

Signing Ceremony for the Joint Project on the Construction of a Refinery Maintenance System in Saudi Arabia

Between the 1970s and 1980s, Japanese companies have engaged in the construction of a large number of oil refining facilities in the Middle East region. As these facilities have been in operation for many years since their construction, state-run oil companies in Middle East oil-producing countries are now showing increasing interest in their maintenance. Against this backdrop, JCCP has launched projects on the maintenance of refinery facilities in Kuwait and other Middle East countries, and has garnered extremely high praise from the beneficiary countries. Thus, it is exploring the possibility of horizontally expanding the technical cooperation project even further.

As part of the effort to further expand the technical cooperation project, JCCP has established a relationship with Saudi Aramco and has made preparations for the commencement of a technical cooperation project on the maintenance of refineries and other oil refining facilities.

The “Project Finding Program on the Construction of a Refinery Maintenance System in Saudi Arabia” was thus launched as part of JCCP’s FY2013 Project Finding Program, and has been upgraded to a joint project in fiscal 2014.

Project efficiency is being pursued not only by consulting with Saudi Aramco’s Juaymah Natural Gas Liquid Fractionation Department (JNGLFD), but also

by collaborating and consulting with Aramco Asia Japan (AAJ).

Revolving around the technical keywords of “Risk Based Inspection” (RBI), the project aims to assess the size of risks to plants, facilities and equipment by block and to inspect and repair them based on that assessment. This inspection method was first used in the oil plants of major oil companies, and was later applied to petrochemical and power generation plants as well. Furthermore, the technology has been disseminated throughout the world and introduced to general oil refining facilities also at Saudi Aramco.

As the RBI method by API is based on case examples of accidents and statistical analyses, the RBI method by API has not been applied to LNG and LPG facilities, for which there are extremely few examples of accident cases. Additionally, as there are many countries where open inspection of LNG and LPG facilities is not legally required, it is common practice throughout the world not to conduct open inspections even if facilities have been in operation for 20 to 30 years after their construction. However, from the perspective of facility management, not conducting an open inspection of such tanks is unsafe, and the introduction of an alternative inspection method was therefore sought.

Meanwhile, the High Pressure Institute, Japan



Signing ceremony (Mr. Abdulrahim S. Al-Ghamdi, Acting General Manager, and Mr. Tsukidate, General Manager, JCCP)



Exchanging of commemorative gifts (Mr. Abdulrahim S. Al-Ghamdi, Acting General Manager, and Mr. Tsukidate, General Manager, JCCP)

(HPI) and Japanese companies have developed an RBI inspection method for LNG and LPG tanks and related facilities, and have begun their introduction to facilities in Japan. The possible introduction of this technology has been discussed with Saudi Aramco's JNGLFD, and as a result, arrangements were begun to introduce RBI to propane and butane tanks in an LPG shipping base in Juaymah.

HPI and IMC commenced deliberations on analyzing the damage mechanism of LPG tanks operated by Saudi Aramco's JNGLFD and fine-tuning HPI's RBI program to the LPG tanks during fiscal 2014. Based on this deliberation, Saudi Aramco's JNGLFD and JCCP held a ceremony for signing an agreement for the project on August 25, 2014.

An outline of the project is as follows.

- (1) Term of agreement:
FY2014 – FY2016 (3 years)
- (2) Signer representing JCCP:
Mr. Tsukidate, General Manager, Technical Cooperation Dept.
- (3) Signer representing Saudi Aramco:
Mr. Abdulrahim S. Al-Ghamdi, Acting General Manager
- (4) Main issues to be examined:
Introduction of the RBI system to LPG tanks at JNGLFD
Examination of Corrosion under Insulation (CUI) of the LPG shipping pipeline
- (5) Attendees from Japan:
Mr. Sakai, Chairman, HPI
Mr. Kihara, Special Researcher, HPI
Mr. Shimura, Corporate Officer, IMC
Mr. Tsukidate, General Manager, JCCP
Mr. Nobayashi, Councilor, JCCP



Posing for a group photo after the ceremony

The signing ceremony began with opening remarks from Saudi Aramco, followed by speeches from Saudi Aramco and JCCP regarding the project. As a matter of special note, a member from the Inspection Engineering Unit gave an impromptu speech, stating that since Saudi Aramco has some 200 LPG tanks, the results of the recent study should definitely be considered for introducing the RBI system to the tanks in the future. This statement was taken as expressing Saudi Aramco's strong interest in the project concerned.

JCCP, for its part, expects the recent deliberations to promote the widespread application of Japan's technologies to Saudi Aramco's LPG tanks. Furthermore, through implementation of the upcoming project, JCCP hopes to strengthen its relationship with Saudi Aramco and AAJ, and to organically link together JCCP's training activities and technical cooperation projects for further promotion of the two principal activities.

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