

Brian H. Novak

Process/Application Engineer /Project Manager /Consultant

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Education:

BA/BS, Boston College
Post Graduate Studies, Electrical Engineering, Northeastern University
Certificate, Advanced Electrical Estimating Technologies, Electric Institute
Advanced Courses, Electrical Control Systems Design, Boston University

Licenses/Certifications:

Master Electrician, Massachusetts #A11291
Journeyman Electrician, Massachusetts #E25954
Licensed Teacher, Middle School-College. #209500
MCE Provider, Massachusetts MCE#15

Background:

Mr. Novak has over 25 years of experience developing, managing, designing and constructing large water and wastewater treatment, beneficial reuse and industrial projects nationwide. His expertise in the direct and indirect heat drying pelletization processes has been applied in numerous projects, and he invented and has a patent pending on a Heat Drying Pelletization System. The system incorporates a unique indirect dryer and closed loop process air system that recirculates all process air and treats it within the combustion chamber of the steam boiler for VOC destruction without the need for external post process thermal destruction equipment. Novak has developed and implemented training programs for operators and market sales and heat drying systems. His talents have also been used for troubleshooting and process adaptation, performing system analysis, due diligence and new technology integration and implementation. Mr. Novak has also consulted internationally with local government and private industry to develop and implement biosolids management programs. Mr. Novak has served as a technical expert for heat drying at symposia worldwide for the purpose of promoting beneficial reuse of biosolids. In addition, Mr. Novak has worked for various R&D entities to study the efficacy of combining multiple organic waste products into a reusable product as well as heat recovery, CHP and alternative fuels. Mr. Novak has served on a number of panels whose task was to study nitrogen and phosphorus runoff and its relationship to bacterial maladies in the Chesapeake Bay area.

Experience:

- 2012- present : International Biosolids Process Consultant, providing systems design, equipment selection, project evaluation and and project management and oversight.
- **2008-2012: Senior Application/Process Engineer**, Responsible for Biosolids systems process design, pricing, implementation and marketing support Siemens Water for both industrial and municipal clients.
- **2001-2008: Senior Technical Manager, Biosolids** Responsible for technical evaluation, operational evaluation and implementation of heat drying pelletization systems and projects nationwide. Provide technical resources to regional business developers and technical assistance to Veolia Water companies. During this period Mr. Novak served as Product

Manager for Thermal Drying at Siemens IWS specializing in the Sernagiotto Dryers and process.

- **2000-2001:** Served as Residual Manager for a large water/wastewater services provider. Managed and evaluated existing technologies with cost recommendations for capital improvements and operational efficiency reviews. Business development for water/wastewater privatization projects. Due diligence leader for technology evaluation, integration and acquisition. Trouble shooting and system redesign for Swiss Combi System. (Windsor, Ont.)
- **1998-2000:** Served as Principal Project Manager, Roy F. Weston, Inc. Senior project management responsibility for development of large-scale industrial projects, beneficial reuse projects, technical support to the water/wastewater business segment, proposal development and management, presentation development and delivery to public and private clients.
- **1995-1998:** Served as Vice President of Sales and Marketing, Kvaerner Eureka. Responsibilities included business development within the U.S. and Canada for the heat drying pelletization system (large-scale industrial manufacturing facilities) as well as design, construction and research and development, and cost estimating for a full range of environmental products and systems.
 - Design and construction for a \$1 million, 5-dtpd facility, which featured the Novak/Kvaerner Eureka indirect pelletization process.
 - Supervised design, installation and startup of a 10-dtpd, \$2 million facility utilizing the indirect pelletization process.
 - Performed a complete investigative analysis of the design and operation of a fluidized bed heat drying system.
 - Design and equipment selection for a \$2.3 million, 25-dtpd residuals plant for the City of Harrisburg, Pennsylvania.
 - Design and equipment selection for a merchant septage pretreatment and sludge pelletizing facility, featuring the Novak/Kvaerner Eureka indirect process.
 - Developed and implemented a training program for operators and marketers of the heat drying systems.
- **1986-1995:** Served as Director of Technical Services, Enviro-Gro Technologies. Managed the Sludge Pelletizer Division, including research and development, construction, startup, engineering and budgeting for a 34-person division. Performed due diligence, negotiation, integration and implementation of new residuals technologies under license or acquired by the firm. Performed the technical evaluation on the Swiss Combi process for applicability and implementation for the U.S. market, working in consort with the inventor of the process to ready the system for implementation and regulatory compliance in the U.S. Responsible for the design, construction supervision and startup of the following projects:
 - \$500,000, 0.5-dtph facility featuring a direct rotary ESP system process and spherical pellets (Mobile Demo Unit)
 - \$3.5 million 25 dt/d direct drying pelletization system (Hagerstown, Md.)
 - \$4.0 million 40 dt/d direct drying new and upgrade pelletization system. (Largo Fl.)
 - \$18.25 million wastewater treatment plant with a capacity of 150 dtpd and featuring an E-GT rotary process with spherical pellets (Boston, Ma.)
 - \$4.9 million, 60-dtpd facility featuring an E-GT rotary process with spherical pellets (Tampa, Fl.)
 - \$180 million, 300-dtpd facility, featuring an E-GT rotary process with spherical pellets (New York)

- Heat drying pelletization upgrades for a 50-dtpd facility (Cobb County, Ga.)
- **1978-1990:** President and Owner of Novak Electric, Inc. Specialized in electrical controls for the wastewater industry. Instructed journeyman and master licensees in electrical estimating techniques. Developed estimating programs.

Publications:

- **October 2010 Water Environment and Technology vol 22 no. 10**
Warming up to thermal dryers
- **May 2010 Water World**
Case Study: Convective thermal dryer system helps WRF save energy
- **2005 Residuals and Biosolids Management**
Direct vs. Indirect Drying

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The following is a list of projects in which I had a significant role and responsibility.

Pertinent Projects and Descriptions:

- *City of Chicago*, Responsible for the technical design, process oversight and process optimization for this 300 dry ton per day facility
- *City of Toronto*, Responsible for the technical and process oversight for the construction and startup of this 70 dry tonne per day facility
- *Milwaukee (MMSD) Milorganite*, Manager in charge of the transition from United Water to Veolia Water operations of the drying dewatering facility. In charge of optimization of Milorganite drying facility and process enhancements to reduce fuel consumption and increase productivity.
- *City of Corona, California*, Responsible for the technical and process oversight for the construction and startup of this 30 dry tonne per day facility
- *Kvaerner Eureka Plant, Norway*. Responsible for design and construction for this \$1 million, 5 dry tons/day facility. The plant featured the Novak/Kvaerner Eureka indirect pelletization process with 4mm spherical pellets. Privately financed, the facility is now fully operational.
- *Sondre Follo Sewer District, Norway*. Responsible for the 12 month design, installation supervision, and startup of this 10 dry tons/day, \$2 million facility featuring the Novak/Kvaerner Eureka indirect pelletization process. Jointly sponsored by the Norwegian Agricultural University and Sondre Follo, the privately financed facility is operational.
- *Yorkshire Water U.K.* Retained as a consultant to determine the cause of fuel overheating and fires occurring within their fluidized bed heat drying system. Performed a complete investigative analysis of the design and operations of the entire upstream and downstream process to determine the cause of the fires and to determine a cost effective solution.

- ***Shamokin Residuals Plant, Shamokin, PA.*** Responsible for design and equipment selection for this \$2.3 million, 25 dry tons/day plant. The project is being restructured as a public-private partnership with the City of Harrisburg whereby a 35 dry tons/day plant will serve the City and the merchant sludge loads envisioned in the Shamokin project.
- ***Pocono Grow Plant, E. Stroudsburg, PA.*** Responsible for design and equipment selection for this merchant septage-treatment and sludge-pelletizing facility, featuring the Novak/Kvaerner Eureka indirect process.
- ***Troubleshooting.*** Performed comprehensive analysis on three heat drying projects in the U.K. that were experiencing systemic and process related problems with respect to pellet production. Implemented design changes to improve productivity.
- ***Training.*** Developed and implemented a training program for operators and marketers of the heat drying systems. Developed operational protocol for the indirect heat drying systems in Hull and Gillingham Plants in the U.K. In addition to direct training for specific projects, I have presented a number of professional workshops to industry personnel to instruct engineers, operators and water treatment professionals in the differences of commercially available heat drying systems throughout the world.
- ***Process Development.*** Worked closely with the animal waste industry and potable water industry to develop a phosphorous binding product derived from multiple waste streams. The work involved pelletizing biosolids or chicken or swine manure with alum sludges produced at water treatment plants to create a fertilizer product that would bind the excess phosphorus and allow the plant the availability for slow uptake rather than allow excessive phosphorus runoff.
- ***Enviro-Gro Technologies Pilot Plant.*** Responsible for design and startup of the \$500,000, 0.5 dry tons/hour facility featuring a direct rotary ESP system process and spherical pellets. The project was privately financed, was completed in 3 months, and is currently operational.
- ***City of Tampa, FL, Wastewater Treatment Plant (WWTP).*** Responsible for design, construction supervision, and startup of the \$4.9 million WWTP. The facility's capacity is 60 dry tons/day, and features a rotary process with spherical pellets. The facility was financed by the City of Tampa and the U.S. Environmental Protection Agency (EPA), was completed in 12 months, and is fully operational.
- ***City of Largo, FL, Plant.*** Responsible for design, construction supervision, and startup of this 40 dry tons/day, \$4.0 million facility. Financed by the City of Largo, the facility features an ESP rotary process with spherical pellets. The project was completed in 12 months, and is fully operational.
- ***Massachusetts Water Resources Authority's NEFCO Plant, Quincy, MA.*** Initially hired to design and install the electrical control system for the demonstration unit that was to be used to prove the proposed technology for the full-scale project. Successfully installed and operated the demonstration unit. Performed a number of upgrades and system changes to create greater efficiency and improve product delivery. After completion of the demonstration phase, I was

retained by EGT to head the Technical Services Division and was responsible for design, construction supervision, and startup of this privately financed, \$18.25 million facility. The facility has a capacity of 150 dry tons/day, and features an EGT rotary process with spherical pellets. The project was completed in 14 months, and the facility is fully operational.

- ***Town of Hagerstown, MD, Plant.*** Responsible for design, construction supervision, and startup of this 25 dry tons/day, \$3.5 million facility. Financed by the Town of Hagerstown, this facility featured an EGT rotary process with spherical pellets. The project was completed in 6 months and is fully operational.
- ***NYOFCO, Bronx, NY Plant.*** Responsible for design and equipment purchase for this \$180 million facility with a capacity of 300 dry tons/day. This privately financed facility featured an EGT rotary process. The design and construction project was completed in 18 months, and the facility is fully operational.
- ***Cobb County, Ga.*** Responsible for the design, construction and startup of the heat drying pelletization upgrades for the 50 dry ton per day facility.
- ***Troubleshooting.*** Responsible for determining cause and solution to any process and/or systemic upsets experienced by any of the facilities under construction or in operations.
- ***Process Adaptation.*** Responsible for the due diligence, negotiation, integration and implementation of new residuals technologies under license or acquired by the company. Performed the technical evaluation on the Swiss Combi process for applicability and implementation for the U.S. market. Worked in consort with the inventor of the Swiss Combi Process to ready the system for implementation and regulatory compliance in the U.S.
- ***Windsor, Ontario.*** Optimized and system trouble shooting for this 25 dt/d Swiss Combi process. Worked on process redesign and product enhancement to better process varying sludge consistencies.