

**Clark-Reliance<sup>®</sup> Boiler Level Instruments  
Installed at Uniper's Enfield Power Station  
for On-Time Start-Up Despite COVID-19**



The Enfield Power Station is a 442MW CCGT Power Station located in Enfield, NE London; it was commissioned in 1999. The current owner, Uniper, who own and operate the facility, contacted Induchem in 2019 with a view to upgrading.

Induchem visited the site and carried out a Boiler Trim Survey, produced a report on compliance to the ASME Boiler Code and prepared a proposal for Uniper. Clark-Reliance also made a joint visit to Uniper Technologies Limited (UTL). During this visit, we used the Clark-Reliance demo equipment to show a group of UTL engineers how the Simpliport and EyeHye SmartLevel equipment operates. Jim Kolbus (via TEAMS) and Amir Hedayatnia of Clark-Reliance joined the meeting, and delivered a training session on compliance with ASME Boiler Code.



**IP Drum Before**



**IP Drum After**

The new Simpliport® 180 System offered the following advantages over the existing gauges:

- Wide 180 degree viewing angle
- Always on LED Illumination
- Reduced installation envelope
- Simplified maintenance
- No hot torquing required
- New longer lasting glass modules

The new Eye-Hye® SmartLevel™ System offered the following advantages over the existing Electro Eye-Hye:

- Individual microprocessor-based Level Sensing Modules for each probe
- Self-diagnostic with Status Indicator for each Level Sensing Module
- Multiple remote indicators
- Brazed probes designed for pressures of up to 3000 psi (206 Bar)
- Vivid bi-colour LED indicators at Drum Level & Control Room
- At-a-glance Normal Water Level reference LEDs
- Blowdown Required Indicator Light

Clark-Reliance® was able to share drawings of the original equipment that was supplied when the Enfield Power Station was constructed. Uniper requested a proposal from Induchem for the full supply and installation of the Clark-Reliance equipment. Steps included:

- Installation of wiring / cables to support the Clark-Reliance equipment
- Removal of existing instrumentation
- Installation of new Clark-Reliance Eye-Hye® SmartLevel™ & Simpliport® 180 gauges
- Installation of new Control Room marshalling cabinet for the remote LED Level Indicators
- Cold Commissioning of equipment
- Hot Commissioning of equipment



LP Drum Before



LP & IP Drums After



Induchem worked with the Mechanical and Electrical contractors who were known to Uniper. The scope of work and responsibility was agreed with Uniper. Induchem placed purchase orders on Mechanical and Electrical Contractors for the works to be carried out and provided NS/CP Supervision for the installation.

The outbreak of Covid-19 added some extra challenges to delivering the project. Induchem, Clark-Reliance, Uniper and the selected contractors worked well together to overcome these challenges whilst working in line with Uniper's comprehensive pandemic plans and following the appropriate Government guidance on Covid-19 .

Drawings were approved by Induchem and thus the production of the equipment by Clark-Reliance began. In order to ensure that Uniper's schedule was met, Induchem set up regular Teams meetings for all of the stakeholders so that any issues could be identified at an early stage and managed accordingly.

Uniper chose an "expedited delivery" option from Clark-Reliance wherein Clark-Reliance exceeded the customer's expectations in terms of having the equipment manufactured and ready for inspection.



**Eye-Hye SmartLevel Control Boxes**



**Remote Indicating LEDs in the Control Room  
Prior to Start-Up**

Again, due to Covid-19, a visit to the Clark-Reliance production facility for inspection would have been very problematic. Induchem arranged to have the factory inspection of the equipment carried out virtually via Microsoft Teams. Clark-Reliance provided all the relevant documentation for the inspection to Induchem for review prior to the inspection. Clark-Reliance also set up a webcam in their inspection area. The inspection went well, with all questions and queries from Induchem and the client answered. All the equipment was prepared for shipping, crated and collected from Clark-Reliance by Induchem's carrier.

To meet Uniper's schedule, the equipment was Air-Freighted from the USA to the UK. Upon receipt of the equipment at Induchem in the UK, it was noted that the crating of the equipment was excellent!

Schedule of work was agreed with Uniper. It was decided that removal of the existing instrumentation would not begin until the Clark-Reliance equipment had arrived in the UK. The cable installation was completed well in advance of the arrival of the equipment.

Work on site progressed well. Induchem presented a 3-Day Look Ahead at daily Teams meetings with the project team at Enfield Power Station. This gave clear visibility on activity, access and resources required. All the stakeholders collaborated well and there was good ownership of any issues that arose.

Clark-Reliance offer an excellent program to ensure the safe and effective initial start-up of their equipment. The program is known as SureStart™. This usually involves having a Clark-Reliance technician travel to the plant location. COVID-19 and restrictions on international travel made this impractical.

Uniper, Induchem, and Clark-Reliance utilised Microsoft's Holo-Lens technology along with the Induchem on-site team to complete the "Cold Commissioning" of the Clark-Reliance equipment. The technology worked very well, and the Cold-Commissioning was completed with minimal issues.

Uniper's schedule allowed for Hot-Commissioning within a couple of weeks of the Cold-Commissioning. When elevated temperatures at the Drum Level during operation made the Holo-Lens technology ineffective. Clark-Reliance were on hand with alternate technology to remotely guide and support Induchem via a Teams meeting. The Hot-Commissioning procedure went very well, and Uniper was satisfied with their new, code compliant drum level indication systems.

Induchem and Clark-Reliance delivered virtual training sessions for the Operations Team at Uniper. Spare parts and maintenance services for the new equipment are available from Induchem, who will work closely with Uniper to ensure that maximum reliability and service life are achieved.

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