2014: IMPLEMENTATION REPORT

CH2M uses WRENCH technology as a universal PMC system on $4 billion mega-project

[CSSP, Iraq, 2014]

CH2M was chosen by Iraq's South Oil Company (SOC) to provide project management consultancy services on the Common Seawater Supply Project. This is considered a critical infrastructure project by the Iraq Government because it will provide the much needed injection water to the oil fields of Southern Iraq. The oil fields will use the seawater for enhanced oil recovery, where water is injected into the reservoir, ensuring increased oil production. The project started in January 2014 and is scheduled to be ready for operations in mid-2017, after which CH2M will provide continued services and support through operations and maintenance.

At a glance:

- Common Seawater Supply Project
- Location: Iraq
- Duration: 54 months
- Owner: South Oil Company (Iraq)
- Value: USD 4 Billion
- CH2M role:
  - High Priority Surveys
  - Environment impact assessment
  - FEED for seawater treatment
  - FEED for the pipelines

Primary stakeholders

- **CH2M** is the project management consultant, with participants from Abu Dhabi, Dubai, London and Sao Paulo.

- **Petrolinvest dd** is handling the high priority surveys with participants from Bosnia and Abu Dhabi.

- **Coffey International Limited** was awarded the Environment impact assessment packages, with participants from Australia and Dubai

- **Parsons International Limited** is preforming the FEED for seawater treatment. Parsons' scope of work includes conducting 14 optimization studies and preparing the FEED for water intake and outfall structures, an approximate 500-meter 12.5-million-bwpd shipping channel and offloading facility, a seawater treatment facility, and a gas turbine power plant.

Other support structures included in the FEED are living accommodations, administration buildings, potable water and sewage treatment systems, security, clinic, maintenance, and warehouse facilities, an emergency station, a mosque and a helipad. Parsons will also design, construct, and operate a 9,200-bwpd pilot plant at the site. The participants were from different Parsons offices at Abu Dhabi, US and Brazil.

- **ILF Consulting Engineers** were commissioned by SOC to provide FEED for the pipelines of the Common Seawater Supply Project. The project participants are from Munich and Abu Dhabi.

Overall this project involves over a hundred contractors. (The contractors for some packages are not yet finalized.)

Project Work Scope and Process

The project is divided into different packages through four phases: FEED, Detail Engineering, Construction and Commissioning and Handover.

The contractors identified for each phase prepare the documents\ drawings (i.e. their deliverables) and submit them to CH2M on the committed date. CH2M's PMC team along with SOC (the client) review these documents. During the review, both parties add their comments to each document, including internal comments by reviewers, drawing mark-ups, client review comments, and consolidated client comment file. CH2M then consolidates the comments and submits the document and replies to the back to the contractor along with the Approval Status Code, within the review period specified as per the contract. Based on the Approval Status Code the next revision is generated and if approved it is issued to the next phase.

It was decided that all correspondence between Client, PMC and Contractors would have to be 'tagged' in order to correctly identify the package i.e.sender, receiver, correspondence type etc. and facilitate easy retrieval and tracking. (The issue was that all correspondence had be viewable by both CH2M and SOC at a single place while contractors needed access to only their own mails replies. This kind of user-specific control was made possible only with the WRENCH system.)

Why WRENCH?

CH2M is a long-time user of WRENCH technology but this was the first time they used it on a PMC project. Specifically, they wanted to address:

The large number of documents and submissions: At a rough estimate this project involves about 9000 (and counting) deliverables with each deliverable having at least 3 submissions. Tracking all the different submissions for such a huge number of deliverables was was a primary concern, another concern was the need to maintain all the order revisions along with the comments.

Communication between stakeholders: There were multiple stakeholders for different packages and tracking the email communication between them with only MS outlook was almost impossible.

Tracking: On analyzing the project, we found that the primary cause for project delay was when submissions and resubmissions did not go as scheduled. For example, contractors are required to submit/ resubmit their documents on certain pre-agreed dates, with comments that need to be incorporated during resubmission. Failure to submit/ resubmit as scheduled could have an enormous ripple effect, hence tracking each instance of each document was necessary. But this was very difficult to enforce in practice because each document on an average gets submitted/ resubmitted 3-4 times before being approved. CH2M wanted to leverage the WRENCH system to expedite pending deliverables rather than manually sending reminder notifications and escalations (which would have been done in a non-WRENCH-assisted project).

Multiple stakeholders scattered across more than 8 locations: CH2M needed a way to get all the different stakeholders and participants, across different locations, time zones and cultures, to work together smoothly. Having a shared online system helped in creating an efficient and secure collaborative environment.

Process enforcement: To avoid bypassing steps in a process it becomes necessary to automate the process and eliminate human error. CH2M consulted with WRENCH, after which they decided to make the review process itself a system-controlled i.e. by-default process, which demanded a level of 'intelligent' automation found only in the WRENCH system.

Data security: Each stakeholder would have access to their own data only, which necessitated a highly 'controllable' work environment which was again possible only with WRENCH.

Commenting and tracking: Review of the contractor documents included internal and possibly sensitive discussions which were not supposed to be seen by the contractors. CH2M wanted a way to consolidate the final comments only, and in a format that could just be handed over to the contractors.

CH2M wanted to leverage the WRENCH system's advanced **search-and-retrieval** feature, which provided secure access to latest data, real-time reports for expediting, and status of the deliverables and correspondences.

The internet connection in Iraq was very poor, due to which access to the submitted documents and getting the electronic comments and correspondences took a substantial amount of time, and involved hard copies (which was neither efficient nor secure). CH2M was able to solve this issue through WRENCH.

What did WRENCH deliver?

- **Accessibility:** All documents are stored in a secure location. Since everything is on the cloud, all that is required is a web browser and the credentials to log in and thereafter data can be accessed on-the-go. (Project personnel always have access to the latest data by default although all the versions and revisions are systematically stored for future retrieval if required).

- **Smooth Collaboration:** All official communications are being made through WRENCH and in fact submissions and communications through any other channels are not considered official.

At a glance:

- Real time Collaboration
- Electronic submission of deliverables
- Electronic comments by all stakeholders
- Electronic comments consolidation
- Access only to the latest revision (but with complete history on demand)
- Ability to anticipate and prevent delay in submissions and resubmissions
- Online and real-time tracking of correspondences and replies
- Easy search and retrieval
- Ability to avoid litigation by providing complete history of all transactions
- Connectivity from remote locations

- **Efficient Communication:** Communications were categorized as Emails, Letters, RFIs, MOMs, Technical Queries and Memos. Each of these was given an automated numbering logic for quick identification which has greatly streamlined intra and inter team communications and enabled easy access to any communication with its complete thread.

- **Online Tracking and Managing of Planned Documents:** Every submission is recorded with a transmittal number and all deliverables are floated through a predefined process with predefined actioners (which implies that this process cannot be bypassed by anyone).

- **Monitoring Based on To-do lists:** The action items for all contractors, PMC and clients were distributed via simple To-do lists. Anything pending for submission over a specific time period is being tracked down through real-time reports and proactive reminders and notifications are sent to ensure on-time submissions\ re-submission and replies to correspondences.

- **Commenting and Electronic Consolidation:** The comments from different reviewers are now captured electronically and the comment tracking sheet is also created automatically, which means that all comments are consolidated electronically within the system. This saves a lot of time through electronic collaboration. Also, the complete history is maintained electronically.

- **Security:** Security for each stakeholder is different. This was managed through WRENCH by controlling accessibility to data i.e. each user sees only what he is authorized to see.

- **Real-time Reports:** Different reports to get the deliverables and correspondence status, submission registers, open items, delayed items, progress registers are now available online.

- **Access Terminal for the Client:** A local access terminal was provided for the client at Iraq to make work faster, even with poor internet connection.

Benefits

Based on their previous experience with WRENCH technology CH2M is witnessing huge improvements, including:

- **80%** fewer project management resources are required to manage the project for both the client and PMC

- **70%** fewer resources are required for tracking and expediting work

- **50%** fewer resources required for document control

- **40%** reduction in cycle time (thanks in to online collaboration)

- **100%** quality assurance by ensuring process and access to latest information only

- Overall cost savings due to no capital investment for client-end hardware and infrastructure (as it is all managed on the cloud)

For details contact

www.wrenchglobal.com
marketing@wrenchsolutions.com