

Solid Waste Processing

Editor: Tom White, P.E.

Summer 2007



MESSAGE FROM THE CHAIR

by Peter A. Napoli

It Is Time For Action.

Much has changed since I joined the waste-to-energy (WTE) industry in 1998. At that

time, we were in the process of completing the last of the APC retrofits with no other significant activity on the horizon leaving us in a “stagnant operating condition,” basically in limbo.

September 11th and subsequent world events, (that continue to unfold), have significantly altered the world’s energy situation and changed the picture dramatically. Not the least of which are (in any order of priority you choose to select): the price and supply of oil and gasoline, public clamor and government posturing for the development of non-polluting alternative energy sources, court decisions on “New-Source Review” and “Flow Control,” and last but not least, “Global Warming” as presented by Al Gore during his reincarnation as an Oscar winning Hollywood star.

With ethanol plants, wind farms, and other alternative energy sources becoming the darlings of the media and our politicians (in addition to obtaining substantial federal tax credits), where are we? Why are we not at the forefront or at least a major part of the national discussion? Why is our successful track record of safety, environmental responsibility, and reliable generation of low cost electricity being ignored?

The answers to these and other questions are varied and somewhat complicated, but

one thing stands out that I recently discovered in discussions with my friends, neighbors and acquaintances outside of the industry. Most of them do not even know we exist or have forgotten about us! They don’t know the factual evidence about us and when they are informed, they question why there are not more facilities and why we are not part of the national discourse. Think about that for a minute or two! (Or more if you so desire!)

OK, so where am I going with this? We in the WTE industry have to ask ourselves this question: Do we want to continue to fly “under the radar screen” and hopefully (and the operative word here is “hopefully” because we are at the mercy of elected officials pandering to the media and public), maybe get included in alternative energy legislation clandestinely, or do we want to “Do An Al Gore” and re-introduce ourselves to the media, public and our governing officials, with a positive message promoting WTE as a major contributor to addressing our nation’s energy challenges as a safe and environmentally responsible partner.

During the coming months, we will be initiating discussions with the three major WTE companies, our NAWTEC partners, selected municipal facility operators and authorities, and any other persons or organizations that desire to participate to answer the above question and determine a course of action. We will keep you informed of these activities and if you have any thoughts, ideas or wish to participate, please contact me via e-mail. peter.a.napoli@verizon.net. ♦

MESSAGE FROM THE CHAIR.....	1
WORKING TOGETHER	2
PTC 34 UPDATE	2
MEMBERSHIP COMMITTEE REPORT	2
QRO COMMITTEE NEWS	2
2007 ASME HONORS & AWARDS CEREMONY	5

WORKING TOGETHER

by Sherman "Pat" Patton

The waste-to-energy business appears to be making a comeback after several years of facility closings and no greenfield plants being constructed in over 10 years.

Several facilities have or are in the process of expanding. Many facilities that were originally "designed" to sustain a 20-year contract, in conjunction with their power purchase agreement and financing, are extending their operating contracts another 20 years. The power industry has long gotten used to having their facilities operate 40 years or more, but we in the waste-to-energy arena are treading new ground.

Where once there were 10 or so companies operating facilities, now there are

three major players. Each has its own operating style and forte. However, the time to share critical safety and operation information on a timely basis is now. Most facilities have employees that worked for their competitors or they have acquaintances in the business. Therefore, there are very few secrets and the word of accidents and major equipment failures spread rapidly. What is important is the right information needs to be distributed correctly and promptly to all operators to help prevent personal injury and major equipment accidents.

Several years ago there was a rash of spray dryer absorber (SDA) cone failures. It was determined there was a common corrosion failure occurring and operators

were advised to perform ultrasonic and visual examination of the SDAs. High metal wastage was observed in select areas of all the SDAs tested, regardless of their manufacturer, type of atomization, or design. One operator described their vessel walls as "Swiss cheese." In the past year, there have been casing side tube failures, conveyor accidents, and tipping floor accidents resulting in personal injury or death. What is tragic are the many accidents occurring to untrained temporary employees hired through an agency, and therefore, as contractors, these incidents don't even hit the books on the facility's OSHA records.

The ASME-SWPD needs your input on issues relative to our industry whether it is regulatory, operational, or safety related. If you have comments or suggestions, please contact me at ppatton@pirnie.com ◆

PTC 34 UPDATE

by Len Grillo, PE

The ASME Performance Test Code 34 (PTC 34), *Waste Combustors with Energy Recovery*, is now complete and has been approved by the PTC 34 Committee as well as ASME's Performance Test Codes Standards Committee. The Code is now in publication and is expected to become available by early December, 2007. The Committee began working on the Code in 1988. ◆

MEMBERSHIP COMMITTEE REPORT

By Shawn Worster

In the ASME, 285 members have indicated primary interest in the Solid Waste Processing Division (SWPD). Another 1,902 ASME members noted lesser (but some) interest in the SWPD. However, in the past year, we have signed up only two new members. A review of our membership shows the average age to be over 50. As with any organization, our sustainability is directly linked to our ability to attract new members at all stages of their career. One approach that could work wonders is for each of you to reach out within your circle of contacts to identify and recruit

just one new member. Think of what membership in SWPD has meant to you, the friends you have made, and the knowledge you have gained. Helping mentor junior staff is one of our profession's great rewards. What better way to help a young professional grow. Please let them know about the benefits of membership in the Solid Waste Processing Division. If you need any additional information or have any questions, please email Shawn.Worster@hdrinc.com

Have a great year! ◆

QRO COMMITTEE NEWS

Committee to Examine Problems with the QRO Standard

by John W. Norton, PE, DEE

Present QRO Standards, as administered, are causing serious problems to many system operators. Some of the major operating firms have indicated to the QRO Committee (through the SWPD) that the QRO examinations are too cum-

bersome, expensive, and (in some features) "miss the mark."

The QRO Subcommittee is justly proud of their standard for several reasons, not the least of which is that Congress cited it by name in the Nation's Clean Air Act

Amendments of 1992 (CAAA). It is a difficult standard to achieve.

However, a serious threat to the continued use of the standard is growing. 15 of the 90 operating plants in the United States have chosen to use a different

standard to demonstrate the knowledge and ability of their plant operators. The CAAA specified that "other State promulgated standards similar to" the QRO Standard could be used for this operator certification process. Waste-to-Energy plants are already using such alternate standards and testing methods to certify their operator qualifications.

Virginia, Connecticut, and Minnesota have standards which are not necessarily "easier" to pass, but are easier to manage, and thus much less expensive to the operating plants. The present QRO Standard has some awkward features that USEPA did not necessarily mean to impose, which cause the QRO to be an expensive requirement for WTE plants.

Here are five issues under consideration by the QRO:

1. QRO Certification Retention

It is difficult to retain certification, once achieved for a variety of reasons: a) temporary military service, b) temporary absence from the WTE field (even to a fairly closely related field, like NG cogeneration), c) loss of a direct connection to one operating plant (even if this loss comes from taking overall responsibility for operations at several plants).

2. Change in Technology

a) a certified operator cannot move to a slightly different WTE plant, even within his own company without being recertified by the QRO process at the new plant site (a process costing tens of thousands of dollars for on-site, field testing by ASME and substantial overtime to cover the operator position at both plants while

recertifying), b) if a plant changes technology even slightly, recertification of key staff by QRO is required, c) no other field requires this level of certification precision or field focus (not water treatment, not wastewater treatment, not...) In fact, the case could be made that the public would be safer if its WTE operators understood not only the plant they ran, but the neighbor's plant or the competition's plant, as well.

3. Certification Preparation Text (lack of)

a) the present bank of 281 QRO test questions for the written part of the certification examination have 54 different citations for authentication of the answer. If one reads several of the cited texts, he may find differing opinions regarding many WTE issues, b) the bank of questions is available for review by only a small subset of QRO Subcommittee members, it is not even available for review by other members of the QRO Committee.

4. Field Examiner Qualifications

a) the QRO Standard for Field Examiners requires that Shift Supervisor or Chief Operator candidates be field tested by a person qualified in the similar specific position (however, ASME has found it difficult to adhere to this requirement and has not made tester resumes available for review by the QRO Committee Members).

5. Missing USEPA's Intent for Certification

a) USEPA intent for plant operator certification was to assure that WTE plants were operated in an environmentally clean and safe manner by quality-certified operators, while several candidates have failed QRO exams (both the provisional written exams and the oral field exams) because they did not understand electric or steam power generation, not because they failed to understand the nature of trash and its combustion, b) it can be argued that there should be no questions about power generation on the QRO certification exam unless they have direct applicability to shutting down a plant when it is operating out of acceptable environmental bounds. The test might logically include questions regarding such things as boiler tube wastage that directly results from the nature of garbage combustion, but it should not include any examination of issues that a normal boiler operator license would require.

A separate committee has been formed consisting of Jay Lehr – Veolia, Tom Maillet – Wheelabrator, Peter Napoli – Martin Conveyor Division, John Norton – Norton Engineering, and Joe Vengen – Covanta, to discuss these issues, formulate recommendations and present them to the QRO Certification Board at its fall meeting. The committee met for the first time on July 10th and the recommendation process has begun.

Anyone with QRO questions or interest in being a member of this QRO certification process as a committee member, or field testing designee, should e-mail John Norton at jnortons@aol.com

or call (937) 223-5848. New test questions for the QRO question bank, with citations of authority (i.e. textbooks, peer reviewed papers, etc.), are always welcome for consideration.

John W. Norton, PE, DEE
Norton Engineering, LLC ◆

16th Annual North American Waste-to-Energy Conference (NAWTEC 16)

Call for Papers & Presentations!

May 19-21, 2008 - Philadelphia, PA
City Center Sheraton



Don't miss this unique opportunity to reach the largest specialty group of professionals in North America dealing with municipal waste-to-energy, combustion engineering science, and emerging waste conversion & processing technologies.



Abstracts are requested on the following topics:

- U.S. & International WTE Facility Case Studies
- Approaches to Improving Public Perceptions of Waste Combustion
- Economics, Creative Financing & Revenue Generation
- New Thermal Treatment & Waste Combustion Technologies
- Expanding WTE Capacity: Models for WTE Project Development
- Retrofits, Plant Upgrades, & Maintenance Issues
- Managing & Streamlining Plant Operations
- Developing and Renegotiating WTE contracts
- Renewable Energy Credits (RECs) and Marketing WTE as Green Power
- Tax Credits, Energy Legislation & the Politics of Waste-to-Energy
- Air Emissions & Advances in Pollution Control Systems
- Combustion Science and Engineering Concepts

ABSTRACT SUBMITTAL DEADLINE

September 21, 2007

Please submit abstracts on-line at www.nawtec.org.

Any questions—Please contact Shannon Crawford, SWANA Technical Programs Coordinator at scrawford@swana.org or 240.494.2241

SUBMITTAL GUIDELINES:

Preference will be given to papers that address:

(1) Actual plant operations and experience highlighting problems and solutions; (2) New technologies being implemented or tested; (3) Innovative management practices; and (4) Applied research.

Only one presenter per paper is permitted, unless otherwise arranged. Abstracts should be 500 words or less and should include the topic description, a summary of the data to be presented, and identification of key conclusions. All abstracts and papers submitted must be original in nature, not having been presented or published elsewhere. Please include contact information on the abstract and all transmittal materials, as well as a short biography of the presenter highlighting career and presentation experience.

2007 ASME HONORS & AWARDS CEREMONY

Monday, May 21, 2007

15th North American Waste-to-Energy Conference Miami, Florida

The following individuals and facilities were recognized by the ASME Solid Waste Processing Division for their significant contributions to the field of solid waste processing:

DISTINGUISHED SERVICE AWARD: ANTHONY LICATA

DISTINGUISHED SERVICE AWARD: CHARLES O. VELZY

MEDAL OF ACHIEVEMENT: ANTHONY J. ORLANDO

Category: Large Combustion Facility
YORK RESOURCE RECOVERY CENTER, PA

Honorable Mention:
SOUTHEAST RESOURCE RECOVERY FACILITY (SERRF), CA
SEMASS RRF, MA

Category: Small Combustion Facility
MACARTHUR RESOURCE RECOVERY FACILITY, NY

DISTINGUISHED SERVICE AWARD



ANTHONY LICATA

Anthony Licata is one of the true pioneers of air pollution measurement and control. His work as an air pollution regulator predated the Clean Air Act by a

decade. As president of York Environmental, he was instrumental in developing advance pollution measurement methods for the U.S. Environmental Protection Agency, as well as developing air pollution control equipment to meet the new demands of the Clean Air Act. As chairman of the ASME Air Pollution Control and Solid Waste Processing Divisions, he assured that the ASME was a major partner with the EPA and industry. During the 1980's, Licata chaired the ASME Dioxin Committee mobilizing many people and resources to solve the combustion dioxin problem. The results were 99% reduction of dioxins from municipal waste combustors. Anthony Licata's dedicated service to the ASME has been unmatched by all but a few. His accomplishments in the environmental, power and waste to energy industries had positive impacts on many and enabled significant improvements for the environment we all share.

Westchester College, SUNY - AS; 1964 Construction Engineering
Babcock Borsig Power & Marketing Manager

DISTINGUISHED SERVICE AWARD



CHARLES O. VELZY, P.E., DEE,

consultant (White Haven, Pa.), for more than three decades of outstanding service to the ASME Solid Waste Processing Division

through leadership in and contributions to its growth, activity, vitality, operation and objectives.

Over a career spanning more than four decades, Velzy has played an outstanding role in the field of beneficial use of the energy from the combustion of solid waste, including contributing significantly through ASME service. After serving as an instructor in the civil engineering department of the University of Illinois at Urbana-Champaign, Velzy joined the staff of Nussbaumer, Clarke and Velzy in 1959 and worked on the design of wastewater treatment facilities and various incinerator projects. When Charles R. Velzy Associates, Inc., was established in 1966, he was elected a member of the board of directors and served as secretary-treasurer. He assumed the position of president in 1976, a position he held until his retirement in 1992.

Velzy has made outstanding contributions beginning in the 1960s, when he provided leadership in identifying the causes/ mechanism of boiler tube metal wastage in waste-fired combustors. Drawing on the experience of European plant operators in dealing with this problem, Velzy designed

a plant retrofit that was successful. In the early 1970s, Velzy, acting for the ASME Solid Waste Processing Division (SWPD), reviewed the Environmental Protection Agency's proposed New Source Performance Standards for control of stack emissions from solid waste combustors and presented his findings at a public meeting. As a result of this effort, the standards and some of the proposed testing methods were modified. After dioxin was discovered in energy-from-waste plant stack emissions in the 1980s, Velzy chaired an ASME SWPD committee that commissioned a study and report by A.D. Little on the current state of knowledge related to this extremely toxic pollutant. He has participated extensively in efforts to effectively control these emissions through numerous presentations at technical meetings in the United States and by playing a leading role in World Health Organization meetings in Europe and South America. He also chaired an American National Standards Institute Committee on Incineration and served as an officer of committees on the control of air pollution for the International Standards Organization and the American Society of Testing Materials.

Although he retired in 1992, Velzy continues to provide services as an individual consultant and in association involvement. He is chair of an ASME Peer Review Committee (1996-to date) that was retained by the U.S. Department of Energy to review its projects to develop innovative processes to be used in remediation of nuclear waste at its nuclear processing facilities.

Velzy's expertise is evident within ASME by his election to the chair position (1973-

74) in the SWPD (then named the Incinerator Division); his key role in the formation of ASME's Research Committee on Industrial and Municipal Waste; and his leadership of an initiative within ASME Codes and Standards to develop a process for testing and certification of energy-from-waste plant operators. In 2005, the ASME Board of Governors elected Velzy as Honorary Member in recognition of a lifetime of service to engineering or related fields. A Fellow of ASME, his extensive record of service includes ASME president (1989-90), chair (1966-67) of the Instrumentation Subcommittee of the ASME Incinerator Division, and leadership positions on the Council on Engineering and the Policy Board Industry Department. He received ASME's Centennial Medallion (1980) and Dedicated Service Award (1986), and was the first recipient of the ASME SWPD's Medal of Achievement (1982).

Velzy received three degrees at the University of Illinois at Urbana-Champaign: a bachelor's in mechanical engineering in 1953, a master's in sanitary engineering in 1959 and a bachelor's in civil engineering in 1960. He is a registered professional engineer in 11 states.

MEDAL OF ACHIEVEMENT AWARD



ANTHONY J. ORLANDO

Anthony J. Orlando is president, chief executive officer, and board member of Covanta Holding Corporation. He was elected to his current position in

2004 and previously served as president and chief executive officer of Covanta Energy Corporation, since November 2003. Prior to 2003, he served as senior vice president, responsible for the company's Waste-to-Energy Business unit.

Orlando joined Covanta in 1987 as a project manager and in 1993 was promoted to vice president, Project Management, a post he retained until 1995. During his eight years in the project management group, he oversaw the design and construction of the Company's two largest waste-to-energy facilities. In 1995 he became vice president, regional business manager. In 1996 he was promoted to the position of senior vice president, Waste-to-Energy Business Management. In this capacity, he oversaw all business aspects of the Company's

waste-to-energy facilities including client relations, asset management, and financial reporting. He then became head of the Company's Waste-to-Energy business unit in 1999. Currently, Orlando is president, CEO and board member of Covanta Holding Corporation which is listed on the New York Stock Exchange. Under Orlando's leadership, the company has experienced significant growth and was recently added to the Russell 1000 index signifying that it has become one of the largest companies in America.

Orlando earned a B.S. in civil engineering from Villanova University in Villanova, Pennsylvania, and an M.B.A. in finance from Seton Hall University in South Orange, New Jersey.

Orlando continues to support his community and has recently taken a position on the Craig Board of Trustees - a school dedicated to fostering a child's learning. Both in business and in his personal life Orlando continues to be tireless in his pursuit of excellence. We are confident that with his dedication and leadership the waste-to-energy business will continue to grow. ♦

2007 FACILITY RECOGNITION AWARDS

The following facilities have been selected to receive the 2007 Facility Recognition Awards based on the following criteria:

- Success in reaching facilities goals
- Innovative and technical contributions to solid waste processing
- Environmental performance
- Health and safety records at the facility
- Facility economics
- Their role in integrated waste management

CATEGORY: LARGE COMBUSTION FACILITY



Winner: York Resource Recovery Center, Pennsylvania

The York Resource Recovery Center is located in York, Pennsylvania and serves as a means of waste disposal for more than 400,000 residents of York County. The facility was constructed in 1989 for the

York County Solid Waste Authority. The facility was operated by Westinghouse until November 1988 at which time operational responsibility was transferred to the Montenay Power Corporation, a subsidiary of Veolia Environmental Services.

Innovative Contributions Include:

- Larger overfire air nozzles were engineered and installed opposite the combustor outlets, reducing carbon dioxide levels. Control has been such that the plant has not exceeded CO emission limit a single day since the new nozzles were placed into service.
- The plant installed an updated uninterruptible Power Supply and a diesel generator in an age of rolling blackouts and grid instability.
- Modified bottom ash drags raising them above floor level and converted to bot-

tom return eliminating the need for the large confined space sump and the hazard it created.

- Afterburner grates were upgraded resulting in only 15 total hours of downtime in 2006

CATEGORY: LARGE COMBUSTION FACILITY



Honorable Mention: Southeast Resource Recovery Facility (SERRF), Long Beach, California

SERRF is a 1,380 TPD waste-to-energy facility located on Terminal Island in Long Beach, California. The facility is owned by the City of Long Beach/LA County Sanitation District No. 2, and operated by Montenay Pacific Power Corp, a subsidiary of Veolia Environmental Services.

Most Recent Accomplishments:

- SERRF saved the equivalent of 10,378,000 barrels of oil, substituting solid waste as fuel for electrical generation.
- SERRF has exceeded its annual operating targets for tons processed, MWH sold in 2006. In addition the facility generated its highest peak season MWH sold since start-up in 1988.
- SERRF has been maintained to the level that no in-city waste was ever diverted or bypassed since the facility opened its gates.
- SERRF is also recycling electronic waste and is removing white goods at the front process in the tipping building. The facility also recovers ferrous and non-ferrous materials after the waste is processed through the boiler.
- SERRF process projection guarantees have been increased year after year. Current expectations have risen due to the

good operation to levels of 500,000 tons and 240,000 MWH per year without sacrificing the integrity of the plant equipment.

CATEGORY: LARGE COMBUSTION FACILITY



Honorable Mention: Southeast Resource Recovery Facility (SEMARRF), Rochester, Massachusetts

The SEMARRF Resource Recovery Facility converts municipal solid waste to steam and electricity, serving communities in Cape Cod, southeastern Massachusetts and the Boston area. The facility is located on a 95-acre site in Rochester, Massachusetts. Operated by Covanta, the facility is designed to receive MSW, magnetically separate and shred it to produce processed refuse fuel (PRF) which is fired in three (3) specially designed boilers.

Most Recent Accomplishments

- SEMARRF has demonstrated sustained high levels of key production metrics year after year. These include plant availability, solid waste throughput, power sales to the grid and metals reclamation (ferrous and non-ferrous).
- The SEMARRF RRF is an OSHA Voluntary Protection Program star site, which is the highest honor a facility can receive from OSHA.
- There is no municipal water supply available at the SEMARRF facility. Other water sources were created such as reusing and recycling stormwater. Landfill leachate and smaller volumes of other miscellaneous wastewaters are used to supplement the plant water requirements.
- SEMARRF has improved the life expectancy of boiler tubes from a low of 12 to 18 months to as high as 72 months through the use of improved materials of construction.

CATEGORY: SMALL COMBUSTION FACILITY



Winner: MacArthur Resource Recovery Facility, Islip, New York

The MacArthur Resource Recovery Facility is a municipal waste-to-energy facility located in the Town of Islip, NY, owned by the Islip Resource Recovery Agency and operated by Montenay Islip, a subsidiary of Veolia Environmental Services.

Most Recent Achievements and Innovative Contributions:

- Has met guaranteed minimum throughput of 146,000 tons per year of MSW. In 2006 the facility processed more than 171,000 tons of MSW.
- Montenay Islip, Inc. maintains both OSHA VPP Star Site recognition and ISO 14001 certification for its achievements in safety and environmental compliance.
- In 2001, NYSDEC revised allowable carbon monoxide levels in stack emissions. The O'Connor combustor was not designed to operate at the new level, requiring an innovative engineering solution. Modifications were made and the new system allows the facility to maintain much lower carbon monoxide levels without the use of the auxiliary natural gas burner.
- Developed and implemented a modification plan to reduce fugitive emissions due to positive boiler conditions.

The environmental performance of the facility is managed by the Environmental Management System in conjunction with the ISO 14001 program developed by Montenay Islip. ♦

Solid Waste Processing



Three Park Avenue
New York, NY
10016-5990 U.S.A.

First-Class
U.S. Postage
PAID
Permit No. 267
West Caldwell, NJ

SOLID WASTE PROCESSING DIVISION 2007-2008 EXECUTIVE COMMITTEE

CHAIR

Peter A. Napoli
Martin Conveyor Division
2 South Orange Ste. 206
Media, PA 19063-2619
Tel: (484) 444-0663
Fax: (484) 444-0257
Email: pnapoli@martinsprocket.com

SECRETARY-TREASURER

Sherman R. Patton
Malcolm Pirnie, Inc.
101 Arthur Andersen Pkwy.
Sarasota, FL, 34232
Tel: (941) 379-7128
Fax: (941) 379-6989
Email: ppatton@pirnie.com

MEMBER-AT-LARGE

Thomas M. White, PE
Wheelabrator McKay Bay, Inc.
107 North 34th Street
Tampa, FL 33605
Tel: (813) 248-1457
Fax: (813) 247-2052
Email: tom9779@aol.com

VICE CHAIR

John W. Norton, Sr., PE, DEE
Norton Engineering, LLC
14 West First Street
Dayton, OH 45402
Tel: (937) 223-5848
Fax: (937) 223-5871
Email: jnortons@aol.com

PROGRAM CHAIR

Shawn Worster
HDR Engineering
39 Harbor View Drive
Hingham, MA 02043
Tel: (617) 357-7747
Fax: (617) 357-7759
Email: shawn.worster@hdrinc.com

MEMBER-AT-LARGE

Leonard Grillo, PE
Grillo Engrg. Co
9 Ash Street
PO Box 479
Hollis, NH 03049-6549
Tel: (603) 465-3111
Fax: (603) 465-3139
Email: grilloeng@aol.com