

JURONG ENGINEERING LIMITED



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BULLETIN

IHI President Visits JEL



IHI President & CEO, Mr Tamotsu Saito (with garland), together with JEL Chairman, Mr Bob Tan, and our Social & Recreation Committee Members

It was a sunny Thursday afternoon on 6 September 2012, when Mr Tamotsu Saito, the President and Chief Executive Officer of IHI Corporation, visited JEL. He was accompanied by JEL Chairman, Mr Bob Tan; and Mr Seiichi Daita, Managing Director and Chief Executive Officer of JEL.

Mr Saito was warmly welcomed at the lobby by the management staff, and introductions were made by Mr Seiichi Daita. This was followed by a brief photography session; after which, Mr Saito was led to the 5th Level Boardroom. Here, another great surprise awaited him. Upon entering, Mr Saito was met with a rousing greeting by all the divisional heads, as well as staff from JEL's Recreation Club—dressed in their colourful ethnic costumes to showcase the multi-nationality of the company's employees. The staff then welcomed Mr Saito with a lively JEL Corporate Song and Dance item—"Rising to the Challenge"—that brought great smiles to Mr Saito and his entourage.

After taking more commemorative photographs, Mr Saito was introduced to the divisional heads, followed by a presentation of JEL's business operation and activities.

It was a memorable and proud moment for all of us in JEL, a wholly owned subsidiary of IHI Corporation.

HIGHLIGHTS

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- 2 ♦ JEL Completes Construction Phase in Record Duration of Six and a Half Months and KEPPEL MERLIMAU COGEN IIA is Successfully Fired
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JEL Completes Construction Phase in Record Duration of Six and a Half Months and KEPPEL MERLIMAU COGEN IIA is Successfully Fired



Overall View of Keppel Merlimau Cogen - Unit IIA

JEL's Project Team at the Keppel II Project in Singapore has completed the HRSG IIA Construction Phase in an inspiring and record-breaking duration of six and a half months. This was achieved through tight schedule management, great teamwork, and efficient management of the limited lay-down area and congested access due to the concurrent progress of M&E and civil works.

Initial steel erection work began in October 2011, followed by installation of the Heat Recovery Steam Generator modules, pipe installation, and then hydro-testing, which was successfully completed on 20 April 2012.

The timely and smooth progress of works was a result of the primed preparedness of the erection team and close on-site working relationship

that developed between the Client, Alstom Power, and Jurong Engineering Limited. Everyone pitched in to help each other get the job done; making this big team effort the key factor behind the project's success. Mr Roger Rohrer, Site Manager of Alstom Power, attributed the fast turnaround on erection to great teamwork, highly competent and responsive on-site supervision, and close management of deliveries. Every activity was planned precisely and carried out according to plan, thanks to veteran site supervisors and engineers who have elucidated and controlled the required time frame for each erection activity. A similar approach was used to ensure that the limited lay down space was put to the most efficient use—the Client arranged for its suppliers to bring in equipment

and materials on a Just-In-Time (JIT) basis, rather than having them delivered too far ahead of schedule. In addition, the project benefited largely from the standardization of construction methods and utilizing a modular approach that sped up erection.

The principal focus at Keppel now is to forge ahead from the construction phase into the commissioning phase. Firing of the 400MW GT26-based unit was carried out on 20 August 2012.

To sum up, the approach adopted by the project team of “no delays, no matter what the reason” has worked well in the management and control of the schedule and work-site. This, together with their strong teamwork, have been strategic to the success of the project.

TUAS New Combined Cycle Plant 5 Project - Successful Earlier Completion of HRSG Hydro Test

JEL's scope of work for the ongoing New Combined Cycle Plant (CCP5) at the Tuas Power Station in Singapore, comprises the following main packages:

MECHANICAL ERECTION OF:

- . Turbines (Gas + Steam) and Generator . Power Island (PI) Equipment and Piping . Heat Recovery Steam Generator (HRSG)
- . Rest of Plant (ROP) Equipment and Piping . Module Prefabrication and Delivery . L40 Steel Piping Prefabrication and Delivery



Side view of Tuas CCP5 HRSG & Stack



Overall side view of Tuas CCP5 Gas Turbine

The plant will be fuelled predominantly by natural gas, with fuel oil as standby fuel. The plant will generate approximately 400MW of electric power based on an ALSTOM Power (AP) single shaft 1 x KA26-1 SS configuration.

The project schedule for mechanical erection and commissioning is estimated to be completed in about 13 months, with a target to achieve First Firing in February 2013. Erection works commenced in early January 2012 with the lifting of the first HRSG steel column. Due to the good cooperation among the Owner, Alstom Power and JEL, the HRSG hydro test was successfully completed ahead of schedule at the end of August 2012.

This achievement was obtained through extraordinary effort from all of the team members to overcome the difficulties

encountered during the execution of the works—especially the ones caused by the inclement weather experienced during erection and testing. AP Tuas Site Manager, Mr Julian Martin Corona, issued a statement of gratitude to the JEL Tuas CCP5 Team—led and guided by Senior Project Manager, Mr Lee Chin Fatt—saying, *“Today, once again JEL has demonstrated their capacity to commit and deliver on time. We trust that the following milestones and remaining works will be completed in the same safe and successful manner.”*

The JEL Tuas CCP5 Team is presently fully focused on achieving the First Firing and completing the remaining works on time. Despite the many challenges faced in this fast-track project, the Team is also dedicated to delivering good quality work and safety standards.

JEL Maintenance Pte Ltd (JML) – Successful Projects in Year 2012

DECONSTRUCTION WORKS FOR 11KT IRGANOX 1010 AT BASF PLANT, JURONG ISLAND, SINGAPORE

The BASF Plant has three main chemical process trains, and the client intends to upgrade the product/process in one of the trains.

JML's scope of work for this project involved the complete removal of the existing equipment, piping system and E&I systems in one of the process trains. Some of these removed equipment are to be reconditioned by JML, which will be reused in the reconstruction phase. This is the first time JML was awarded work of this nature.

The dismantling phase was successfully completed in August 2012.



Deconstruction works about to begin on BASF Centre Train



BASF Centre Train after completion of deconstruction

SMP-III FACILITY EXPANSION WORKS AT SMAG, JURONG ISLAND



JML was awarded with this Brownfield installation works at the SMAG Complex from Sumitomo Chemicals, Singapore, in November 2011; and works were successfully completed in July 2012.

The scope of work for this project involved equipment installation; piping prefabrication and site installation; and commissioning assistance works.

The major challenges that were faced were associated with it being a fast-track project, the jacketing pipe work and tie-in works.

REPLACEMENT OF HTR TUBES AND ATTACHMENTS AT MANJUNG POWER PLANT, MALAYSIA



JML Malaysia was awarded this boiler shutdown works from IHI Power Systems, Malaysia; and successfully completed the project in August 2012.

For this project, the scope of work involved the replacement of 702 numbers of boiler tubes—which included 2,000 butt-welded joints and 3,200 fillet-welded attachments, welding and its NDT (Non-destructive Testing) and PWHT (Post-weld Heat Treatment) works.

The major challenges faced were the outage duration of only 62 days, and the short timeline to perform radiography and post-weld heat treatment works. To overcome this, JML obtained approval from the plant owner and employed the Phased Array Ultrasonic Test as a replacement to radiography.

Change JEL Campaign

The “Change JEL” Campaign was launched this year as part of the “CHANGE IHI” Campaign by JEL’s parent company—IHI Corporation.

Taking a cue from the presentation and invaluable knowledge-sharing at the JEL headquarters by IHI Engineering Australia Pty Ltd, JEL formed its own committee and conducted several brainstorming sessions to come up with a theme and effective campaign that would, hopefully, reap tangible and intangible benefits for the company and its employees.

In order to broaden the campaign’s reach and gain more participation, all JEL staff were encouraged to get involved by submitting suggestions to the management through their respective departments. Amongst all the entries received, the suggestions by Ms Sara Gill and Mr Prabhu Velusamy were selected; and they were each awarded a cash reward of S\$250.

JEL’s Management has since endorsed and decided to implement the suggestion to promote a “Healthy Lifestyle”, as they recognize that the performance of a company is, to a very large extent, dependent on the performance of its employees. A “Healthy Lifestyle” promotes good health, well being and a healthy state of mind, all necessary ingredients for a better work performance.

The “Healthy Lifestyle” programme is now currently ongoing and is being implemented through JEL’s Social & Recreation Committee (SRC).

The first two “Healthy Lifestyle” programmes that the SRC launched was a cycling trip at East Coast Park and a nature hike at MacRitchie Reservoir’s Tree Top Walk.

JEL's Healthy Lifestyle Programme

Since the launch of the Healthy Lifestyle Programme as part of the “Change JEL” Campaign, the Social & Recreation Committee (SRC) has focused more on outdoor recreational activities.

We have since organised a hike at MacRitchie Reservoir's Tree Top Walk and a cycling trip at East Coast Park. Staff who participated in the activities had an enjoyable time; and for those who missed joining us for these events, the SRC is pleased to share with you our experiences.

MACRITCHIE RESERVOIR TREE TOP WALK



Saturday Morning Trek at MacRitchie Reservoir Park on 30th June 2012

It was a beautiful Saturday morning on 30 June 2012, when a group of adventurous and nature loving JEL staff gathered at the Venus Loop (another entry to the Tree Top Walk at MacRitchie Reservoir Park). We wanted to experience a walk that is closer to nature and explore the history of Singapore's first reservoir and its rich flora and fauna.

We started from Venus Loop and after a few metres of walking, we were already faced with undulating terrain! After walking around 2.6 km to the Ranger Station, the trail then led us to the entrance of the Tree Top Walk. There were animals that kept us company along the way. The monkeys were actually quite tame, although some did look ferocious.

The walkway is a 250m aerial free-standing suspension bridge spanning Bukit Peirce and Bukit Kalang, which are the two highest points in MacRitchie. From the bridge, a beautiful panoramic view of Upper Peirce Reservoir and the surrounding lush green rainforest could be seen. Once on the bridge, there was no turning back! The walkway only allows for one-direction traffic so that visitors will enjoy a better walking experience. There were also informative signs along the trail to describe the scenery and vegetation.

The walk was moderately difficult, especially for those who had not tried the trail before. We covered a total distance of about 9 km. During this journey, we encouraged and supported each other at times when it was difficult to continue walking in that undulating terrain. The morale boost which we got from each other enabled us to reach the final destination, i.e. Mushroom café.

We had a light lunch there and then left to return to our sweet homes with a great sense of satisfaction. It was a challenging

but enjoyable walk. The air was cool and fresh, and we had a memorable time walking closer to Mother Nature. While we didn't expect such a large turnout, it was still manageable. Overall, it was a fun social gathering and great exercise.

EAST COAST PARK CYCLING

It was a beautiful sunny morning on 28 July 2012, as we gathered at the East Coast Park for our cycling trip. We put on our sunshades, sunscreens and hats, all excited to cycle along the sea coast while taking in the breathtaking view. It was also our honour and pleasure to have our Managing Director, Mr Daita, and his lovely wife to join us for this exciting and fun event.

We rented our bicycles at the kiosk near Carpark C3. Some of our staff, especially couples, who wanted to experience something a little different, rented the 4-wheels trishaw type bicycle. We cycled to the Bedok Jetty—the longest fishing jetty in Singapore, and also the most popular one. Along the way, we clicked away at our cameras and also poked fun at each other. We had a wonderful time revelling in each other's company, while enjoying the sea breeze and peaceful sound of rolling waves.

When we reached the Bedok Jetty, we were greeted by a beautiful panoramic sea view. There were also lots of people gathered there for fishing. We took a group photograph under the blazing sun and hurriedly snapped more pictures, but had to rush back to return the bicycles to the kiosk on time.

We then took a stroll to the nearby eateries where we took our lunch. Some of us even went to the beach to take some more snapshots before we headed home.

Overall, it was an enjoyable and fun social event where we all spent quality time together.



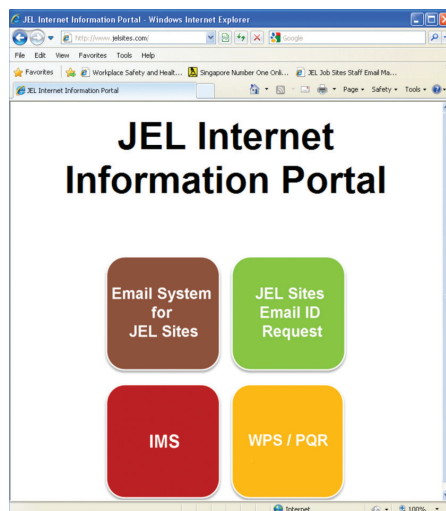
Cycling Trip at East Coast Park on 28th July 2012

JEL Internet Information Portal

The Quality and EHS Management Systems, under the charge of the Compliance Department, aims to enhance project performance by providing value-added support to the work team at project sites and also to JEL's group of companies.

During our periodic site visit for the purpose of conducting Internal QOHSE Audit, we received many feedback from site personnel that they had often encountered difficulties in accessing JEL's Intranet at remote locations, and as such were unable to refer to documents such as IMS Procedure, Standard Forms, and also in getting Welding Procedures, Job Risk Assessments, etc. This in turn becomes an obstacle for the site personnel to fulfil Project's requirements quickly.

We therefore collaborated with the IT department to develop a new website (<http://www.jelsites.com>) as shown on the right:



This website serves as a main information and document resource, which contains documents such as the QOHSE Manual, Procedures, Work Instructions, Safe Work Practices, Permit To Work System, Standard Forms, ASME Quality Control Manual, EHS Legal Regulations of Singapore

and Overseas, Job Risk Assessment records, Site Safety Management System Manual, Environmental Aspect/Impact, EHS Notification, Company Official Certificates, Welding Procedures (WPS/PQR) and other valuable information.

Should the site team need any of the above documents, they can immediately access and retrieve the required information, and submit them to the Client promptly; thereby saving time and, at the same time, achieving Client satisfaction.

Also, all site staff would be able to obtain their new e-mail identification and have access to emails quickly through this website.

We appreciate any feedback on additional sources of information or documents that should be incorporated into this website, for more productive and effective project execution.

Lucky Draw

Contest

We are giving away five (5) Flash Card Thumb Drives sponsored by the Corporate Affairs Division to the first five correct entries picked.

Simply answer the four questions and send your answers together with your name and address to dewie@jel.com.sg or 25 Tanjong Kling Road, Singapore 628050. (Hint: answers can be found in this issue.)

Name: _____ NRIC No : _____

Address: _____

The questions for the contest are:

1. What was the approach adopted by the project team that contributed to the success of the Keppel Merlimau Cogen Project?

2. What were the difficulties encountered during the erection and testing phase of the Tuas CCP5 Project?

3. The performance of a company depends to a very large extent on the performance of its employees. Is this statement true or false? Please explain and give your reasons.

4. Name two activities launched by JEL's Social & Recreation Committee (SRC) as part of the Healthy Lifestyle Programme.

Contact

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