



EXPERTS IN ULTRAVIOLET DISINFECTION

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OIL & GAS
UV SYSTEMS & PACKAGES

UV SYSTEMS & PACKAGES FOR OIL & GAS



OVER 30 YEARS EXPERIENCE
POSITIONS ATG UV
TECHNOLOGY AS THE CLEAR
MARKET LEADER IN THE OIL &
GAS INDUSTRY



WORLDS' ONLY
MANUFACTURER OF
SPECIALLY ENGINEERED
ATEX Ex d UV SYSTEMS &
OFFSHORE PACKAGES

SPECIALIST UV SYSTEMS & PACKAGES FOR THE OIL & GAS SECTOR

DEFINING THE UV INDUSTRY WITH MARKET LEADING TECHNOLOGY FOR OVER 30 YEARS

ATG UV TECHNOLOGY ARE THE WORLDS' LEADING MANUFACTURER OF SPECIALISED UV SYSTEMS, TURN-KEY SKID PACKAGES & CONTAINERISED UV SOLUTIONS FOR THE OIL, GAS AND OFFSHORE SECTORS.

atg UV Technology has been providing UV disinfection and treatment equipment and packages to the oil, gas & marine industry for over 30 years and have provided solutions to some of the world's leading offshore contractors and operators. Clients including: Shell, Total, BP, Texaco, Statoil, Conoco Phillips, GDF Suez, Saipem, Transocean, Baker Hughes, AKER, Technip, Veolia, SMOE and many, many more.

As the clear market leader for the oil and gas sector, atg UV Technology offer a range UV systems and packages that fully meet the specifications of the

petrochemical and offshore industry, often requiring engineering far beyond the specification of normal ultraviolet disinfection systems. Our standard oil and gas applications include: -

- ✓ Drinking water disinfection
- ✓ Wastewater discharges
- ✓ RO membrane protection
- ✓ SRB Reduction - Well Injection
- ✓ SRB Reduction - Pipeline Hydrotesting
- ✓ Hydraulic Fracture Fluids (Shale Gas)
- ✓ Process & Cooling Loops



ONE OF THE LARGEST NiPH CERTIFIED (FHI WATER REPORT 120) UV SYSTEM RANGES AVAILABLE ON THE MARKET, TREATING FLOWS FROM 1 m³/hr TO OVER 170 m³/hr OF POTABLE DRINKING WATER



OIL & GAS APPLICATIONS

Potable Drinking Water

atg UV Technology are the worlds' leading supplier of oil and gas / offshore UV systems used for post RO membrane and flash evaporation potable water disinfection.

UV is a chemical free, single pass technology that protects against all known microorganisms and bacteria. The range of atg UV Technology potable water UV systems includes:-

- ✓ WHO Guidelines - 99.99% reduction of microorganisms
- ✓ US EPA UVDGM (2006) validation protocols
- ✓ Primary Disinfection (class 1) 40 mJ/cm² UV Dose
- ✓ Secondary Disinfection (class 2) - 16 mJ/cm² UV Dose

NiPH Certified Potable Water

The Norwegian regulations for the disinfection of offshore water supplies are seen as the worlds' highest standard in offshore water treatment, and are used throughout both the Norwegian and UK North Sea sector. Additionally for FSPO's and support ships wishing to enter Norwegian waters must have NiPH certified UV Systems installed by law. NiPH (FHI Water Report 120) projects included an exacting specification for system sizing and UV performance: -

- ✓ Independently validated 40 mJ/cm² RED UV Doses
- ✓ Sized for worst case water quality of 79% UVT T10
- ✓ Sized to treat the max flow capacity of the installation

RO Membrane Protection

To protect and increase the life of RO membranes used for desalination and potable water production on offshore platforms, Polychromatic (MP) UV disinfection systems are often used for the de-chlorination of RO feed water (chlorinated seawater) to protect RO membranes from degradation, eliminating requirements for the dosing, storage, handling and dosing of chlorine removal chemicals such as sodium metabisulphite (Na₂S₂O₅).

Additionally disinfection of RO feed water significantly improves RO membrane life by reducing the biological burden on the membranes and eliminating biofilms.



Chemical Free Alternative to Biocides

SRB (SULPHATE REDUCING BACTERIA) REDUCTION

Well Injection - SRB Reduction

As an alternative to chemical biocides, atg UV Technology offer a range of UV disinfection packages for the treatment and removal of SRB's (Sulphate Reducing Bacteria) and other microorganisms from sea water / hydraulic stimulation fluids used for well injection applications and advanced oil and gas recovery.

Typically, more than 90% of chemical biocides such as glutaraldehyde can be eliminated from the process, saving many £1,000's per day in chemical costs alone, whilst significantly improving the environmental and health and safety profile of drilling operations.

Pipeline Hydrtesting - SRB Reduction

Seawater is often used to hydrtest sections of pipeline to ensure design interiority. To prevent microbiological corrosion caused by SRB's producing H_2S (hydrogen sulphide), seawater is required to be disinfected.

Environmental barriers and associated safe storage and handling concerns have seen many operators move away chemical biocides (glutaraldehyde), favouring UV disinfection. Combined with 50 micron filtration, a correctly sized UV disinfection system and a residual dose of an oxygen scavenger such as sodium bisulphite $NaHSO_3$, the allows for biocides to be eliminated from the process.

Hydraulic Fracturing - SRB Reduction

atg UV Technology supply the worlds' leading oil and gas operators with UV systems used for the disinfection of water and hydraulic fracturing fluids. UV is highly effective at reducing SRB's, and typically a single pass through a UV system will provide a >5 log (99.999%) reduction.

As an effective and chemical free alternative to biocides, The use of UV technology has helped operators worldwide reduce volumes of chemicals used during fracturing operations by over 90%, in both initial injection and flowback water reuse, significantly improving the environmental and PR profiles of the fracking operations.

ATEX / IE CEX HAZARDOUS AREAS



Market Leading ATEX Ex d Solution

atg UV Technology are the world's leading supplier of ATEX certified UV systems, and have supplied the world's leading oil & gas operators with the market leading ATEX solutions for over 30 years.

A unique feature of the atg UV Technology design is the development of the world's first Ex d UV control panel. The Ex d panel utilises a flameproof flange seal, designed to fully withstand an internal explosion, allowing the release of expansion gases following an explosion to be relieved through the joints, whilst not permitting the explosion to be transmitted into the external atmosphere.

In relation to Ex p or purged designs, which use positive gas pressure to create a safe area within the panel, Ex d solutions are significantly favoured by operators. Ex d equipment has been proven to be safer, more robust, smaller, lighter and requires far less installation and maintenance activity.

Furthermore, due to the complex nature of Ex p designs and the requirement for a safe gas supply, Ex d hazardous area solutions are often far more cost effective.

ATEX / IE CEX UV System Design: -

- ✓ Ex d UV Chambers (flameproof)
- ✓ Ex nA UV Chambers (Non Sparking)
- ✓ Ex e UV Chambers (Enhanced Safety)
- ✓ Ex d Control Panels (flameproof)
- ✓ Ex e Junction Boxes (Enhanced Safety)
- ✓ Ex ia Instrumentation (Intrinsically Safe)

Typical System designs are suitable for: -

- ✓ ATEX / IE CEX Zones 1 & 2
- ✓ Temperature Classification T3
- ✓ Gas Groups IIA
- ✓ Gas Groups IIB
- ✓ Gas Groups IIC

THE WORLDS' ONLY
ATEX Ex d SOLUTION
FOR HAZARDOUS
AREA ZONES 1 & 2





DESIGNED &
MANUFACTURED IN THE UK
BY OUR SPECIALIST TEAM
OF DESIGN ENGINEERS
WITH OVER YEARS
EXPERIENCE IN THE OIL &
GAS INDUSTRY



OFFSHORE SPECIFICATION UV SYSTEMS & PACKAGES

Oil & Gas / Offshore Specifications

- ✓ Vast experience with offshore specifications
- ✓ Full offshore documentation requirements
- ✓ NiPH certified (FHI Water Report 120)
- ✓ US EPA UVDGM validated & NSF-55 certified
- ✓ NORSOK, GOST, DOSH, CE mark compliant designs
- ✓ ASME, PD5500 & EN13445 pressure vessels
- ✓ ATEX / IE CEX hazardous area - zones 1 & 2
- ✓ Exotic materials and bespoke designs
- ✓ 230V / 400V / 440V / 480V / 690V designs

Skid Packages

- ✓ Purpose built 316L stainless steel skid frames
- ✓ Ultra compact, low weight designs
- ✓ Euro code 3 skid designs & stress analysis
- ✓ DNV certified for a single point offshore lift
- ✓ 3rd party stress analysis + nozzle loads
- ✓ Combined technology options e.g. with filtration
- ✓ ATEX / IE CEX hazardous areas zones 1 & 2
- ✓ Winterisation (heat tracing & insulation)
- ✓ Design & manufacture to client specifications

Containerised Solutions

- ✓ Onshore & offshore design specifications
- ✓ 10ft, 20ft, 30ft & 40ft designs
- ✓ Fully automatic, turn-key designs
- ✓ DNV certified for a single point offshore lift
- ✓ 3rd party stress analysis + nozzle loads
- ✓ Combined technology options e.g. with filtration
- ✓ ATEX / IE CEX hazardous areas zones 1 & 2
- ✓ Design & manufacture to client specifications
- ✓ Special bespoke designs available

LISTENING TO & WORKING WITH OUR CUSTOMERS FOR OVER 30 YEARS

CONTACT US TODAY



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