The upgrade has resulted in savings of $1.1 million per year in power, polymer and biosolids disposal costs by improving dewatering operational efficiencies at the WI WWTP. In addition, the upgrade increased the dewatering capacity at Ward’s Island WWTP by 50%, which allows the New York City Department of Environmental Protection to decommission a dewatering facility at one of its other WWTPs.

John Rogers
CDM Smith Associate Environmental Engineer

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Ed St. Peter
Kenosha Water Utility General Manager
The Centrisys/CNP Portfolio Supports Global Sustainability

1. **THK Series**
   - **Primary Sludge Thickener**
   - THK Series is designed specifically to achieve high performance thickening of biosolids. It is a modified dewatering centrifuge.
   - Proven no polymer performance
   - No conical + greater comparative capacity
   - Greater G-volume
   - Independent control of liquids and solids weir
   - Digester volume needs are cut in half by doubling the feed concentration
   - Proprietary hydro-pneumatic control of cake solids
   - "Also see information in #2.

2. **Passavant® hydrograv® adapt System**
   - Distributor for Aspesience Group GmbH
   - Passavant hydrograv adapt System is a variable inlet system that eliminates the need for filters.
   - Increase capacity of secondary clarifiers
   - Reduce total suspended solids (TSS) in clarifier effluent
   - Reduce total phosphorous in clarifier effluent
   - Achieve levels of phosphorus and COD comparable to sand filters, at a significantly lower cost
   - Continuous operation
   - Flexible sizing, material and equipment
   - Customizable for unique application requirements
   - "Also see information in #2.

3. **THK Series**
   - **Waste Activated Sludge (WAS) Thickener**
   - THK Series sludge thickener is simple to operate with minimal operator attention and has the lowest total cost of ownership in the industry.
   - 50% less power consumption (compared to standard dewatering centrifuges)
   - Proven no polymer required
   - Enclosed unit reducing odors and gases
   - Hygienic operation and safe for operators
   - Smallest and most efficient footprint
   - Reduce installation costs by 35-50% ($/gpm)
   - "Also see information in #2.

4. **PONDUS™**
   - **Thermo-Chemical Hydrolysis Process (TCHP)**
   - PONDUS, an alkaline process, uses low grade heat (140°F to 160°F) and sodium hydroxide for sludge hydrolysis.
   - No heat exchangers needed to cool sludge
   - No pressure vessel required
   - Saturated steam option for sludge above 7%
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5. **Liquid Container (Fermentation Tank)**
   - Distributor for LIPP America Tank Systems
   - Liquid Containers are for the storage and treatment of water and wastewater treatment liquids.
   - 10,000 to 2,600,000 gallons
   - Long operation life
   - Flexible sizing, material and equipment
   - Quick assembly with the double-seam system
   - Corrosion resistance with the "Verinox" stainless steel interior lining system

6. **CS Series**
   - **Pre-Digestion Dewatering Centrifuge**
   - CS Series Dewatering Centrifuge, the most efficient in the industry, is designed and built from what was learned in the field by servicing competitors equipment in both municipal and industrial applications.
   - The Rotodiff® hydraulic scroll drive – our standard backdrive technology from day one
   - Highest G-volume and torque capacity
   - Increase solids handling
   - Reduce polymer consumption
   - Continuous operation
   - Lowest installed horsepower
   - Driest cake
   - Customizable for unique application requirements
   - "Also see information in #11.

7. **CalPrex™**
   - Pre-Digestion P-Recovery as Brushite
   - CalPrex maintains a 6.5 pH, recovers phosphorus as a brushite crystal with up to 41% P₂O₅, and can minimize digester and sidestream P-loading by over 50%.
   - Over 60% solubilization of P in Bio-P sludge
   - Divert over 50% of the soluble P from the digester
   - Reduce up to 50% of the total P in biosolids
   - Reduce struvite build-up in the methane digester
   - No ammonium required

8. **KomBio Reactor (Methanogenic Digester)**
   - Distributor for LIPP America Tank Systems
   - KomBio Reactor is a patented digester with an integrated gas storage. The steel shell protects the integrated gas accumulator from UV-radiation and harsh weather conditions. The roof decreases the required heat output during winter.
   - 26,000 to 660,000 gallons
   - Low process energy consumption
   - Zero maintenance and long service life
   - Quick assembly with the double-seam system
   - Corrosion resistance with the "Verinox" stainless steel interior lining system
   - CHP-container design, available upon request

9. **MagPrex™**
   - Post-Digestion P-Recovery as Struvite
   - MagPrex is the most cost-effective solution, giving all sized plants the affordable option to control struvite and recover phosphorus. It expands the nutrient recovery focus beyond the production of struvite.
   - Reduce and stabilize nutrient loading in the return sidestream to the wastewater treatment line
   - Improve sludge dewaterability
   - Reduce polymer consumption up to 30%
   - Reduce maintenance up to 50%
   - No sodium hydroxide required
   - Reduce struvite precipitation by harvesting, sequestration or centrate recovery
   - "Also see information in #2.

10. **CS Series**
    - **Post-Digestion Dewatering Centrifuge**
    - CS Series can provide an ROI in as little as 1.5 years with a decrease in maintenance and operating costs.
    - Lowest measured energy consumption**
    - Reduce operating and maintenance costs
    - Reduce disposal costs
    - Highest torque to weight ratio
    - "Also see information in #2.

11. **DLT Series**
    - **Low-Temperature Belt Dryer**
    - DLT Series is a dual belt, low-temperature belt dryer that can reduce biosolids volume by a third and convert biosolids to Class A.
    - Reduce plant operating costs and carbon emissions by reusing waste heat
    - Increase safety with low-temperature and minimal dust within the dryer
    - Dried sludge in a granular form with a dryness level of 70-90%
    - Optimized air-system guarantees uniform drying

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**In one year’s time, the utility’s biosolids facilities were transformed to a state-of-the-art biosolids and energy showpiece. Complete cooperation of all project partners was integral to achieving success on this challenging project.**

Ed Nevers
Donohue & Associates Senior Vice President & Kinoshita Water Utility Project Manager
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Ed St. Peter
Kenosha Water Utility General Manager

Maximizing Efficiencies for Optimum Results
The Centrisys/CNP resource intensification portfolio is both an integrated process solution and/or an individual equipment approach to sludge and biosolids handling; leveraging proven technologies to provide viable alternatives to conventional treatment processes.

Ed St. Peter
Kenosha Water Utility General Manager

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Biosolids management today is faced with challenges that are matched by unprecedented opportunities. A key source of these opportunities is the expanded view of wastewater and solids as renewable resources.

Source: EPA

Discover more at Centrisys-CNP.com