

ADNOC Marine Environment Workshop in UAE

The ADNOC-JCCP Marine Environment Workshop (CPO-22-14) was held in Abu Dhabi from May 19 to 21, 2014 at the request of the management of ADNOC's environment departments.

1. Previous Cooperation with ADNOC's Environment Departments

To strengthen relations with Abu Dhabi National Oil Company (ADNOC) in UAE through cooperation in human resource development, JCCP has implemented a seminar for ADNOC every year in Abu Dhabi on an environmental theme in cooperation with the environment departments of the ADNOC Group.

2012: Seminar on Energy Efficiency

2013: Seminar on Water Management

By making careful preparations in regard to the program content, lecturers and participants and gaining the participation of environment department managers in the ADNOC Group, ADNOC and JCCP have deepened their relationship of mutual trust through the joint implementation of these seminars. As a result of this relationship, the top management of ADNOC made a formal request to JCCP for a seminar on marine environment countermeasures, and thus the recent workshop has come to be held. ADNOC also requested JCCP's cooperation in conducting a study on marine environment countermeasures based on the results of

the workshop, so this became the first case in which a JCCP training program has led to the development of a technical cooperation project.

2. Workshop

(1) Participants from the ADNOC Group

Since the ADNOC-JCCP joint seminar was organized at the proposal of the ADNOC top management, the audience included top executives of the environment department in the ADNOC Head Office (Mr. Bakheet Al-Ameli, HSE Division Manager; Mr. Sultan Saif Al Shamsi, Manager) and approximately 50 chosen experts from the ADNOC Group's 20-plus+ companies. The participants came with a full understanding of current issues and new plans related to the marine environment, and provided practical and insightful input into the discussions. The program also included presentations from the ADNOC side regarding the current status of marine environment countermeasures, so that the workshop provided comprehensive knowledge with information provided by both sides.

(2) Overall Organization

The overall organization of the workshop was determined in advance in consultation with ADNOC, as follows.

Day 1

<AM> Introduction of advanced case examples and advanced technologies in Japan by JCCP lecturers

<PM> Introduction of marine environment countermeasures by ADNOC Group companies

Day 2

<AM> Extraction of important issues in marine environment countermeasures at ADNOC

<PM> Setting the priority of issues regarding marine environment countermeasures at ADNOC

Day 3

<AM> Proposal of solutions to ADNOC

(3) Workshop Proceedings and Achievements

1) Session 1: Marine Environment and the Oil Industry <Day 1 AM>

- a) Opening statement: Marine environment countermeasures at ADNOC – Mr. Bakheet Al-Ameli, HSE Division Manager



Mr. Bakheet Al-Ameli, HSE Division Manager, ADNOC

- b) Marine environment countermeasures in the oil industry: Advanced case examples and technologies – Tetsuo Arii (JCCP)
- c) Marine environment protection countermeasures in Japan – Dr. Takashi Owada (JANUS)
- d) Trends in global marine environment countermeasures – Mr. Takuma Mori (JANUS)
- e) Application of membrane technology to water recycling and reutilization – Mr. Naoto Aoyama (JGC)
- f) Hitachi's advanced technologies for marine environment and associated water countermeasures – Dr. Toshihiko Horiuchi, Dr. Takashi Isogami (Hitachi, Ltd.)

In the opening session, Mr. Bakheet Al-Ameli, HSE Division Manager, expressed his appreciation for JCCP's cooperation to date, and emphasized the importance of the workshop. T. Arii, JCCP lecturer, then presented marine environment issues related to the oil industry and introduced advanced case examples in Japan. Ultimately, the following issues were selected as issues of high relevance to the ADNOC Group.

- Total volume control and concentration control in Japan



JCCP lecturer T. Arii giving a lecture

- Management of radioactive substances in the ocean
- Development of marine monitoring systems and management biodiversity
- Advanced seawater desalination technologies
- Marine emission reduction measures and the zero liquid discharge system
- Recycling and effective utilization of water resources, and effective utilization of associated water

Next, JCCP lecturers gave lectures based on their specialized knowledge in their respective fields. First, Mr. Owada (JANUS) gave a general description of marine environment countermeasures in Japan, with particular focus on the principles and details of total volume control, monitoring, and wastewater standards. Dr. Mori (JANUS) lectured on global trends related to the marine environment (biodiversity treaty, ballast water, adhesion of organisms to ship hulls, etc.). As international trends in marine environment countermeasures are a matter of interest to ADNOC experts, an active Q&A followed each lecture. Dr. Horiuchi and Dr. Isogami from Hitachi introduced their company's advanced water treatment technologies and case examples of their application in UAE, as well as their cutting-edge technologies for the effective utilization of associated water. Mr. Aoyama from JGC Corporation introduced the novel water separation process and the zero liquid system as applications of the membrane separation technology.

2) Session 2: ADNOC's Initiatives

Representatives from the following companies of the ADNOC Group introduced their company's advanced initiatives for marine conservation.

- a) ADMA-OPCO: Environmental assessment accompanying the construction of a new marine facility
- b) TOTAL ABK: Marine environment initiatives related to offshore oil field operations
- c) ADOC: Mangrove development, protection of marine mammals and fish
- d) BUNDUQ: Development of fishery resources (installation of modified sulfur concrete fish reefs)

The lectures demonstrated that the companies of the ADNOC Group are each making active efforts for conservation of the marine environment.

3) Sessions 3 – 5: Workshops

On the second and third days of the seminar, the



Workshop venue

participants divided into groups and carried out deep discussions under the moderation of T. Ariei, lecturer, while extracting issues and deliberating their priority and solutions, and determined the direction of initiatives by ADNOC as a whole. With the cooperation of an ADNOC Head Office manager who was also in attendance, the discussions proceeded in reference to ADNOC's policies.

a) Session 3: Extraction and prioritization of issues

Issues were discussed from the perspective of the degree, frequency, and seriousness of their risk to the ADNOC Group, and in the end, each group gave scores to their issues and made a presentation. Ultimately, the following five issues were selected as priority issues to be addressed by ADNOC.

- A. Discharge management
- B. Monitoring, data management & reporting
- C. Marine life, biodiversity
- D. Oil spill
- E. Drilling activity

b) Session 4: Extraction of specific issues for examination

The groups discussed what kinds of problems exist in regard to each issue and what kinds of improvement measures could be taken, and summarized the main points of each issue as follows.

<Issues and priority of marine environment countermeasures by the ADNOC Group>

- A. Discharge management
 - From concentration management to total volume management
 - Emission minimization
 - Effective utilization of water resources (associated water, wastewater generated from seawater desalination)

- B. Marine environment monitoring and data management
 - Monitoring of the marine environment
 - Data standardization and time-based changes
 - Reporting to the management
- C. Protection of marine life and biodiversity
- D. Oil spill countermeasures
- E. Pollution caused by drilling offshore oil fields

3. Summary

(1) JCCP environment workshops and involvement of the ADNOC top management

JCCP workshops have been reported to the ADNOC top management after each implementation, a practice which has led to the recent request for implementation of a workshop on the marine environment. The content and results of this marine environment workshop have also been reported to the top management after its implementation, with favorable reviews.

(2) Strengthening of the cooperative relationship between the ADNOC Environment Committee and JCCP

The marine environment workshop was held jointly with ADNOC's environment departments, and was implemented extremely efficiently with indirect support from the ADNOC Environment Committee. The Committee is responsible for promoting environmental considerations in operations across the board through the ADNOC Group under ADNOC's top management. Mr. Al Kamali, Chairman of the Committee, also participated

in the JCCP Executive Candidate Training Program that was newly offered this fiscal year.

(3) Cultivation of a new technical cooperation project from a training program

As a result of this workshop, ADNOC expressed its wish for JCCP to continue the study of the workshop theme, and JCCP is thus proceeding with the study as a technical cooperation project. The Japanese companies participating in the project say it also offers them an opportunity to make the necessary preparations for cultivating a new market.

(4) Stronger presence of JCCP training activities owing to the implementation of a local customized seminar

The implementation of a customized program in UAE has allowed JCCP to promote greater awareness of JCCP activities among the top management and various other parties concerned in the oil-producing country, and was effective in strengthening JCCP's presence in UAE.

(5) Future issues

ADNOC is pursuing a personnel development program for its national staff members, and is actively seeking industry-university cooperation with universities and educational institutions inside and outside UAE. JCCP has thus far organized training courses and particularly ADNOC-JCCP joint seminars in Abu Dhabi in cooperation with higher education institutions in UAE, and intends to continue making such efforts to provide training that responds to the needs of oil-producing countries.

<by Tetsuo Arai, Training Dept.>



Workshop instructors and participants