

# Seminar on Refinery Maintenance Management and TPM Held at Saudi Aramco



*JCCP-side lecturers with the management of Southern Area Oil Operations and participants of Part 2 of the seminar*

Saudi Aramco is currently implementing improvement and reform activities with a focus on safety management and preventive inspection, with the aim of upgrading facility inspection technologies in Saudi Arabia. To complement its efforts, it sought JCCP's cooperation in learning about the current state of improvement activities such as Total Productive Management (TPM) and the latest maintenance management techniques employed by Japanese refineries. In response to this request, JCCP and Saudi Aramco have begun to hold a Customized Program-Overseas (CPO) on a regular basis.

This year's seminar was divided into two parts and held at two different venues. Part 1 was held at Yanbu NGL Fractionation Department from April 22 to 30, 2010, and Part 2 was held at the North Ghawar Producing Department (Southern Area Oil Operations) from May 1 to 5, 2010. Part 1 has been held in turn among four refineries and two NGL fractionation departments, and was held for the third time this year. Part 2 was held this year as a result of a request made by a participant who attended a TPM seminar in fiscal 2008 for implementation of the seminar in his department.



*With the management of Southern Area Oil Operations*



*Part 1 lecture session: Mr. Keisuke Suzuki from Idemitsu Kosan*



Part 1 presentation of group discussion results



Part 2 presentation of group discussion results

Four Japanese lecturers conducted the seminar. They included a lecturer from JCCP's Training Department (F. Tone) and three external experts (Mr. Akio Higashi from Showa Shell Sekiyu K.K.; and Messrs. Yoshisumi Tamao and Keisuke Suzuki from Idemitsu Kosan Co., Ltd.). A carefully selected group of 27 participants from Saudi Aramco's four refineries and two NGL fractionation departments attended Part 1 of the seminar, and 36 participants from departments related to Southern Area Oil Operations attended Part 2.

As the seminar was to be held at Southern Area Oil Operations for the first time, Part 2 was held with the attendance of Mr. Saad A. Turaiki, Vice President, and all management employees of the North Ghawar Producing Department. The Southern Area Oil Operations' strong expectations of the seminar were also evident in the opening speech given by Mr. Abdullah Al-Helal, Manager, North Ghawar Producing Department. Mr. Al-Helal spoke about Saudi Aramco's company-wide maintenance activities launched in 2005 and their relationship to JCCP training programs, and also introduced the historical relationship between Saudi Arabia and Japan.

The seminar program was designed in consideration of the fact that the majority of the participants in both Parts 1 and 2 of the seminar were maintenance engineers. On the first day, a lecture provided an outline of the history and present state of maintenance management in Japanese refineries. The second day's lecture introduced maintenance management issues that Japanese refineries have confronted and resolved, and discussed the necessity, purpose and aim of TPM activities. The third day's lecture provided greater understanding of TPM by presenting case examples of improvement measures taken by two refineries which introduced TPM in advance of other refineries in Japan and faced various frustrating experiences in the process of its introduction. On the fourth day, participants engaged in group discussions, which were particularly well received in previous TPM seminars, to provide an awareness of the significance of small-group activities. As typical of TPM activities, the participants divided into small groups and discussed various issues to gain conscious awareness of the actions they take in order to solve a problem.

In the performance exercise on "workplace issues and solutions," each group discussed the gap (problem) between their ideal images of the workplace and reality, and presented the results of their discussions with the other groups.

Specific discussion themes for the group in Part 1 of the seminar were "the handing down of technical experience," "fire-extinguishing water control system," "employee capability," and "refinery margin." In Part 2, they were "experienced employees," "generational gap in experience," "employee morale," "reliability of rotary equipment," and "manpower." As can be seen from these themes, the handing down of technologies across generations and the quality of engineers are



With participants of Part 1 of the seminar

main issues of concern, as they are also in Japan. To prevent the groups from identifying problem areas without careful consideration, or from trying to deny personal involvement by simply dismissing the issue as a management problem, the lecturers guided the direction of discussions by asking “why, why, why” over and over again.

We noted some noteworthy changes in this year’s discussions. For one, the discussion on the theme of “refinery margin” indicated that cost awareness has also begun to spread throughout the operational field. Another major change from last year’s discussions is that younger employees have begun taking a more assertive role in addressing and seeking improvement in employee-related issues. The early retirement of long-time employees in their 50s was raised as a common issue in the discussions on “employee capacity” in Part 1 and on “experienced employees” and “employee morale” in Part 2. The participants claimed that this is one of the factors relating to the handing down of technology. Moreover, the recognition that a large generational gap exists, with employee age distribution peaking in the 50s and 20s age groups, underscored the issue of how to hand down experience and knowledge from the older to younger generations and prevent the decline of employee technical skills as a whole. This also happens to be an issue of concern in Japan, but the difference is that the under-16 population accounts for 40% of the total population in Saudi Arabia. Saudi Aramco is addressing the issue by expanding job categories (increasing

equipment capacities, constructing new refineries) to increase employment, but the company is still facing a dilemma, due to the large difference in the motivation levels of long-time employees and younger employees. Even during group discussions, the younger employees accurately assessed the issue of their poor motivation as stemming from early retirement, and actively sought to improve the situation.

Judging by the lively group discussions and the many comments we received that the course was extremely helpful, we feel we have accomplished the expected goal of the seminar, for the most part. However, as some of the younger employees noted that they desire a deeper technology-oriented program, some changes might be needed to respond to differing needs among participants of different age groups. Some other participants suggested providing comparisons with the situation in Japan, premised on the lecturers’ preliminary efforts to understand the situation at Saudi Aramco. As these opinions seem to indicate, perhaps it is time to reassess and review the future direction of the seminar in reference to Saudi Aramco’s needs.

We intend to maintain close communications with the seminar staff on the Saudi Aramco side, to more accurately grasp the needs of each department at Saudi Aramco and implement as meaningful a seminar as possible in the future. A strong partnership is especially important, in order to respond swiftly to policy changes that occur when personnel changes are made every two to three years at Saudi Aramco.

*<by Fumihito Tone, Training Dept.>*



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