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Let's Solve Water

Case Study
Middle East Region UV Treatment

Non-Genuine UV Lamp Replacement Compromises Performance and Water Treatment Reliability

Deciding to purchase a third party replacement part rather than the original manufacturer's brand part is typically a matter of risk assessment. If deciding whether to purchase and install third party, non-genuine components that could potentially compromise the performance and reliability of a large-scale water disinfection operation, the risks can be quite high.

This is what recently happened to a wastewater treatment plant situated in the Middle East region. A large Wedeco UV disinfection system was first installed and commissioned in 2008 and then expanded in 2017 to increase treatment capacity. The plant today has a design capacity of 25,792 cubic meters per hour (approximately 165 million gallons per day). During this 2017 expansion, the system owner opted to replace a portion of its original Wedeco Ecoray lamps with 3rd party non-genuine lamps. The decision to replace the Wedeco lamps was taken following a tendering process in which lowest pricing was the key influential factor in deciding which supplier secured the right to supply.

During this tender process, minimal consideration was taken into the potential effects, from a process performance or reliability perspective, of installing non-specification, non-genuine lamps into a Wedeco UV system.

Challenge

An increasing number of certification bodies, including NWRI and the USEPA's UVDGM, require the use of original components in UV water disinfection systems to achieve compliance. But certifications and local compliance policies are different in different parts of the world, including the Middle East region. At this installation, replacement lamps were procured from an alternative supplier in Europe who claimed their lamp is identical to the Wedeco Ecoray lamp, and that theirs would match or exceed the performance guaranteed by the Wedeco Ecoray lamps. The supplier of the non-genuine lamps was not offering any independent guarantees or validation in regards to the performance of the UV lamps they were supplying.

Country:	Middle East
Application:	Wastewater, Water Treatment
Solution:	Wedeco Ecoray® lamps
Year:	2017

Wastewater treatment site with Wedeco UV disinfection system proves original Ecoray lamps superior performance versus 3rd party non-genuine lamps.

The UV system experienced immediate reliability issues upon removing the Wedeco lamps that had reached their end of life, and installing the non-genuine alternative lamps in their place.

The newly installed, non-genuine lamps were either failing or not performing adequately from the very early hours of the lamps projected life span. Although replacement lamps were supplied to the end user, these also failed after short run hours.

As a result of installing non-genuine lamps, the end user experienced a number of issues, including:

- Significant increase in downtime due to failures.
- Increased maintenance costs, due to frequent lamp replacement.
- System reliability compromised.
- Inconsistency of UVC output from individual modules, due to having to mix individual lamp arrays with lamps having different run hours because of reliability issues.
- System disinfection performance and compliance challenges due to poor and inconsistent UVC output from the non-genuine lamps.
- Poor technical and process support from the non-genuine lamp supplier to help resolve reliability and performance problems during operational period.

Solution

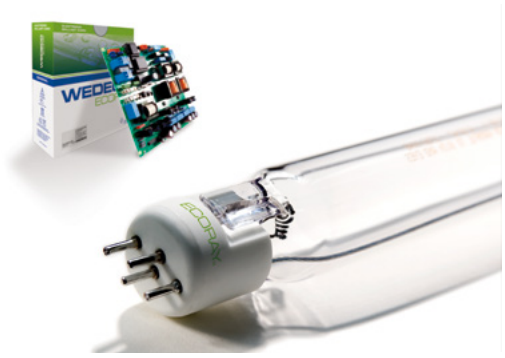
During the six months of running non-genuine lamps, the end user recognized the original Wedeco lamps installed in other sections of the UV system continued to operate reliably and perform to the lamp's guaranteed standards.

As a result of the challenges faced by the treatment process through the use of non-genuine lamps, Wedeco offered support and had fully qualified Wedeco Service Technicians perform Wedeco's Condition Audit on the 3rd party lamps. The audit concluded, just as the end user also finally concluded, these non-genuine lamps were not equivalent in performance or reliability.

The non-genuine 3rd party lamps were removed from the system and new Wedeco Ecoray lamps were installed along with the servicing of the system.

Results & Customer Benefits

Since Ecoray brand lamps have been re-installed, the system has experienced no reliability or compliance issues, which has also led to only recommended routine maintenance being required to keep the system fully functional and performing to as-commissioned standards. Along with cost reductions, on-site labor savings have been achieved through the elimination of unforeseen reactive maintenance.



Ecoray high output low-pressure lamps and ballast cards have low power consumption. The lamps emit high UVC even in dimmed mode, and have a guaranteed lamp life.

Xylem guarantees that the system will meet the specified disinfection targets for its complete lifetime on the condition that genuine Wedeco Parts are always used. However, Xylem cannot guarantee disinfection targets or warranties if non-original lamps and other parts are used.