

CPJ Seminar on General Process Control for Uzbekistan

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

1. Overview

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

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

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

2. Course Content

Intended for process control engineers, the course introduced Japan's advanced technologies in a wide



Participants and JCCP staff

range of fields, from their basics to practical application. It also covered process control technologies in refineries, broadly ranging from field instrumentation devices to control systems and higher information systems.

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

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

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



Hands-on training in the overhaul of flow instruments



Hands-on training in DCS



Process control demonstration using a simulator

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

- Oval Corporation, Yokohama Office (March 6)
Lectures on flow instruments in general; tour of the manufacturing site for calibrators; practical training in the overhaul of flow instruments
- Idemitsu Kosan Co., Ltd., Tokuyama Refinery (March 8)
Lectures on refinery computer systems, real-time operation management systems and advanced control systems; lecture on application software in actual operation in an instrument room
- Yokogawa Electric Corporation, Mitaka Head Office and Komine Factory (March 11 & 12)
Lectures on process control in general, from



At the plant of an instrumentation device manufacturer

field instrumentation devices to DCS (distributed control system) and SIS (safety instrumented system); practical training of a control system in a demonstration room; lecture on analysis instruments; hands-on training at the production site of analyzers

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

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

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



Practical training on process control at a refinery



Process control demonstration using computers

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

3. Observations

There were initial concerns about whether the course could achieve its intended outcome, for several reasons: there were only three months from its planning to implementation, all explanations had to go through a translator, and not all participants were instrumentation/control specialists. However, judging by the participants' evaluation and impressions, it seems the intended

objective of providing a general understanding of process control was practically achieved. This was made possible by the participants' sense of responsibility that stemmed from their conscious awareness of being representatives of their countries or companies, and by the outstanding qualities and determination of each individual. Their excellent teamwork and sincere attitude to receiving training were also evident in the way the leader of the group smoothly called everyone together after completion of the closing ceremony and gathered reports from everyone.

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

<by Shigeru Matsui, Training Dept.>