TELEPHONE CONVERSATION RECORD	Date: 1/9/02	Time:
Mail Control No.: N/A	**License No.:** 37-23341-01	**Docket No.:** 030-20934
Person Called: Glenn Roberts	**Organization:** Unitech Services	**Telephone Number:** 610-948-7886
Person Calling:		
Subject: Letter regarding test of water treatment system		
Summary: I called Glenn Roberts to inform him that we had reviewed their request and determined that no license amendment was required to perform the test as described in the letter dated December 19, 2001.		
Action Required/Taken:		
Signature: John R. McGrath JRM	**Date:** 1/9/02	

From: John McGrath
To: John Kinneman
Date: 12/21/01 3:04PM
Subject: Unitech

I looked at the letter from Glenn Roberts. I don't think they need an amendment for this. In comparing it to the previous test situation where we *did* issue an amendment. The last test involved processing all of the waste water output. This will just utilize a side stream. The last test involved using a rather large piece of equipment in another area of the facility, using hoses to move the waste water around. This test will be in either the tank room or the lamella room, i.e. not frequented by workers. The last test was for about 1 month. This will be for only 2-3 days. At the time of the last test, UniTech was seriously planning to use that equipment at the Royersford facility and would have required an amendment to the license to install the equipment permanently. This time they're testing equipment that would go into their Barnwell plant. Even if they were planning to install it at Royersford, it appears to be only a small part of the water treatment system, and not a completely new system as was envisioned by the last piece of equipment that was tested.

I left the pink folder on your desk if you want to do anything with it.

UniTech Services Group
A SUBSIDIARY OF UNIFIRST CORPORATION

RECEIVED
REGION 1
2001 DEC 26 AM 11: 19

AFFIDAVIT

December 19, 2001

Mr. John D. Kinneman, Chief
Nuclear Material Safety Branch
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Re: Request for Special Handling of Proprietary Information Pursuant to 10 CFR 2.790 of Information Contained in UniTech Letter dated December 19, 2001

Dear Mr. Kinneman:

In accordance with the provisions of 10 CFR 2.790, UniTech respectfully requests that the following information be withheld from public disclosure, including availability to the public while in the public document room and through Freedom of Information Act (FOIA) requests. The basis for this request is provided in 10 CFR 2.790(a)(4) in that the information contains confidential and privileged trade secrets, commercial or financial information. As required by paragraph (b)(1)(ii), the criteria contained in (b)(4) is specifically addressed and respectively numbered as follows:

i) Information is proprietary commercial property and has been held in confidence by UniTech and all parties and agents involved by executing written confidentiality agreements.

ii) The information, notably site-specific design, processes, and methods are normally held in confidence by UniTech, the rational basis being stated in iv) and v) below.

iii) By way of this affidavit, the information is transmitted to and received by the Commission in confidence.

iv) The information cited is not available in public sources and is of unique and proprietary nature.

v) Public disclosure of the information is likely to cause substantial harm to the competitive position of UniTech. The acquisition of this information represents a substantial financial investment and has required hundreds of person-hours of effort over several years time. The results of these efforts are unique and vital to the continuing competitive position of the company. Public disclosure of the information would provide an economic windfall to competitors, who are either unable or unwilling to invest in such effort, and who would gain the benefits of the company's expenditures at no cost. The results of the company's investment in time, personnel and material resources cannot be easily duplicated without substantial like efforts and expenditures. Additionally, disclosure would likely limit the ability of UniTech to recover its investment in this proprietary information.

Formerly UNS

295 Parker Street • P.O. Box 51957 • Springfield, MA 01151 • tel: (413)543-6911 • fax: (413)543-6989 • e-mail: usg@u1st.com • http://www.u1st.com

UniTech has provided the information to be held as proprietary in a separate document as suggested by (b)(1)(ii). Please consider the entire letter dated December 12, 2001 along with Attachment A to that letter as Proprietary Information. Please inform UniTech should the Commission be unable to honor this request.
+
aThank you for your assistance and consideration in this matter.

Sincerely,

UniTech Services Group, Inc.

Glenn Roberts
Health Physicist

December 19 2001

NOTARIAL SEAL
DAVID A. GIBBONS, Notary Public
Royersford Boro., Montgomery County
My Commission Expires Sept. 24, 2004

UniTech Services Group
A SUBSIDIARY OF UNIFIRST CORPORATION

December 19, 2001

Mr. John D. Kinneman, Chief
Nuclear Material Safety Branch
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Dear Mr. Kinneman:

Enclosed is information regarding a proposed test of filter technology at our Royersford, PA facility tentatively scheduled to begin on January 7, 2002.

The filters, pumps, associated piping, connections, sampling ports, and any other support equipment would be located in the existing WWTS area, either tank room or lamella/sludge drying room. I believe that all of the other technical information of interest is contained in the proposal letter dated December 12, 2001 or Attachment A to that letter.

Should the attached information be necessary to incorporate into UniTech's docket file, please consider the attached Affidavit requesting that the information be withheld from public disclosure. Please contact me should you have any questions or concerns regarding the attached information or other particulars of the proposed test. Thank you for your assistance.

Sincerely,

UniTech Services Group, Inc.

Glenn Roberts
Health Physicist

cc: Bob Umstead, Royersford Borough Manager
Mike Fuller, Manager, Health Physics and Engineering
Dan Neely, Plant Manager, RSO

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DIVERSIFIED TECHNOLOGIES SERVICES
DTS
INCORPORATED Quality Systems & Services for Waste Management

2680 Westcott Blvd
Knoxville, TN 37931-311

PHN 865-539-900
FAX 865-539-900
Email info@dts9000.co

December 12, 2001
P-947-DTS

Mr. Michael R. Fuller
Manager, Health Physics & Eng'g.
Unitech Services Group
295 Parker Street
PO Box 51957
Springfield, MA 01151

Subj: Proposal for Candle Filter

Dear Mike:

DTS is pleased to present this unsolicited proposal to demonstrate the Backwash Candle Filter (BCF™) that DTS recently added to its arsenal of water treatment products. This filter, developed as a pre-filter for RO, has been successfully used in a number of other applications requiring low micron filtration.

Backwash Candle Filter Overview

The BCF™ comes with a variety of micron rated elements (5-50 micron), which can be used with, or without pre-coating, depending on the application. Pre-coating permits the micron rating to be reduced to as low as 0.25 microns. Filter elements typically have a useful life of five to ten years.

The filter operates at ≤25 psig differential pressure. Because it is relatively compact, it should fit easily into the space available at your Royersford plant. Attachment A will provide you with further details about BCF™ design and operation.

Performance Test Goals

While this filter has been successfully tested at another non-nuclear laundry facility, DTS feels it is important to conduct our own performance testing on your specific waste waters before providing you with recommendations about sizing and installation. It is proposed that this testing be conducted using a single demonstration candle filter set up on a side stream from your laundry waste tanks. The testing, which would take two to three days, would have the following goals:

- Determine flux rate per unit area
- Determine best pre-coat material and loading level
- Efficacy of pre-coat system in meeting particulate effluent requirements
- Determine approximate life of pre-coat

If run times and filtration effectiveness meet the testing goals, the BCF™ would be offered as a replacement for the TUF™ in the ZERO™ system for the Barnwell plant. The key advantage of the BCF™, if operationally effective, is lower capital costs.

Performance Test Arrangements

The test could be conducted as soon as convenient in 2002. The test unit is currently being fabricated and will be tested at our facility later this month.

The unit will arrive at your facility in a B-25 box as clean equipment. (At the end of the demo, if contaminants exceed free release criteria, it may need to be returned to a DTS licensed facility as contaminated in the same container.)

The unit will operate off 110v 20A power receptacle, requiring no other utilities except service water for flushing at the completion of the testing.

Project Compensation

Although the total cost of equipment, test personnel and expenses are expected to be well over $10,000, we are requesting reimbursement from Unitech for only $5,000 and the shipping/handling costs for the equipment. If Unitech requests testing beyond the three days, the daily cost, including equipment and personnel, would be $850/day.

Mike, DTS appreciates the opportunity to make this proposal. We look forward to demonstrating the BCF™ filtration technology at your facility. If you have any questions or suggestions, please contact me at (865) 539-9000 Ext. 24 or dbrunsell@dts9000.com.

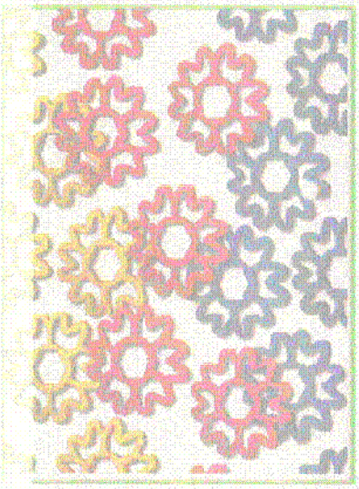
Sincerely,
DTS, Inc.

Dennis A. Brunsell
V.P., Technology

Attachment A – Candle Filter Info

Attachment A

BACKWASHABLE CANDLE FILTER (BCF™)



The Filter Media

It has always been a goal of the filtration industry to produce a filter media that is characterized by a high open area ratio. This parameter defines the ratio of a media's pore area as a percentage of the media's total surface area.

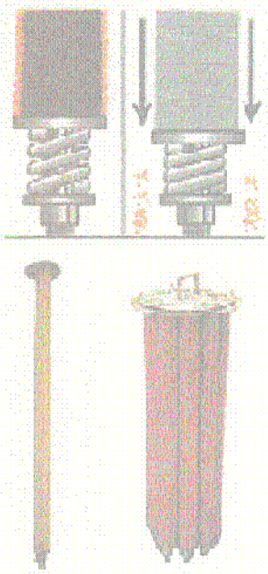
With the BCF™, this goal has been achieved. This filter not only offers a high open area ratio, but provides a permanent media with the ability to self-clean in seconds.

The BCF™ element is an arcaded-design thermoplastic wafer, with micro-grooves precisely etched on each of its arc surfaces (a 5-micron rated element has over 2,000 micro-grooves). These micro-grooves follow a distribution pattern allowing maximum use of the element's surface area

This filter also has integral element cavities that serve as fluid conduits, and a center hexagonal cavity that is used to stack the wafers in perfect alignment.

The Candles

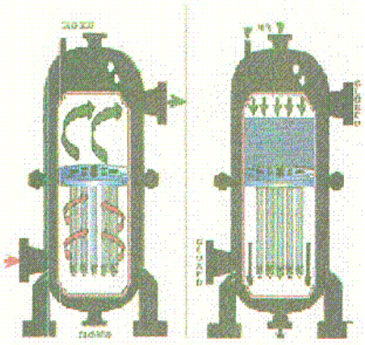
The BCF™ "candles" are the colums formed by stacking the wafers. The resulting candle assemblies consist of the stacked wafers, hexagonal support core, upper support plate, lower compression plate, seal plate, and compression spring.



The wafer stacks are precisely aligned by virtue of the hexagonal orientation between the wafer's center cavity and the hexogonal support core. The compression of the elements is achieved via a compression spring and the lower compression plate, with the spring serving a dual function, The spring 1) compresses the wafers to full surface contact, and 2) provides the flexibility that allows the separation of the wafers during the backwash/cleaning cycle.

Separation during backwash is achieved by hydraulic and mechanically applied forces. As the fluid flow reverses direction during cleaning, the resultant hydraulic force impacts the compression plate and causes greater spring compressison, thus momentarily releasing the compression of the wafer stacks and causing their separation. This action breaks up the filter cake and dislodges any particulate contaminant between the candle wafers.

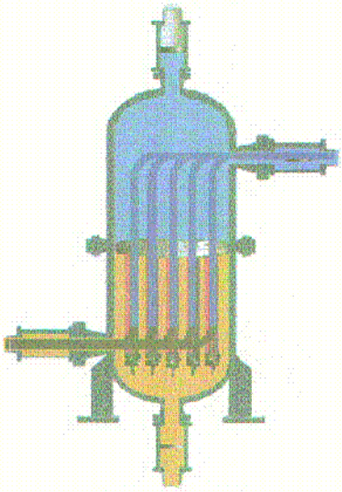
The BCF™ System



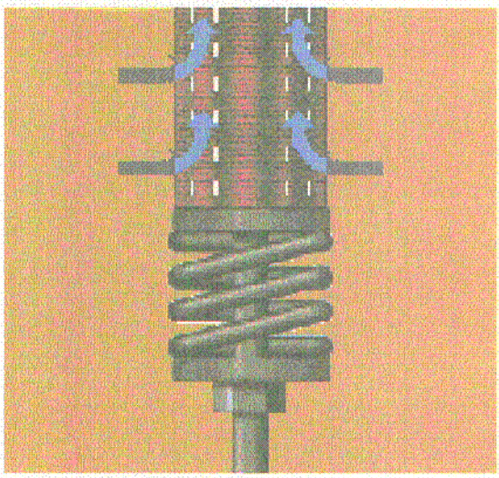
Depending on the application, the candles are grouped into vessels varying in numbers from a single candle to several hundred. Each candle is held in suspension from a support plate, referred to as a tube sheet. The candle assemblies are lowered and secured into the filter vessels, usually consisting of an upper and lower chamber.

Dirty fluid enters the filter vessel from the lower chamber, flowing radially across the filter elements, where filtration occurs. The fluid is then transported via the elements' integral conduits to the upper chamber, now as clean filtrate. The upper chamber also functions as a self-contained reservoir where a residual volume of the clean fluid is pressurized, using air. The pressurized fluid is then used to backwash and clean the filter. This evolution occurs in a matter of seconds.

The diagram on the left below shows the flow path through the filter vessel during normal filtration. The diagram on the right shows the flow path through the candle during the filtration cycle.

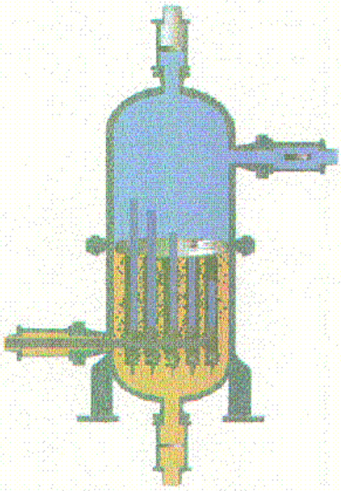


BCF™ PV
Filter Cycle

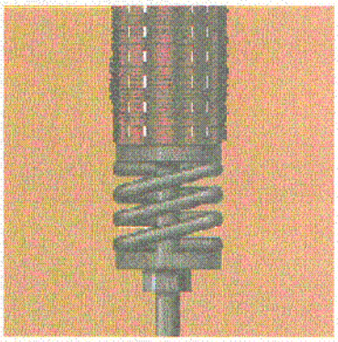


Individual Candle Compression End
Filter Cycle

The illustrations below show the candles accumulating solids during the filtration cycle. The filtration cycle can continue until the pressure drop either restricts flow excessively, or the potential of driving particulate into the pores is too high. This loading is highly dependent upon the types of solids in the feed stream.

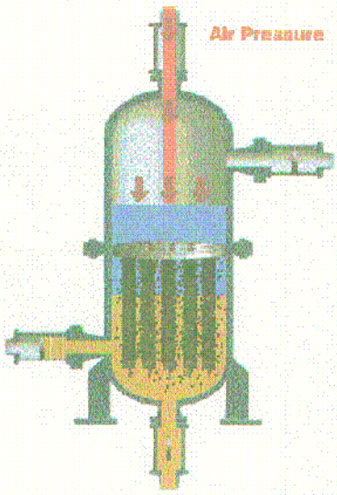


Solids in BCF™

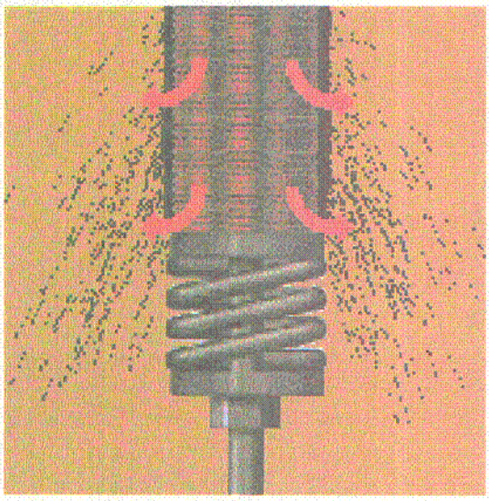


Solids Accumulated on Candle

BCF™ Backwash Cycle



Discharge of Solids from BCF™



Discharge of Solids from Candle