing activities at service stations. The course also included management programs.

At JCCP

2. Participants

Seventeen applicants from 13 countries were selected from among 26 applications received for the 12-member course. The selected participants were mostly relatively young mid-level managers, of an average age of 37.5 years. In terms of region, 7 were from the Middle East, another 7 from Asia, 2 from Africa, and 1 from South America. Amid an open and friendly atmosphere created by their youthful energy, the participants applied themselves to the course programs by mutually helping each other.

Country	Organization	Age
Iran	NIOPDC	47, 48
UAE	ADNOC	30, 33
Kuwait	KNPC	36
Yemen	YPC, YOGC	27, 28
Nigeria	NNPC	41
Libya	NOC	43
Mexico	PEMEX	38
Indonesia	MIGAS	24, 30
Vietnam	PETROVIETNAM	47
Pakistan	APL	29
Thailand	BPPC	40
China	CNPC	42
Myanmar	MPPE	54
13 countries		17 participants

3. Program Structure

(1) Lectures at JCCP

1) Japan's Oil Industry

This lecture introduced Japan's oil industry from three perspectives: the significance of stable oil supplies to Japan, the characteristics of Japan's oil industry, and the fierce competition in gasoline marketing. The participants gained an understanding of how important it is for Japan to secure stable supplies of oil, and seemed to take the issues of efficiency and corporate rationalization as issues they themselves would need to address in the near future.

2) Global Energy Situation

Global energy trends were examined in reference

to global-scale environmental issues related to oil, liquefied natural gas (LNG), nuclear power, coal, and water and wind energies, using extensive data. As global energy issues are common to all countries, the participants listened to the lecture with apparently strong interest.

3) Management by Rational Thinking Process

The lecturer's outstanding presentation skills and extremely helpful study materials engaged the participants in a two-day program on management skills training, which focused on analyzing and solving problems based on a Rational Thinking Process (RTP). The program included small-group discussions and presentations, which provided participants an opportunity to exchange opinions and deepen mutual understanding with each other, and was also meaningful in this respect.

Group discussion at JCCP

4) Marketing of New Automotive Fuels

The present state of R&D advancements and future commercialization of new automotive fuels was analyzed and presented in reference to environmental, supply, and cost issues, in an easy to understand manner. The participants showed particularly strong interest in new bio-fuels.

5) The Asian Oil Market

This lecture was organized in response to participants' requests for a professional lecture on global issues. It covered recent trends in the Asian oil market and crude oil prices, from the professional perspectives of supply-demand trends, the futures market, and crude oil price formulas.

6) History of Japanese-style Management

The background to Japan's economic growth was analyzed and lectured in an easy to understand manner, from the perspective of human resource management. The lecture provided a comprehensive view of Japanese-style management, by focusing on the Japanese mentality, the teamwork spirit shared by all Japanese, and the lifetime employment and seniority systems, which are two representative personnel management systems unique to Japan. The subject matter was explained in reference to Japan's culture and history, and was highly appreciated by the participants.

(2) Onsite Training

1) Cosmo Oil Co., Ltd., Head Office

From the standpoint as the head office of an oil company, staff members of the office provided detailed lectures on oil marketing activities, including dealer countermeasures, determination of gasoline prices, strategies and profit management of service stations, and credit card policies. The staff members also outlined the crude oil procurement and tanker transportation systems in Japan. The highly practical lectures elicited many responses from the participants.

2) Nippon Oil Refining Co., Ltd., Mizushima Refinery

Following a presentation on the overview of the refinery and its oil refining facilities, the participants received lectures on LNG acquisition, marketing, storage, and shipment activities from a member of

At Nippon Oil Refining's Mizushima Refinery

Mizushima LNG Co., Ltd., a company which has begun marketing LNG.

The participants also toured the huge LNG storage facility constructed onsite at the refinery, and the No. 3 power generation unit at the Mizushima Thermal Power Station of Chugoku Electric Power Company, which has recently converted its fuel to LNG. The refinery offered a commanding view of the Mizushima industrial complex, Japan's largest complex, which seemed to duly impress all participants.

3) Cosmo Oil Co., Ltd., Hiroshima Branch Office

As a branch office at the frontline of marketing activities, members of the Hiroshima Office provided training on the multifaceted aspects of gasoline marketing, including branch office functions, service station (SS) marketing strategies, SS styles, and the order-receiving system. After the lectures, the participants visited one of the branch office's newest self-service SSs and obtained hands-on experience in inventory control, ordering system, and feeding gasoline. The self-service SS and the sales of non-fuel products at SSs appeared to be new concepts to many of the participants.

Onsite training at a service station

4) Uyeno Kosan Ltd., Kawasaki Office

Uyeno Kosan is a company with a family-owned management that goes back 130 years. It has made many significant achievements during its long history in the oil product transport sector. The participants first received lectures on the company's history and management, transport of oil products, and safety activities, then visited an onsite training center for tank truck drivers, to observe demonstrations of actual safety operations.

A driver demonstrating physical finger-pointing confirmation at Uyeno Kosan

5) San-ai Oil Co., Ltd., Haneda Office

San-ai Oil is the sole company possessing jet fuel storage and shipment facilities at Haneda International Airport. After learning about the jet fuel refueling system, the participants toured the integrated control room, the offloading facility from small tankers, and fuel storage and shipment facilities. They also had the opportunity to step inside a high-security apron of the airport and witness thoroughly standardized finger-pointing confirmation procedures for safe refueling operations.

In the control room of San-ai Oil's Haneda Office

4. Summary

The participants of the marketing course all varied in the types of oil they handle in their daily work, such as crude oil, oil products, petrochemicals, and petroleum gas, as well as in the departments in which they work, which included head offices, refineries, and branch offices. Therefore, the

evaluation forms they filled out at the end of the course reflected their diverse interests and opinions regarding the course content.

All participants have naturally come to the course prepared to apply their own experience and standard of values. After attending the course, we believe they were able to gain a better understanding of the differences between their respective countries and Japan, and become a better judge of what is really beneficial and important to their countries, to their companies, and to themselves, by comparing those differences.

Participants from 13 different countries spent 18 days in Japan studying together and interacting with each other. They visited many Japanese private companies and met with many Japanese people. It was undoubtedly a precious experience for all of the participants. It was also rewarding for us as course organizers to know that the participants not only acquired specialized knowledge and technologies from the course, but also reconfirmed the importance of personal exchanges.

Finally, we would like to thank all external lecturers and everyone at companies where onsite training programs were held, for their cooperation in implementing a highly fruitful and meaningful course.

<by Yasuo Tabei, Training Dept.>

Participant's Voice

Upgrading Processes of Heavy Oil

(TR-3-08：April 3 – April 22, 2008)

Ms. Imoba Onitsha (NNPC / Nigeria)

On behalf of the TR-3-08 participants, I wish to express our deepest appreciation to the entire JCCP staff, and in particular, to Mr. Kojima, Executive Director of JCCP, Mr. Kubota, the coordinator of the course, and his assistant, Mr. Kamijyo, for their love, support and guidance throughout our stay in Japan.

The course on "Upgrading Processes of Heavy Oil" came at a vital time, when crude oil is becoming heavier due to increased sulphur levels. It was also significant in that it focused on measures for minimizing emissions of NOx, SOx, and other pollutants that are produced during heavy oil processing, as a means of protecting our lives and conserving the environment.

We each came to the course expecting to learn much from Japan, as the country has begun producing sulphur-free fuels in 2005 by applying heavy oil upgrading processes, and has achieved, among other things, clean air. Indeed, we acquired a wealth of knowledge and expertise through presentations and simulations, thanks to the hardworking efforts of the JCCP staff.

The course was one of the first regular courses of the 2008 fiscal year, and was held at a time when the weather was favorable for exploring the beauty of nature in Japan. We were lucky to experience little cold and rain, and extremely fortunate to see the sakura cherry blossoms.

I especially enjoyed our field trips. We traveled to six cities in Japan, via Shinkansen and other JR trains.

At the Kiyomizudera Temple in Kyoto

From Tokyo, we traveled to Iwakuni, Kokura, Hiroshima, Kyoto, Yokohama, and Satte. We visited leading refineries and a catalyst maker in Kokura; the Cosmo R&D Center in Satte; spent an enjoyable moment at the bay side amusement park in Yokohama; visited temples and the famous Kintai Bridge in Iwakuni; and attended a tea ceremony and a Japanese traditional dance show featuring beautiful women in kimono attire at the Gion Corner Theater, and visited the Golden Pavilion and a handcraft center in Kyoto. However, Hiroshima was by far the most beautiful, attractive, historic and educative place I have ever visited. Despite the war, I was surprised to see that the city has been entirely rebuilt into a modern city. The Atomic Bomb Dome still remains, however, as a symbol of the strength and courage of the Japanese people.

As the saying goes, "good times don't last forever," and it is now time for us to say goodbye. Although words alone can hardly express our heartfelt gratitude, I would like to say thank you very much from the bottom of my heart, and hope to see you again, perhaps next in Nigeria. *Arigato Gozaimashita*.

Human Resource Management (HRM)

(TR-07-08: May 27 – June 13, 2008)

Ms. Mahsa Samavati (NIORDC / Iran)

J..... *Justice*
A..... *Activity*
P..... *Punctuality*
A..... *Administration*
N..... *Nature*

The above words describe what I experienced in Japan with all my senses.

The Japanese are great artists. I say this, because I believe Human Resource Management is not just a science, but also an art. Special trips from Tokyo to Kyoto, Hiroshima, Sakaide, and Yokohama added color and texture to the course, to create a precious experience. We gained a comprehensive view of Japanese-style management through visits to transportation and engineering companies and refineries, and understood that it derives from the Japanese people's sincere attitude toward work. I call this "faithfulness." It is the spirit of being faithful to rules, people, time, and to oneself.

I will forever cherish my memories of the course, not to mention the Japanese expressions that we used frequently, such as "Hikatta?" every time we posed to take a group photo!

This course provided a wonderful learning experience. However, I would like to make a suggestion as a senior worker in the IT field. That is, perhaps JCCP could offer technical management courses such as IT Management, Project Management and Productivity Management in the near future, as there is an increasing trend in the IT field to offer diverse management courses for different skill levels.

Finally, I wish to extend my special thanks to Mr. Hoshino, Mr. Tabei, and Mr. Kojima, Executive Director of JCCP. My appreciation goes beyond words. May you always be happy and healthy. *Domo arigato gozaimashita*.

At the Sankeien Garden in Yokohama

JCCP Regular Courses Completed in April – June 2008

TR-1-08 Online Analyzer
Period: April 3 – April 18, 2008
No. of participants: 13
Country of participants: China, Indonesia, Iran, Libya, Nigeria, Pakistan, Qatar, Saudi Arabia, Vietnam, Yemen

TR-2-08 Petroleum Marketing
Period: April 3 – April 22, 2008
No. of participants: 17
Country of participants: China, Indonesia, Iran, Kuwait, Libya, Mexico, Myanmar, Nigeria, Pakistan, Thailand, UAE, Vietnam, Yemen

TR-3-08 Upgrading Processes of Heavy Oil
Period: April 3 – April 22, 2008
No. of participants: 14
Country of participants: Brazil, Colombia, Indonesia, Iran, Libya, Myanmar, Nigeria, Pakistan, Vietnam, Yemen

TR-4-08 Essential Petroleum Refining for Process Engineers
Period: May 13 – May 30, 2008
No. of participants: 13
Country of participants: Bahrain, Colombia, Indonesia, Iran, Malaysia, Mexico, Qatar, Saudi Arabia, Vietnam, Yemen

TR-5-08 Diagnostic Techniques and Maintenance for Rotary Machinery
Period: May 13 – May 30, 2008
No. of participants: 15
Country of participants: Colombia, Indonesia, Iran, Kuwait, Malaysia, Mexico, Oman, Qatar, Saudi Arabia, Vietnam, Yemen

TR-6-08 DCS Fundamentals and Applications
Period: May 27 – June 13, 2008
No. of participants: 14
Country of participants: Indonesia, Iran, Mexico, Nigeria, Pakistan, Russia, Saudi Arabia, UAE, Vietnam, Yemen

TR-7-08 Human Resource Management (HRM)
Period: May 27 – June 13, 2008
No. of participants: 19
Country of participants: Colombia, Indonesia, Iran, Kazakhstan, Malaysia, Mexico, Oman, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Thailand, UAE, Vietnam

TR-8-08 Refinery Management
Period: June 3 – June 17, 2008
No. of participants: 16
Country of participants: Colombia, Indonesia, Iran, Kuwait, Libya, Malaysia, Myanmar, Nigeria, Oman, Qatar, Saudi Arabia, Thailand

Total: 121 participants

Overview of the JCCP Country-Specific Action Plan

Working Group for Country-Specific Action Plan

JCCP established a special Working Group in FY2007, and through the group, formulated a Country-Specific Action Plan for major counterpart oil-producing countries in the Middle East during the first year of its establishment. Through this initiative, JCCP aims to predict changes in the oil downstream sector in each of those countries based on their socio-economic and oil production situations, and to accurately assess specific considerations that would be necessary for implementing future JCCP activities. The action plan is a compilation of the results of investigations in each country, but this article will identify and examine issues that are common to all Middle East oil-producing countries.

1. Background

Since its founding in 1981, JCCP has engaged in a variety of activities with the objective of contributing to securing a stable supply of oil. However, during the 27 years since its founding, major changes have taken place in the environment surrounding JCCP. To accurately assess the relevance of its activities in light of those changes, JCCP organized a Review Panel in FY2005, and has set out to restructure its activities based on the panel's proposals.

One of the proposals of the Review Panel was to implement activities that more closely correspond to specific needs in each counterpart country. The panel recommended the establishment of the Working Group for Country-Specific Action Plan, and called for a close assessment of each country's needs in conjunction with the Downstream Survey in Oil-Producing Countries, which is one of JCCP's conventional survey activities. In reference to those specific needs, the panel proposed the compilation of an action plan containing considerations that should be given to each country when implementing future JCCP activities. As proposed, the Working Group compiled the Action Plan for Middle East Oil-Producing Countries, as introduced below.

2. Study Approach

Middle East oil-producing countries depend almost entirely on oil and natural gas for their primary energy supplies. The oil downstream sector[1] is largely responsible for responding to the social changes that occur within each country, such as economic development, population growth, and increases in energy consumption. Therefore, needs in the oil downstream sector are closely linked with social changes occurring in each Middle East oil-producing country, and to assess those needs, it is essential to gain an accurate understanding of each country's social background.

Based on the survey of social changes in Middle East oil-producing countries, this study aimed to identify needs for JCCP cooperation in each country, by examining and comprehensively analyzing the oil refining and technical issues they are facing. (Fig. 1)

1 The oil downstream sector means all activities from crude oil refining to the delivery of oil products to consumers, but mainly refers to the oil refining, physical distribution, and marketing aspects of oil products.

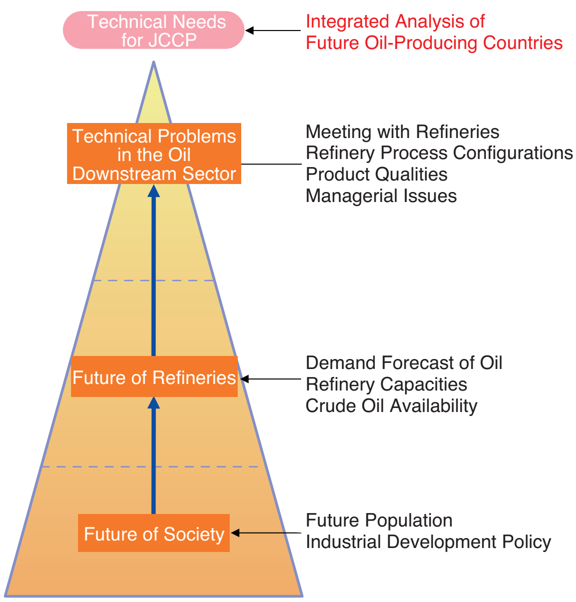


Fig. 1 Approach to Technical Needs of Oil-Producing Countries

3. Summary of Study Results

(1) Social Background

Among the social changes that are occurring in Middle East oil-producing countries, the recent study focused on rapid population growth as the greatest factor impacting the oil downstream sector. Fig. 2 shows demographic trends in Middle East oil-producing countries and Japan, from 1950 to 2050. In the wake of the two major oil crises that have occurred in the 1970s, Middle East oil-producing countries have enjoyed large growth in revenues from oil exports, and took the opportunity to improve social welfare. This led to rapid population increases in those countries.

In 2005, the population in Japan and the Middle East oil-producing countries was basically the same, around 130 million, respectively. By 2050, however, the population in Middle East oil-producing countries is expected to increase almost two-fold, to 250 million.

This year marks the 35th year of the first oil crisis. The population born after the oil crisis has reached their thirties. They have gotten married, started their own families, and are now bringing up the next generation. The increase in population can be expected to still continue for some time.

(2) Energy Consumption

Rapid population growth naturally leads to an increase in energy consumption. In 2006, oil consumption in Middle East oil-producing countries totaled about 6 million b/d, already surpassing that in Japan. It is important to realize that those countries are major oil-consuming countries, while at the same time being oil-producing countries. Fig. 3 shows changes in crude oil production, oil consumption, and the rates of internal oil consumption in Middle

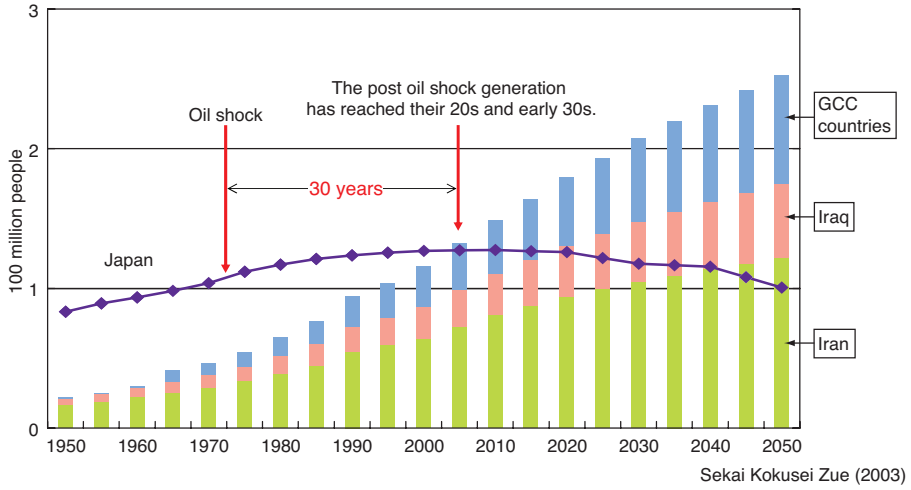


Fig. 2 Population Growth in Middle East Oil-Producing Countries

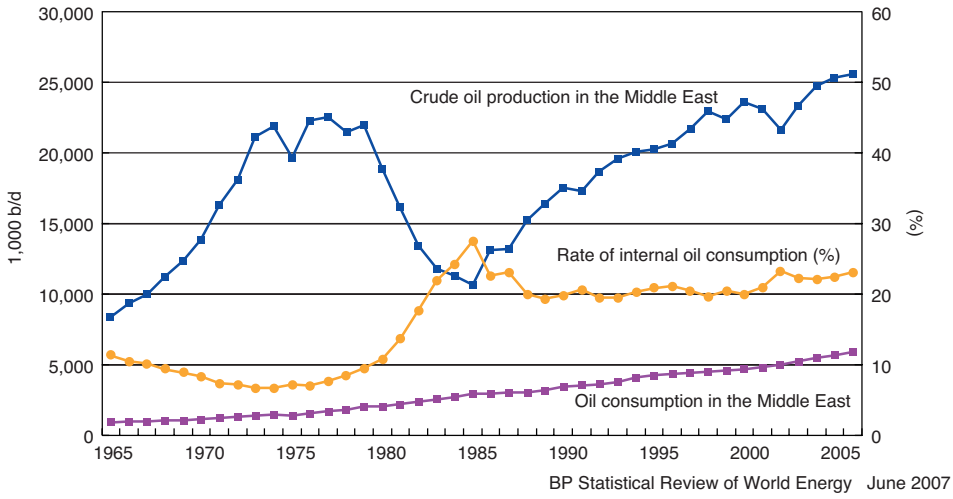


Fig. 3 Oil Consumption of Middle East Oil-Producing Countries

East oil-producing countries. Oil consumption is seen increasing steadily each year, accompanying increases in population and improved living standards. Crude oil consumption rate, which had long been hovering around the 20% level, began to gradually increase from 2000, and has reached 24% in 2006. A continuation of this trend is expected to eventually impose constraints on exports to oil-consuming countries.

(3) Consumption of Oil Products

Among all oil products, Middle East oil-producing countries mainly consume automotive fuels (gasoline and diesel fuel) and fuel oil (heavy oil) that are needed for power generation and water desalination. Energies for use by automobiles, electric air conditioners, and drinking water supply systems have direct bearing on people's lives, and can be expected to further increase, along with continued population growth.

(4) Issues Facing Refineries

To respond to rapid increases in demand for oil products, large, new refineries need to be constructed. Middle East oil-producing countries have plans to construct refineries with capacities of about 3 million b/d, over the 10 years from 2005 to 2015. These refineries are expected to include advanced process units, such as a heavy oil cracking unit and diesel fuel deep desulfurization unit, as they are needed to satisfy new environmental standards.

The oil downstream sector in Middle East oil-producing countries must therefore enhance their technologies to a higher level than before. They must develop their capacities to plan and design refineries, manage construction projects, operate advanced processes, and support processing and catalyst technologies, all in a short 10-year period.

(5)Future Direction of Middle East Oil-Producing Countries

The Action Plan also takes a look into the near future, and discusses the direction in which the refineries of Middle East oil-producing countries should hereafter proceed. Fig. 4 shows the value structure of world class refineries.

Middle East oil-producing countries hope to create as much added value as possible, and sell oil at the highest possible values. Behind this intention lies a sense of crisis stemming from the fact that oil resources are limited and are daily dwindling toward depletion, and the desire to create employment opportunities for the young population, by expanding the scope of the oil industry and developing secondary and tertiary processing industries.

The key to increasing value lies in cracking heavy oil. Heavy oil is cheaper than crude oil, but has several disadvantages. Even so, as a hydrocarbon, heavy oil is apt to have a lot of potential to be used for advanced applications. Conventionally, heavy oil has been burned in a boiler, converted to heat, and used as energy for generating power and desalinating water. In the future, however, heavy oil must be cracked, so that it may be used as blending stock for producing gasoline and diesel fuel. By cracking heavy oil to produce gasoline blending stock, heavy naphtha, which have been previously used as a gasoline blending stock, can instead be applied to the petrochemical value chain. Consequently, the value of hydrocarbons would increase.

Additionally, instead of depending on heavy oil, other forms of energies could be used for power generation and water desalination. The introduction of new and alternative energies such as solar energy and fuel cells, as well as the development of new energy-saving technologies, can be expected to eventually replace oil with non-oil forms of energy.

In an interview, an executive officer of a national oil company in a Middle East oil-producing country called this type of comprehensive refinery that aims to increase the value of oil, as a "world class refinery." Another executive spoke about energy systems "beyond oil," while still others spoke about the need for technical cooperation in introducing solar energy and other forms of energy.

The study helped clarify the increasing awareness in Middle East oil-producing countries, of converting oil to gasoline, kerosene, and diesel oil as much as possible, instead of simply burning it to produce heat, and to use those oil products as transportation fuel inside and outside the respective countries, and as feedstock for higher-value petrochemical products.

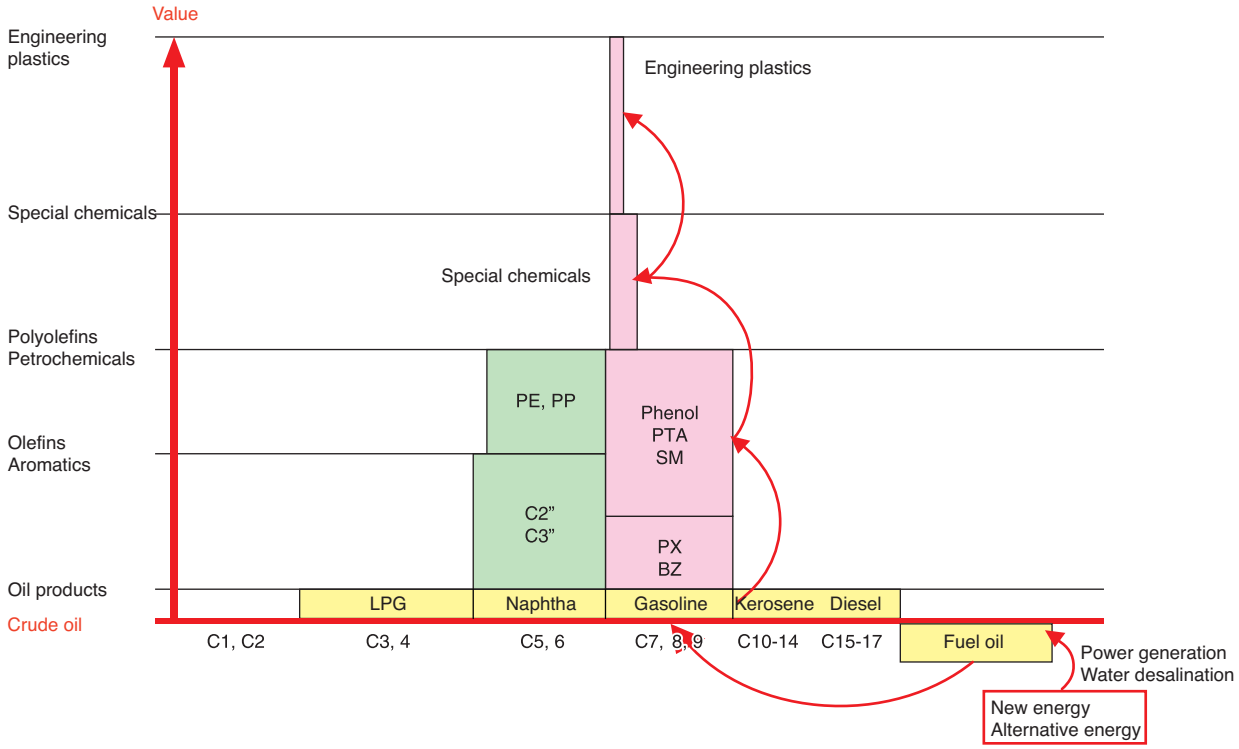


Fig. 4 Value Structure of a World Class Refinery

4. Needs for JCCP Cooperation

Based on the above results, the needs in Middle East oil-producing countries for JCCP cooperation can be divided into the following three categories.

1) Upgrading refineries

Providing technical support for upgrading refineries, such as through the transfer of heavy oil cracking technologies, petrochemical integration, and quality improvement

2) Strengthening the management foundation

Technical support for strengthening the management foundation in the oil downstream sector, by transferring technologies for planning and designing advanced refineries, managing projects, ensuring safe and stable operations, and increasing cost competitiveness when exporting petrochemical products to the global market

3) Human resource development

Support for the development of human resources, and particularly of young leaders, so that each country can independently accomplish the above tasks

5. Significance of the Country-Specific Action Plan

The Action Plan provides a sound basis for conducting a detailed assessment of needs in Middle East oil-producing countries.

JCCP will support refineries in Middle East oil-producing countries, in their effort to become world class refineries, in the form of training programs and technical cooperation projects. By helping these countries control their internal oil consumption, achieve advanced utilization of oil, and maintain steady oil exports, JCCP aims to contribute to securing stable supplies of oil.

From FY2008, JCCP has renewed its efforts based on the Action Plan. It is strengthening dialogues with Middle East oil-producing countries, and is working to implement activities that more specifically and effectively respond to the needs of each country.

In the future, the Action Plan should probe deeper into situations in Middle East oil-producing countries, to increase their accuracy, as well as to better address environmental changes in each country. It should also be formulated, in sequence, for oil-producing countries in regions other than the Middle East. Toward these ends, the Working Group will continue with its investigations this fiscal year.

“The 26th JCCP International Symposium”

<Speech Summaries and Closing Address>

“The 26th JCCP International Symposium” was held on February 6 and 7, 2008 (see JCCP NEWS No. 100, pp. 3-7 for a general report of the event).

Summaries of the keynote speech by Mr. Akira Idemitsu, then-President of JCCP, the guest speech by Mr. Waleed H. Albedaiwi, General Manager, Saudi Petroleum Ltd., and the closing address by Mr. Mikio Kojima, then-Executive Director of JCCP, are provided below.

Mr. Idemitsu gave a strong message that “we have an important responsibility to the next generation, to reconsider the role of the oil downstream sector in ensuring a steady and stable supply of oil for many years to come.” Mr. Albedaiwi likened the relationship between oil-producing and oil-consuming countries to “the two sides of the same coin,” and emphasized that “just as it is impossible to split the obverse side of a coin from the reverse, there is no way to decouple oil-producing countries from oil-consuming countries.” Mr. Kojima shared his conviction that “oil downstream sectors in both oil-producing and oil-consuming countries stand on common ground, and are in a position to serve as a bridge of cooperation between the two.”

<Keynote Speech>

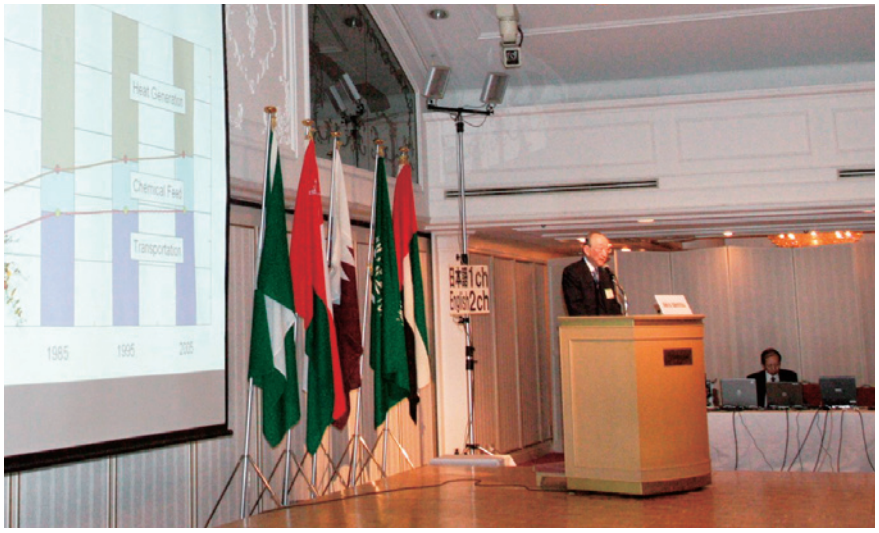
“The Role of the Oil Downstream Sector from the Perspective of Stable Energy Supply”

Akira Idemitsu
Then-President, Japan Cooperation Center, Petroleum

1. The Role of the Oil Downstream Sector

When considering the issue of stable oil supply, we can see that the role of the oil downstream sector is becoming ever more important. From the perspective of crude oil supplies alone, oil-producing and oil-consuming countries can only acknowledge differences in their respective positions within the oil industry. However, the oil downstream sector of both oil-producing and oil-consuming countries bear a common responsibility of refining crude oil and supplying oil products to consumers. From the perspective of oil product supplies, therefore, we

find that there are many issues to be solved through mutual cooperation.



Mr. Akira Idemitsu delivering his keynote speech

The oil downstream sector manufactures oil products and petrochemical products from crude oil. Depending on how we design the downstream sector, we can continue producing high-value oil products. However, if we make a wrong turn, we may end up consuming crude oil merely as a low-value product. The oil downstream sector therefore has an important responsibility in proposing how best we should utilize oil.

Oil is a precious resource that must not be depleted by our generation. We must bear in mind that we have an important responsibility to following generations, to reconsider the role of the oil downstream sector.

2. The Current State and Issues of the Oil Downstream Sector

Accompanying the rapid increase in demand for oil products since 2000, oil refining capacity has been fast shrinking on a global basis. In fact, demand for oil has already exceeded refining capacities in Asian countries.

Demand for oil is also growing at a significant rate in the Middle East, and oil-producing countries in the region are gradually becoming large oil-consuming countries, at the same time.

We have experienced two oil crises during the 1970s. This was a time when there were still sufficient reserves of refining capacity, and a stable oil supply meant a stable supply of crude oil. Since 2000, however, global refining capacity has been shrinking, and securing sufficient refining capacity, in addition to securing a stable supply of crude oil, is becoming ever more important, in ensuring a stable supply of oil products.

We who work in the oil downstream sector must expand refining capacity, but unfortunately, refining margins are still way too small from which to construct grassroots refineries* and recover investment costs. As things stand, we cannot expect to recover investment costs by simply continuing to build conventional refineries, nor are we able to adequately respond to social demand for stable supplies of oil products.

To secure a stable oil supply, we must increase the value of oil products and make effective use of oil. Doing so could also help boost profitability. We must create future visions and launch a new era of the oil downstream sector.

3. The Oil Downstream Sector in the New Era

Petroleum is different from other energy sources in many ways. Only petroleum can satisfy the huge energy demand in the automotive, aviation, and other transportation sectors. As a petrochemical raw material, it can also be used to produce various types of plastics and chemicals. Coal, natural gas, and nuclear energy can produce heat, but these energy sources cannot be used to run automobiles, fly airplanes, nor produce textiles as chemical raw material, as petroleum can.

Throughout the world today, various efforts are being made to develop automobiles powered by new energy sources, such as hydrogen and fuel cell

* *Grassroots refineries: Refineries built entirely from scratch*

vehicles. In the future, we will need to rely on these new technologies for power sources, and utilize petroleum for higher-value applications.

4. Human Relationships are Eternal Assets

For 27 years since its founding in 1981, JCCP has continued to promote technical exchanges with oil-producing countries. However, JCCP's role is not to provide solutions. Rather, it is to develop human resources through technical exchanges.

The exchange of solutions is but a one-time interaction, whereas human relationships are eternal assets. JCCP training programs and technical cooperation projects bring people together and provide an opportunity for them to help each other solve issues, based on friendship and trust. Relationships that are built through such exchanges are precious assets.

Rather than to simply provide opportunities for technical transfers, JCCP's overriding goal since its founding has been "to provide opportunities where people come together to mutually grow with each other and develop capacities to solve problems on their own."

Today, the role of the oil downstream sector is becoming more important than ever. Given this situation, JCCP is committed to making further efforts to strengthen its relationships with oil-producing countries and contribute to ensuring stable supplies of oil.

JCCP has been able to continue its activities for 27 years, thanks to the kind understanding and strong support from you all. I would like to close my speech by asking for your continued cooperation in future JCCP activities.

<Guest Speech>
"Toward Closer Collaboration Between Oil Suppliers and Consumers: Two Sides of the Same Coin"

Mr. Waleed H. Albedaiwi
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1. Current State of the Oil Downstream Sector

At Saudi Aramco, we believe that some of the most serious challenges facing the petroleum industry have less to do with subsurface issues than with above-ground considerations. Subsurface issues are those relating to the upstream sector, while above-ground issues are those relating to downstream issues.

Worldwide, demand for oil remains strong, and consumption is increasing. As a result, global oil transportation networks are facing increasing stresses and strains.

The world's refining capacity is stretched to its limit. Crude oil supplies are growing heavier and

increasingly sour, though demand for products is becoming lighter and whiter. To meet this demand, substantial investment is required to upgrade refineries, which leads to even higher prices for consumers.

We are also seeing substantial increases in the prices of raw materials, and a shortage of experienced engineers. These twin dynamics are driving up investment costs. New investments are becoming riskier, and investment decisions even more difficult.

The complex interaction of these various trends is fueling oil price volatility. Certainly, today's prices cannot be explained by the supply-demand fundamentals. Supplies are secure, and global inventory levels are adequate, but crude oil prices are seen hovering around the USD90 per barrel level. To make sense of that fact, we must consider the role that speculation plays in today's oil markets. A considerable influx of money is pouring into the global oil trade.

2. Search for a New "Producer-Consumer Relationship"

From a supplier's perspective, it might be easy to write off downstream issues as someone else's problem. However, we at Saudi Aramco believe that downstream issues are of concern not only to oil-consuming countries, but also us to oil-producing countries, as we all have a stake in the health of our industry as a whole.

Meaningful cooperation and collaboration must begin with a reconsideration of conventional producer-consumer relationships. In the past, we tended to put suppliers and consumers into opposite camps, which are bridged by cooperative ties at best, and divided by tension and mistrust at worst. In this outdated view, however, a true joining of forces cannot be achieved. The fates of producers and consumers are joined, and are inseparable.

In reality, producers and consumers occupy two sides of the same coin. Just as it is impossible to split the obverse side of a coin from the reverse, there is no way to decouple oil-producing from oil-consuming countries. Similarly, the upstream sector of the global oil industry cannot be separated from the downstream sector, the supply destination. As long as we continue to ignore the reality of the downstream sector and correlations in the oil industry, we cannot bring the full weight of our resources, capabilities and expertise to bear on the task of providing sustainable energy solutions for the future.

3. For the Healthy Development of the Downstream Sector

At Saudi Aramco we believe that meaningful progress in the downstream segment is best achieved by working closely with the world's leading firms.

Internationally, Saudi Aramco holds stakes in oil refining and marketing enterprises in the United States, Korea, China, the Philippines, and Japan. Last December, we broke ground on an expansion of the Port Arthur Refinery in the United States, which is part of our Motiva joint venture with Shell. By 2010, the refinery will be the largest single refinery in the United States. In China, our joint ventures with SINOPEC, the government of Fujian Province, and ExxonMobile began operations last year.

In the Kingdom, we are augmenting our existing refining portfolio with work on a pair of new export-oriented refineries. One is a joint venture with ConocoPhillips, and the other, with Total. Both refineries are slated to begin operations in 2011. Each will be a full-conversion facility configured to refine Arab Heavy crude, with a nameplate capacity of 400,000 barrels per day. This heavy crude configuration will avail more lighter crude for export to global markets, while also helping to narrow the gap between current worldwide refining capacity and tomorrow's heavier, increasingly sour global crude supplies.

The most ambitious projects in the Kingdom are the integrated refining and petrochemical projects being developed in Rabigh and Ras Tanura. The first is a PetroRabigh joint venture with Sumitomo Chemical. Saudi Aramco is supplying the project with 400,000 barrels per day of crude oil, 95 million cubic feet per day of ethane, and 15,000 barrels

per day of butane. This feedstock supply will be processed by a state-of-the-art plant that includes the world's newest and largest high olefins fluid catalytic cracker and an ethane cracker. Once complete, PetroRabigh will produce 18.4 million tons per annum of petroleum products and 2.4 million tons per annum of ethylene and propylene-based derivatives, and contribute to ensuring stable supplies of petroleum and petrochemical products inside and outside the country.

These projects combine Saudi Aramco's massive oil reserves, extensive production infrastructure, and existing refining assets with our partners' technical expertise and marketing networks. The integration with petrochemical facilities will maximize the value of our existing refineries, and lead to a natural migration down the value chain for Saudi Aramco. Furthermore, these integrated refining and petrochemical facilities will form the hubs of associated industrial clusters, and play host to small- and medium-sized companies in the manufacturing, services, and conversion industries.

Saudi Aramco is not trying to carry its downstream load all by itself. Instead, we are working in collaboration with the world's leading firms, with high expectations of their technical expertise, proprietary technologies, and marketing knowledge. At the same time, we will continue to help our partners meet their obligations to their customers and their wider societies.

4. In Consideration of Our 75-Year History

This year, Saudi Aramco is celebrating its 75th anniversary.

We are taking the occasion to not only reflect on the past, but also to consider the future of our planet's energy and our role in shaping it.

We at Saudi Aramco and all of you occupy one side of the same coin. Together, let us build an oil industry that is remarkable, sustainable, and beneficial for people around the world.

Mr. Waleed Albedaiwi, emphasizing how "we occupy two sides of the same coin"

<Summary and Closing Address>
"The Oil Downstream Sector as a Bridge of Cooperation"

Mikio Kojima
Then-Executive Director, Japan Cooperation Center, Petroleum

Mr. Kojima Mikio wrapping up the symposium and delivering a closing address

Before closing this 26th JCCP international symposium, I would like to say a few words on behalf of JCCP. This year's symposium has been held under the theme, "The Role of the Oil Downstream Sector from the Perspective of Stable Energy Supply—The Necessity and Possibilities of International Collaboration." I would like to thank all guest speakers, chairmen, panelists, and the audience, for their insightful and thought-provoking presentations and discussions over the two-day event.

1. Stable Energy Supply and the Role of the Oil Downstream Sector

JCCP organized this symposium based on two propositions.

The first proposition was that the oil downstream sector can and should play an important role in securing a stable supply of energy. Up to now, discussions on stable energy supply tended to focus only on upstream issues. However, today's drastic fluctuations in oil prices cannot be attributed to the upstream sector alone. The downstream sectors in each country also bear the responsibility of responding both qualitatively and quantitatively to the rapid increase in global demand for oil products.

The second proposition was that the downstream sector can act as a bridge of cooperation between oil producing and consuming countries. The downstream sectors in both oil producing and consuming countries share the mission of refining

crude oil and providind efficient supplies of oil products to domestic and global markets, while effectively responding to changes in the demand structure. Given the ever-increasing role of the oil downstream sector today, we should realize that the downstream sectors in both oil producing and consuming countries stand on common ground, in terms of ensuring stable supplies of oil, rather than focus on their different roles. The oil downstream sectors should join hands and make active efforts to serve as a bridge of cooperation between oil producing and consuming countries.

Through the keynote speech, guest speeches, and panel discussions, I believe we have reached a common awareness that the downstream sectors in oil producing and consuming countries need to look beyond their differences and cooperate in ensuring stable supplies of energy. The two days of discussions have helped us reach a consensus on the two propositions.

We have also agreed on the role of the oil downstream sector in ensuring stable energy supply, the main theme of the symposium. Firstly, the downstream sector should strive to provide stable supplies of oil products, by quantitatively and qualitatively expanding refining capacities in response to changes in the demand structure. Secondly, efforts should be made to promote energy conservation and increase energy efficiency not only in the oil downstream sector, but throughout economic society. Thirdly, the downstream sector should fulfill its responsibility of providing stable supplies of oil products by improving transportation means and stockpiling reserves. Fourthly, the downstream sector should strengthen its earning power, so that it may acquire investments, conduct R&D activities, and develop human resources that are needed to achieve the abovementioned responsibilities.

2. New/Alternative Energies and the Oil Downstream Sector

In the discussions, a number of speakers made references to biomass and solar energy technology, as well as to other new and alternative forms of energy. The introduction of new/alternative energy forms may curb demand for oil products on the one hand, but may bring positive effects on the other hand. For instance, the decrease in demand for oil products may mitigate the responsibility of the oil downstream sector to ensure stable energy supplies and allow petroleum to be allotted to more advanced uses and to those that are only possible with petroleum. I believe that new/alternative energies will become a common issue that must be addressed by both oil producing and consuming countries, in their efforts to develop sustainable global warming countermeasures and other environmental measures in the future.

3. The Role of JCCP

At JCCP, we intend to continue our efforts to solve issues and to establish friendly relationships in the oil downstream sector, with the support of oil-producing countries and relevant companies in Japan. This, I believe, is the best path to ensuring stable supplies of energy to the world.

Finally, I would like to thank everyone for their participation in this symposium, and wish to close my address with hopes that we may meet again at next year's JCCP International Symposium.

Personnel Changes

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