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January 4, 2005

Mr. Jeffrey Lintern
Westinghouse Savannah River Company
Building 742-A
Aiken, SC 29808

Re: Modification to Reduce Capacity of UV System – E-mail Dated December 27, 2004
Construction Permit No. 17,679-IW
Aiken County

Dear Mr. Lintern:

In the referenced letter, you requested that DHEC approval to reduce the number of UV disinfection lamps used at the Central Sanitary Wastewater Treatment Facility.

Please accept this letter as modification to the above referenced permit. This modification will reduce the capacity of the UV disinfection system to match the design capacity (1.05 MGD) of the CSWTF. See change to Item #6 of the Project Description as follows:

From: 6. An 8.3 MGD capacity ultra violet disinfection system.

To: 6. A **1.05 MGD** capacity ultra violet disinfection system **with ultraviolet intensity monitoring capability. The UV system will have three banks of 16 UV lamps but only two banks will be operated at a time to achieve a full rated plant capacity of 1.05 MGD.**

The permit is modified as indicated by the **bold** type. All other conditions of the permit are still in effect. Please send a letter that describes the disposition of the UV system components that are being removed from the UV disinfection system. If you have any questions or comments, please contact me at the above address or by phone (803-898-4012).

Sincerely,

Barry S. Mullinax, P.E.
Federal, Energy, and Pretreatment Permitting Section
Bureau of Water

cc: Scott Simons, Edisto Savannah EQC
Melissa King, FEP Section Manager
Anthony James, Pollution Source Compliance

From: <jeffry.lintern@srs.gov>
To: <mullinbs@dhec.sc.gov>
Date: 12/27/04 1:10:55 PM
Subject: UV Disinfection Lamp Reduction at SRS Central Sanitary WWTP

Ref: Permit #17679-IW, dated 5/23/94

Barry,

As discussed on the 12/27 phone message, ~~SCDHEC approval is requested to~~
~~reconfigure the UV disinfection lamps at the Central Plant based on the~~
~~following information.~~ In support of this request, I've also attached the
UV dosage calculations, design specifications, and manufacturer's
literature on the equipment:

The current configuration for Ultraviolet (UV) disinfection of the waste
treatment flows in the Central Plant consists of series of three (3) banks
of 128 lamps. A re-evaluation of operating flow averages and the
environmental effluent standard limits (< 200/100 ml fecal coli-form over
a 30 day geometric mean at maximum plant design flow of 1.05 MGD)
indicates that adequate disinfection can be maintained with only two (2)
banks of 16 lamps. While providing the necessary disinfection of the
effluent per established limits, the optimized UV lighting configuration
will reduce energy consumption, lamp replacement material costs, and labor
associated with lamp cleaning and replacement.

~~SCDHEC approval is requested to~~
~~reconfigure the UV disinfection lamps at the Central Plant based on the~~
the Central Plant ~~reconfigured UV lighting.~~ The effluent
trough modifications will have no affect on present or future plant flow
capacity.

Effluent from the SRS Central Waste Treatment Plant is disinfected using
two (2) of the three (3) installed banks of 128 Ultraviolet (UV) lamps.

~~The existing UV treatment was designed to disinfect up to 1.05 MGD~~
~~effluent capacity, however~~
~~SCDHEC approval is requested to~~
~~reconfigure the UV disinfection lamps at the Central Plant based on the~~
The UV lamps are designed for 9000 hours of operation and must
be periodically cleaned or changed to maintain the disinfecting
capability.

~~SCDHEC approval is requested to~~
~~reconfigure the UV disinfection lamps at the Central Plant based on the~~
by installing ~~two (2) banks of 16 UV lamps~~ SRS incurs
electrical, material and labor costs operating and maintaining the UV
lamps, ballasts and controls. The environmental effluent standard limit
that must be maintained through UV lighting disinfection is < 200/100 ml
fecal coli-form over a 30 day geometric mean. Weekly testing of fecal
coli-form from the Central Plant indicates that compliance with these
limits is met and exceeded.

~~The existing UV lighting controls were manufactured by Fisher Porter~~
~~and the existing UV lamp parts and technical support for that equipment~~

Through an evaluation of the Central Plant UV disinfection operation with
a new UV lighting supplier (Inflico Degremont), it has been determined
that the UV lighting configuration can be optimized. The current
environmental limits at the full rated plant capacity of 1.05 MGD can be
met by baffling the effluent to two (2) banks of 16 UV lamps. While
providing the necessary disinfection of the effluent per established
limits, the reconfiguration will reduce energy consumption, lamp
replacement material costs, and labor associated with lamp cleaning and
replacement. Although not included in the projected project cost and

savings, the new configuration minimizes the overall costs for replacing the obsolete Fisher-Porter equipment because no major flow capacity changes will be made to the effluent trough or UV lamp rack supports.

The justification for the Central Waste Treatment Plant UV lighting optimization includes:

- Reduction in electrical energy consumption because of the reduction in required lamps
- Reduction in material costs for UV lamps and sleeves because fewer lamps will be operating
- Reduction in labor costs for UV lamp cleaning and replacement because fewer lamps will be operating
- Reduction in replacement costs for obsolete UV lighting controls and ballasts by retrofitting new ballasts and control panels to existing UV lamps

Please call me with any questions or if you require additional information. Thanks for your assistance.

Jeff Lintern, P.E.
Environmental Services Section
Westinghouse Savannah River Company, LLC
Phone: (803) 725-9003 / Pager #17576

CC: <james.schafner@srs.gov>, <bill.payne@srs.gov>, <lee.davis@srs.gov>, <fred.swanson@srs.gov>

UV Dosage Calculation

Savannah River Central Plant WWTP

SYSTEM DATA

Flow rate	Q =	0.525 MGD
		23.001635 liters/s
		364.58333 GPM
UV Transmission	UVT =	65 %
# Of Channels	Nc =	1
# Of Modules Across Channel	Nm =	2
# Of Module Banks In Series	B =	1
# Of Lamps Per Module	NI =	8
Spacing	S =	3 in
UV Lamp Output	w =	26.7 watts
UV Lamp Arc Length	R =	147.32 cm
NAI from EPA Design Manual 1986	In =	10900 uW/cm2
Actual Output/Nominal Output	Fp =	65%
Actual Transmittance Of Clean Quartz	Ft =	90%
Actual vs Theoretical Retention Time	Q =	90%

REACTOR DATA

Reactor Length	58 in =	147.32 cm
Reactor Width	6 in =	15.24 cm
Reactor Height	24 in =	60.96 cm
Reactor Volume	136864.8 cm3 =	136.86 liters
Quartz Jacket Diameter	2.45 cm =	0.96 in
Quartz Volume	694.52 cm3 =	0.69 liters
Total Qtz Volume	11112.29 cm3 =	11.11 liters
Void Volume	125752.5 cm3 =	125.75 liters
UV Density =	3.39715 watts/liter	

DOSAGE CALCULATION

Theoretical Residence Time	T =	5.47 s
Actual UV Dosage	D =	31375 uWs/cm2
Velocity	V =	0.269466 m/s
Reynolds Number	N _{RE} =	36066.612

UV Dosage Calculation

Savannah River Central Plant WWTP

SYSTEM DATA

Flow rate	Q =	1.05 MGD
		46.003271 liters/s
		729.16667 GPM
UV Transmission	UVT =	65 %
# Of Channels	Nc =	1
# Of Modules Across Channel	Nm =	2
# Of Module Banks In Series	B =	2
# Of Lamps Per Module	NI =	8
Spacing	S =	3 in
UV Lamp Output	w =	26.7 watts
UV Lamp Arc Length	R =	147.32 cm
NAI from EPA Design Manual 1986	In =	10900 uW/cm ²
Actual Output/Nominal Output	Fp =	65%
Actual Transmittance Of Clean Quartz	Ft =	90%
Actual vs Theoretical Retention Time	Q =	90%

REACTOR DATA

Reactor Length	116 in =	294.64 cm
Reactor Width	6 in =	15.24 cm
Reactor Height	24 in =	60.96 cm
Reactor Volume	273729.5 cm ³ =	273.73 liters
Quartz Jacket Diameter	2.45 cm =	0.96 in
Quartz Volume	694.52 cm ³ =	0.69 liters
Total Qtz Volume	22224.59 cm ³ =	22.22 liters
Void Volume	251504.9 cm ³ =	251.50 liters
UV Density =	3.39715 watts/liter	

DOSAGE CALCULATION

Theoretical Residence Time	T =	5.47 s
Actual UV Dosage	D =	31375 uWs/cm ²
Velocity	V =	0.5389319 m/s
Reynolds Number	N _{RE} =	72133.225

UV Dosage Calculation

Savannah River Central Plant WWTP

SYSTEM DATA

Flow rate	Q =	1.575 MGD
		69.004906 liters/s
		1093.75 GPM
UV Transmission	UVT =	65 %
# Of Channels	Nc =	1
# Of Modules Across Channel	Nm =	2
# Of Module Banks In Series	B =	3
# Of Lamps Per Module	Nl =	8
Spacing	S =	3 in
UV Lamp Output	w =	26.7 watts
UV Lamp Arc Length	R =	147.32 cm
NAI from EPA Design Manual 1986	In =	10900 uW/cm ²
Actual Output/Nominal Output	Fp =	65%
Actual Transmittance Of Clean Quartz	Ft =	90%
Actual vs Theoretical Retention Time	Q =	90%

REACTOR DATA

Reactor Length	174 in =	441.96 cm
Reactor Width	6 in =	15.24 cm
Reactor Height	24 in =	60.96 cm
Reactor Volume	410594.3 cm ³ =	410.59 liters
Quartz Jacket Diameter	2.45 cm =	0.96 in
Quartz Volume	694.52 cm ³ =	0.69 liters
Total Qtz Volume	33336.88 cm ³ =	33.34 liters
Void Volume	377257.4 cm ³ =	377.26 liters
UV Density =	3.39715 watts/liter	

DOSAGE CALCULATION

Theoretical Residence Time	T =	5.47 s
Actual UV Dosage	D =	31375 uWs/cm ²
Velocity	V =	0.8083979 m/s
Reynolds Number	N _{RE} =	108199.84

Infilco Degremont Inc

Savannah River (Central Plant) SC WWTP design specifications for the UV Disinfection System for WWTP

1.00 GENERAL:

The Contractor/Owner shall provide all labor, equipment and material necessary to install three (3) UV Systems ~~at the Savannah River (Central Plant) SC WWTP~~ for the disinfection of wastewater, complete in place, and specified herein and approved by the owner.

1.01 Manufacturer:

~~The UV System upgrade~~ shall be composed of standard components from a Aquaray™ HLS Model No. 16-LH, horizontal open channel design, as manufactured by Infilco Degremont Inc., Richmond, Virginia.

1.02 Qualification of Manufacturer:

Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of UV disinfection with a history greater than five years and one-hundred successful packaged open channel horizontal installations.

Infilco Degremont Inc has over 1,000 installations through out the world. The open channel horizontal package systems are based on the EPA design manual and is based on a bioassay that can be sent in as part of the submittal package. A reference list of installations is available by request.

2.00 QUALITY ASSURANCE:

2.01 Factory Testing:

The UV system upgrade components shall be factory assembled, functionally tested as a system, and crated prior to shipment.

2.02 Warranty:

The UV system upgrade components shall be warranted for 12 months after start up, not to exceed 18 months after shipment, per Infilco Degremont, Inc. standard terms and conditions.

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3.00 PROCESS AND PERFORMANCE:

3.01 Water Quality:

The UV system with upgrade components shall be able to disinfect the water with the following minimum quality characteristics:

Peak Flow	1.05 MGD (2 Units & 1 Redundant)
Suspended Solids	<30 TSS mg/L
UV Transmittance	>65% at 253.7 NM through 1 cm
Temperature Range	33°F to 90°F
Influent Fecal Coliforms	200,000 mpn/100ml
Effluent Standard Limits	< 200/100 ml fecal coliform over a 30 day geometric mean.

3.02 UV System Design Criteria:

The UV system shall be designed to provide a minimum dosage of 31,000 microwatt-seconds per square centimeter ($\mu\text{Ws}/\text{cm}^2$) at the peak flow, with 65% lamp life (8,760 hours) with no fouling of the quartz jackets. The dosage listed shall reduce the fecal coliform count to less than 200/100 ml geometric mean for any 30 day period at peak flow, at 65% lamp output, and 65% UV transmittance, through 1 cm of effluent with no fouling of the lamp jackets.

4.00 ULTRAVIOLET DISINFECTION SYSTEM COMPONENTS:

4.01 General Construction:

All materials of construction used in the design of the UV system upgrade components shall be corrosion resistant, suited for outdoor, corrosive service. All materials directly exposed to UV light shall be 304 stainless steel, Type 214 quartz or Teflon®.

4.02 Open Channel Horizontal System:

~~The disinfection system shall be upgraded with a control panel and~~
~~all components~~ to provide greater reliability and increased monitoring capabilities. The UV system upgrade components shall be designed, to work with the existing UV lamp modules, and for installation in the

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existing concrete channel. Channel width reduction baffles shall be supplied.

The UV system upgrade components shall be comprised of the following components:

Number of UV Bank Upgrades . . .	Three (3)
Channel Baffle	One (1)
Lot of Spare Parts	One (1)
Operator Kit	One (1)
Lot of Service	One (1)
Lot of Freight	One (1)

Each bank shall consist of the following:

Number of Ballast Enclosures	Two (2)
Number of Control Panels	One (1)

Total Number of System Upgrades. . Three (3)

4.03 UV Treatment Channel Details:

~~The UV system upgrade shall be installed in the existing concrete channel.~~
 During periods of peak flow, the UV system upgrade shall provide a minimum contact time of approximately 5.47 seconds and have an appropriately sized, 23" serpentine weir to regulate the water level and maintain a maximum crest over the weir of 1". The ballast enclosure mounting platform shall be provided for the ballast enclosures. The serpentine weir should have a drain for channel clean out. The existing concrete channel shall be by others.

4.04 UV Lamp Module Supports:

~~Each lamp module shall be supported by a metal support structure.~~
~~The UV lamp modules shall be installed in the concrete channel.~~
 The UV lamp modules shall be supported at each end by openings designed to firmly hold each lamp in a specific location relative to each other lamp throughout the lamp battery. This spacing shall not exceed 3" horizontally and vertically, within each lamp bank.

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4.05 UV Lamp Module Assemblies:

~~This UV system upgrade shall consist of the following:~~ Each UV lamp module shall be completely field serviceable and shall be fitted with a new waterproof UL recognized multi-pin wiring connector. The connector shall allow each module to be disconnected from the ballast enclosures and removed from the channel without disturbing other UV lamp modules or UV System operation. Each UV lamp module shall be protected by a ground fault circuit interrupter (GFCI). Lamp modules shall be designed to be easily removed for maintenance by plant operators.

4.06 UV Lamp Assembly:

Each UV lamp shall be protected from contact from wastewater by a 99.9% pure silicon dioxide, Type 214 quartz, protective jacket and gland nut seal assembly. ~~The UV lamp shall be protected from contact from wastewater by a 99.9% pure silicon dioxide, Type 214 quartz, protective jacket and gland nut seal assembly.~~

~~The UV lamp shall be protected from contact from wastewater by a 99.9% pure silicon dioxide, Type 214 quartz, protective jacket and gland nut seal assembly.~~ Quartz jackets shall allow a minimum of 90% transmittance through the jacket at 253.7 NM. All wiring exposed to UV light shall be protected with a non-degradable covering. Lamps that produce ozone shall not be allowed.

4.07 Ultraviolet Lamps:

~~The UV lamp shall be protected from contact from wastewater by a 99.9% pure silicon dioxide, Type 214 quartz, protective jacket and gland nut seal assembly.~~ Each lamp shall produce UV light with at least 90% of the UV emission at 253.7 nm wavelength. The UV system manufacturer shall warrant that the UV lamp output shall be no less than 65% of a new lamp after 8760 hours of operation (following a 100-hour burn in). LAMPS THAT ARE PROPRIETARY TO THE UV MANUFACTURER SHALL NOT BE ACCEPTABLE. Germicidal dosage calculations must be based upon the above output percentage and the EPA design manual.

4.08 Ballast Enclosures :

~~The UV lamp shall be protected from contact from wastewater by a 99.9% pure silicon dioxide, Type 214 quartz, protective jacket and gland nut seal assembly.~~ The ballast enclosures shall be stainless steel construction rated for outdoor use. The ballast enclosures are installed on the mounting platform. The ballast enclosures shall be fitted with a waterproof UL recognized 3 pole wiring connector. The connector shall allow the ballast enclosure to connect to a receptacle on the control panel. Ten (10) feet of cable between the ballast enclosure and the control panel

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shall be included. The power supply to each ballast enclosure shall be 120 VAC, 1 phase, 60 Hz (from control panel). The ballast enclosure shall utilize energy efficient electronic ballasts. An appropriate sized, replaceable fuse shall protect each ballast enclosure. Each ballast enclosure shall be provided with individual red LED lamps to provide an eye level visual indication of the operating status of each lamp. The components shall be arranged in the ballast enclosure such that failure of any component only requires the removal of the failed component.

4.10 Control Panel:

~~All electrical control components shall be housed in a remote enclosure.~~
The UL labeled enclosure shall be NEMA 4X, stainless steel construction. The power supply to the control panel shall be 120 VAC, 1 phase, 60 Hz, 20 amps (by others). The control panel shall have a non-resettable elapsed time indicator to help track lamp life in hours. The UV unit monitor shall be completely visible to the operator through a weatherproof, Lexan window and located in the control panel. All electrical components in the control panel shall be located directly behind a built-in, locking, swing-out panel. An appropriate sized, replaceable fuse shall protect the controls. The UV Control Panel shall be equipped with a Hand-off-Automatic Selector switch. In the Automatic Mode, the UV Control Panel shall receive a signal that will turn the lamps on (or off) and shall remain on for a minimum cycle time. The minimum lamp cycle time shall be controlled by a timer located in the UV Control Panel. The control panel shall be equipped with an elapsed time indicator.

4.11 Ultraviolet Intensity Monitoring:

~~The UV intensity shall be measured (1) ultraviolet sensor shall be mounted to the germicidal lamp fixture of light fixture.~~
The sensors shall be designed to not utilize a filter and shall not degrade after prolonged exposure to UV light. The UV manufacturer shall provide the intensity sensor with 12' of cable and a UL listed connector that shall plug directly into the control panel.

4.12 UV Intensity Monitoring System:

~~The intensity measured by the UV sensor shall be shown on a LED bar graph.~~
Indicator lights located on the remote control panel shall signal a "safe", "low", "fail" and "failure alarm" intensity condition. The intensity monitor shall provide 3 (N.O.) dry contacts for remote monitoring. The 3

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contacts shall correspond with "safe", "low", and "failure alarm". If the intensity decreases to the "failure alarm" point, an alarm shall be triggered. The dry contact for the "failure alarm" shall have a 15-18 minute time-delay to avoid nuisance alarms. The intensity monitor shall be provided with a 4-20 milliamp intensity signal for remote monitoring (Wiring for remote monitoring or alarms (if required) by others). The intensity monitor shall be equipped with a push to test circuit that shall be used to test the LCD bar graph and the photocell.

5.00 SPARE PARTS:

The following spare parts shall be provided:

- (8) – UV Lamps
- (8) – Quartz Jackets
- (1) – Ballast Assembly
- (1) – UV Intensity Sensor
- (16) – Seal O-rings

6.00 FIELD SERVICE:

There shall be provided two days of service for inspection, testing the electrical system of the UV, startup and instruction to plant personnel in its operation. The field service shall be performed by rep firm.

7.00 OPERATOR KIT:

- (1) – Ultraviolet Face Shields
- (1) – Rubber Gloves
- (1) – Scotch Brite™
- (1) – UV Warning Signs
- (14) – Pounds of dry Citric Cleaning Powder

8.00 NOTES ABOUT INSTALLATION:

The UV system shall require a minimum of labor to install. The contractor/owner shall provide the following:

- Provide power, 120V, single phase, 10 amp, to each control panel.
- Installation of each control panel.

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- Installation of channel connections.
- Installation of the lamps and jackets.
- Installation of the Ballast Enclosure Mounting Platform(s).
- Installation of a level concrete pad for channel assembly.

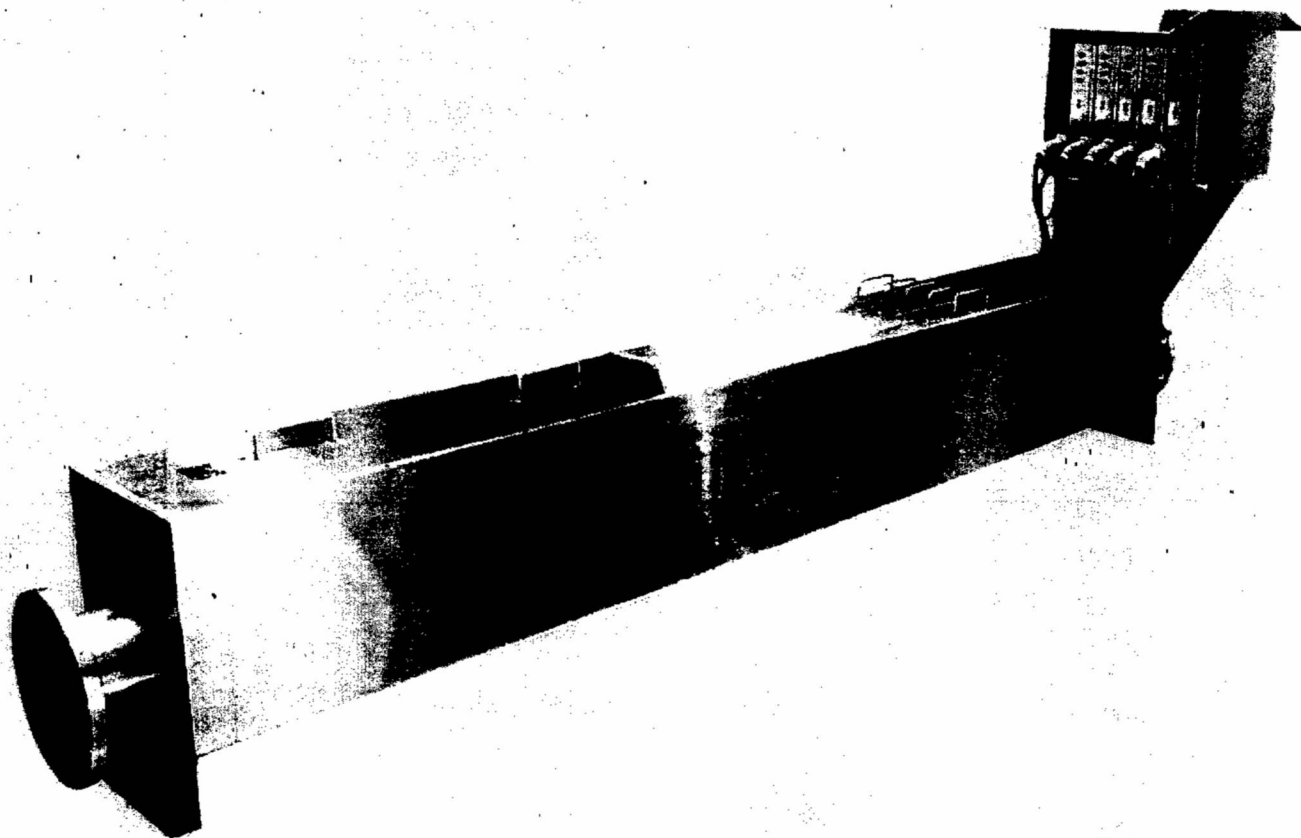
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Aquaray™ HLS UV Disinfection System



Infilco Degremont, Inc. announces the addition of the Aquaray HLS Horizontal Open Channel UV Disinfection System. The new Aquaray HLS systems are designed to provide low cost disinfection of wastewater for treatment plants with flows up to 4 MGD. The Aquaray HLS system is easy to operate and requires minimal maintenance.

The Aquaray HLS system features:

- Ultra Lightweight UV Lamp Modules
- Energy Efficient Electronic Ballasts
- UL Labeled Stainless Steel Ballast Enclosures
- UL Labeled Compact Controls
- Easy To Use Modular Design

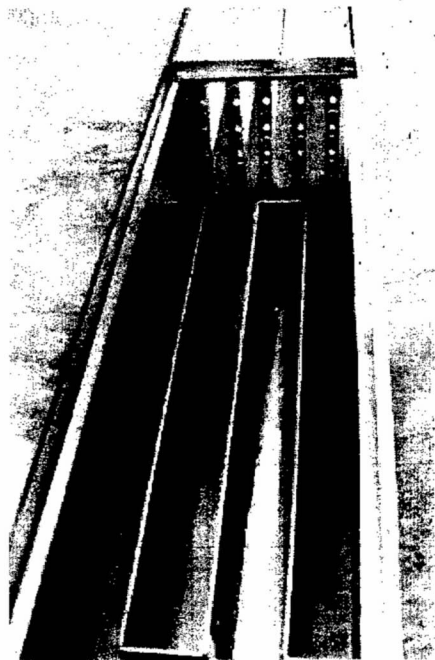
Aquaray HLS designs are available in a variety of configurations including layouts for:

- Packaged, self-supporting channels for above ground installations
- Channel liners for below grade concrete channels
- Open channels for cost savings on larger applications

UV Channel

Each UV channel is constructed of stainless steel and consists of:

- Support racks for the UV lamp modules
- Platform for local installation of ballast enclosures
- Internal level control weir
- Inlet and outlet connections
- Drain for channel clean out



The lamp modules are positioned in the channel in a uniform array and the weirs provide reliable level control for optimum disinfection.

UV Lamp Modules

Infilco Degremont's UV lamp modules are ultra lightweight and easy to handle, allowing the plant operators to perform routine maintenance on the UV system without the need for special lifting devices.



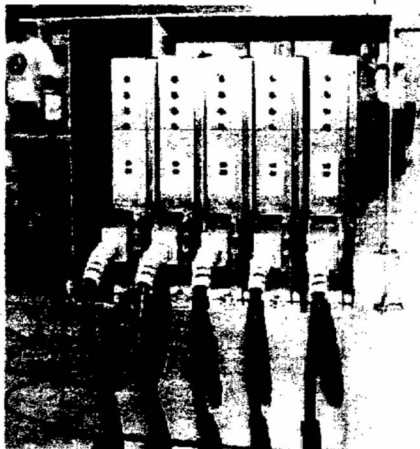
The ultra-lightweight modules are easy to handle for maintenance and cleaning.

The UV lamp modules are the backbone of the system. They are submersed in the channel and they position the UV lamps in an array for efficient UV disinfection.

UV lamp modules are available in 2,4,6 and 8 lamp configurations, weighing between 12-24 pounds. Lamp modules with 6 and 8 lamps are recommended for systems with flows above 2 MGD.

Ballast Enclosures

Ballast enclosures feature energy efficient electronic ballasts in a UL labeled stainless steel enclosure. Ballast enclosures provide power to the UV lamp modules, utilizing one ballast enclosure per UV lamp module, making it completely



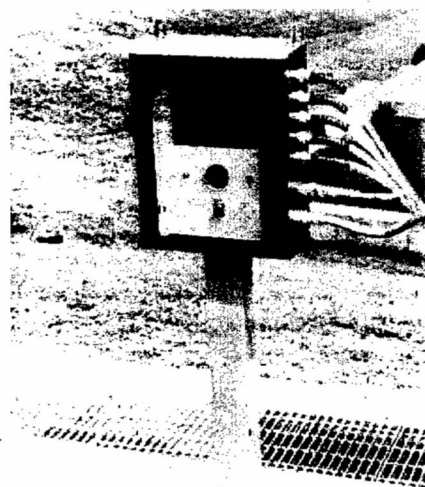
The UL labeled ballast enclosures are stainless steel and provide power for each UV module.

modular. Each UV lamp module connects to each ballast enclosure with a waterproof UL recognized multi-pin wiring connector. Each ballast enclosure is provided with individual LED lamps to provide an eye level visual indication of the operating status of each lamp.

Control Panel

A control panel is provided with every system and is UL labeled NEMA 4X rated for outdoor use. The control panel has an easy to read display and is provided with the following:

- UV intensity sensor that responds to the germicidal portion of light generated within the UV channel



An optional pedestal is available for mounting the control panel near the UV channel.

- Non-resettable hour elapsed time indicator
- 4-20 mA output signal for remote monitoring of UV intensity
- Three dry contacts that correspond to "safe", "low" and "failure alarm" UV intensity levels for remote alarms

Optional Accessories

- Stainless Steel Cleaning Rack
- Control Panel Mounting Pedestal
- Flow Pacing
- Inlet/Outlet Flanges

UV System Sizing Parameters

In order to properly size your UV disinfection system, the following information is required:

- Permit peak and average flow rates
- Permit TSS (Total Suspended Solids)
- Discharge permit level for fecal coliform, total coliform, e-coli, etc...
- State or country where UV system will be installed (power requirements)
- System duplication required?

For detailed information on the Aquaray HLS system, please contact Steve Gray at 800-446-1150 ext. 7610, direct dial (804) 756-7610, fax (804) 756-7643, or e-mail stephen.gray@infilcodegremont.com

Permission is hereby granted to: Westinghouse Savannah River Co.
P.O. Box 616
Aiken, S.C.

for the construction of a wastewater treatment system in accordance with the construction plans, specifications, engineering report and Construction Permit Application signed by Wendle R. Snapp, Registered Professional Engineer, S. C. Registration Number: 9268.

Project Name: SRS Central Sanitary Wastewater Treatment Facility County: Aiken

Project Description: (See Attachment)

The wastewater will be discharged to outfall G-10 (SC0044903) at a daily rate not to exceed 1,050,000 gallons per day.

The effluent concentrations of those constituents the treatment system which will receive the wastewater is designed to remove or reduce are contained in NPDES Permit #SC0044903, Outfall G-10.

Treatment Plant Classification: Group III - Biological.

Special Conditions: (See Attachment)

Permit Number: 17,679-IW Date of Issue: May 23, 1994

Expiration Dates: Unless construction begins prior to May 23, 1995
and construction is completed prior to May 23, 1996
this permit will expire.

In accepting this permit, the owner agrees to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection.

THIS IS A PERMIT FOR CONSTRUCTION ONLY AND DOES NOT CONSTITUTE STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL APPROVAL, TEMPORARY OR OTHERWISE, TO PLACE THIS SYSTEM IN OPERATION.

Bureau of Water Pollution Control

SPECIAL CONDITIONS

1. The permittee shall maintain at the permitted facility a complete Operations and Maintenance Manual for the waste treatment system. The manual shall be made available for on-site review during normal working hours. The manual shall contain operation and maintenance instructions for all equipment and appurtenances associated with the waste treatment system. The manual shall contain a general description of the treatment process(es), operating characteristics that will produce maximum treatment efficiency and corrective action to be taken should operating difficulties be encountered.
2. During treatment system operation, the permittee shall provide for the performance of routine daily treatment plant inspections by a certified operator of the appropriate grade. The inspections shall include, but are not limited to, areas which require a visual observation to determine efficient operations and for which immediate corrective measures can be taken using the O & M manual as a guide. All inspections shall be recorded and shall include the date, time and name of person making the inspection, corrective measures taken, and routine equipment maintenance, repair, or replacement performed. The permittee shall maintain all records of inspections at the permitted facility and the records shall be made available for on-site review during normal working hours.
3. All sludges, waste oil and solid and hazardous waste shall be properly disposed of in accordance with the rules and regulations of the Bureau of Solid and Hazardous Waste Management.
4. The permittee shall either update the existing site Best Management Practice (BMP) Plan to include this facility or develop a BMP Plan specifically for this facility. The BMP Plan shall identify and suggest methods or practices to control the discharge of significant amounts of oils and the hazardous and toxic substances listed in 40 CFR, Part 117 and Tables II and III of Appendix D to 40 CFR, Part 122. The plan shall include a listing of all potential sources of spills or leaks of these materials, a method of containment, a description of training, inspection and security procedures, and emergency response measures to be taken in the event of a discharge to surface waters or plans and/or procedures which constitute an equivalent BMP. Sources of such discharges may include materials storage areas; in-plant transfer, process and materials handling areas; loading and unloading operations; plant site runoff; and sludge and disposal areas. The BMP plan shall be updated in accordance with good engineering practices, shall be documented in narrative form, and shall include any necessary plot plans, drawings, or maps. The BMP plan shall be maintained at the plant site and shall be available for inspection by Department personnel.

Project Description

1. Headworks structure:
 - a) Mechanically cleaned Bar Screen
 - b) Grit Removal System
 - c) Parshal Flume and Sampler
2. Dual compartment Equalization Basin totaling 525,000 gallons.
3. Two (2) Screw Pumps at 500 - 1,000 gpm each.
4. Splitter Box.
5. Three (3) 0.35 MGD Oxidation Ditches each with two (2) Brush Aerators and Intra-Channel clarifier.
6. An 8.3 MGD capacity ultra violet disinfection system.
7. A 6,000 gpm capacity cascade aeration channel.
8. Stilling basin with 90 degree V-notch weir and sampler, for metering and sampling effluent.
9. Approximately 900 linear feet of 24" outfall pipe with one (1) precast manhole and outfall structure.
10. One (1) 50,000 gal. capacity sludge thickening basin.
11. Four (4) sludge drying beds with plastic media (25'-6" x 50'-6" each) and 1,530 sq.ft. of paved and covered sludge drying area.
12. Standby Emergency Generator.
13. One (1) duplex 200 gpm submersible pump station; five (5) precast concrete manholes, approximately 620 linear feet of eight (8) inch gravity sewer collection system and associated service laterals internal to the plant.
14. One (1) sodium carbonate feed system consisting of a 500 gallon mixing tank with motorized mixer and a 5,000 gallon day tank.
15. One (1) polymer feed system.
16. Associated pumps, valving, piping and necessary appurtenances.