

*25th Anniversary*

## THE MINNESOTA WASTE COMBUSTOR OPERATOR TRAINING & CERTIFICATION PROGRAM


-Or-

### “Gettin’er Done in the Frozen Tundra”

Rob Dunnette – Principal Associate  
Gershman, Brickner & Bratton, Inc.




**NAWTEC 2017** APRIL 24-26, 2017  
MINNEAPOLIS, MN



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Yesterday's Waste... Today's Energy

## GBB Waste-to-Energy and Conversion Technology Expertise

- 200+ Assignments Involving Utilization of Waste for its Energy Content Since 1980
- Tracks 475+ Alternative Conversion Technology Companies
- Enhanced Power Plant / District Energy Engineering Services with Acquisition of Energy Facilities Group of RRC Power & Energy
- Wide Range of Services
  - Technology Evaluation
  - Initial Feasibility Study and Economic Analysis
  - Procurement & Vendor Negotiations
  - Financing Activities Assistance
  - Construction and Commercial Operations Monitoring



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## Minnesota Resource Recovery Association

- MRRA: a public/private partnership that provides a collective voice advocating integrated solid waste management practices in Minnesota
- A strong and continuous presence at the Minnesota Pollution Control Agency and the MN State Legislature.
- Close collaboration with the Energy Recovery Council, SWANA, and other organizations



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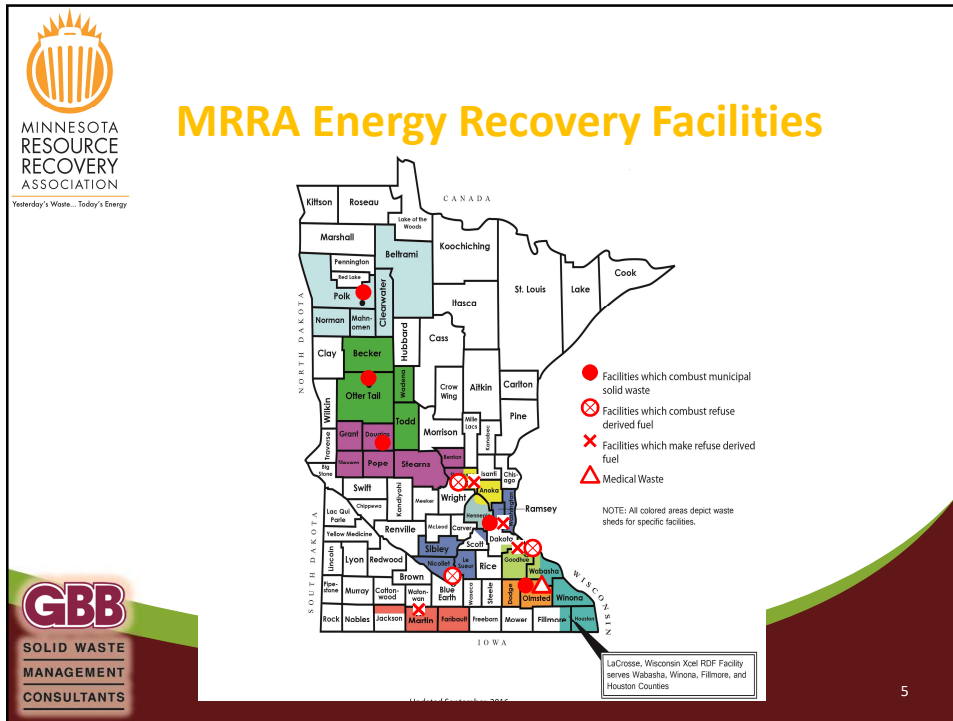
## Minnesota Resource Recovery Association

- Membership: Public & private facility owners, Consultants, Regulators, Vendors,
- Facilities: WTE facilities (MB, RDF, CA), landfills, MRFs (clean & mixed), ash reclamation projects, emerging technologies
- Services: Legislative support, regulatory liaison, technical support, training & certification, public outreach, continuing education



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- MINNESOTA RESOURCE RECOVERY ASSOCIATION**  
Yesterday's Waste... Today's Energy
- ## MN MWC Operator Training & Certification
1. Historical Background
  2. MRRRA Program Description
  3. Program(s) Comparison – Similarities
  4. Program(s) Comparison – Differences
  5. Continuing Education
  6. Questions?
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## Historical Background – The Baseline

- MN requires licensure for boiler operation
- MN is Fully Delegated for Air Programs
- MN is Fully Delegated for Solid Waste Programs
- MN is Fully Delegated for Safety Programs



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## Historical Background – The Baseline

**1987**

- MPCA WTE Permits First Require Operator Training
- ASME QRO-1 Not Yet Available
- ASME/NESCAUM Training Program Available
- MN Waste-to-Energy Association Offers its Initial Training & Certification Program



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## Historical Background

**1989**

- NSPS/EG Requires Operator Training & Certification
- ASME QRO-1 Published
- MN WTE Association Training Program Continues
- Rochester Technical Institute WTE Option (in collaboration with Olmsted County)



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## Historical Background

**1990**

- MPCA Offers "Incinerator" Training
- ASME QRO-1 Training Program Development
- Minnesota Resource Recovery Association (MRRRA) (new name) Training Committee Formed
- MN Dept. of Trade & Economic Development Grant Program
- MRRRA & Red Wing Technical Institute Application



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## Historical Background


**1991**

- MN Dept. of Trade & Economic Development Grant Awarded
- MRRA & Red Wing Technical Institute Training Curriculum Development
- Discussions with MPCA for MN Rule
- Training Committee Samples QRO-1




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## Historical Background – Key Players



**m** EMPLOYMENT AND  
ECONOMIC DEVELOPMENT



MINNESOTA STATE COLLEGE  
**SOUTHEAST**  
A TECHNICAL & COMMUNITY COLLEGE



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## Historical Background - MPCA Role

- Established MOU with MN State Colleges SE to administer program under MPCA oversight
- Approves curriculum and certifies test bank
- Participates on Examiner certification panels
- Approves continuing education credits




**m1** MINNESOTA POLLUTION  
CONTROL AGENCY



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## Historical Background – Count Down


### 1992

- MRRA & MN State Colleges Training Curriculum Complete
- MN Rule Requirements Established
- First Offering of the MN Training Program






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## Historical Background – Lift Off!



  
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## Historical Background - On Going

### 1993 to Present

- MN State Colleges SE Administers the MRRA Program
- Training Coordinator Hired
- Training Manual Copyrighted
- Training Material Updates
- Continuing Education via MRRA

  
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## Program Description


### Emulates ASME QRO Structure and Standards

- ✓ Levels of Certification (Provisional & Full)
- ✓ Provisional Certification Based on Classroom Training and Examination
- ✓ Full Certification Based Upon On-Site Conditions and Capabilities, Operator Presence, and Responsibilities
- ✓ Curriculum Content (with Exceptions)
- ✓ Continuing Education for Renewal



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## Program(s) Comparison


### Similarities Between MN & ASME Curriculums

- ✓ Solid Waste Management Techniques
- ✓ Solid Waste Fuel Characteristics
- ✓ Solid Waste Safety Precautions
- ✓ Air Pollution Controls
- ✓ Emissions Testing & Monitoring
- ✓ Ash Considerations



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## Program(s) Comparison

### Differences Between MN & ASME Curriculums

1) Power Plant Fundamentals Based on MN Power Plant Operator License

- ✓ Thermodynamics
- ✓ Water Chemistry
- ✓ Steam & Auxiliary System Operations
- ✓ Steam Turbine Operation



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## Program(s) Comparison

### Differences Between MN & ASME Curriculums


2) Safety Training Addressed Via Site Specific MNOSHA Requirements

- ✓ Right-to-Know
- ✓ Confined Space
- ✓ Respiratory Protection
- ✓ Lock-Out/Tag-Out
- ✓ Hearing Conservation
- ✓ And Others...



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## Program(s) Comparison

### Differences Between MN & ASME Curriculumms


3) Regulatory Framework

- ✓ Federal Standards Incorporated By Reference
- ✓ Additional MN-Specific Air Requirements
- ✓ MN Ash Requirements
- ✓ Site-Specific Permit Considerations



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## Program(s) Comparison

### Differences Between MN & ASME Programs


4) Location, Location, Location

- ✓ Provisional Training & Examination at MN State Colleges SE Campus
- ✓ Tours of local MB, RDF, and CA Facilities
- ✓ MRRA Resources Utilized for On-Site Full Examination & Certification



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## Program(s) Comparison

### Differences Between MN & ASME Programs


#### 5) Certification Examiner Qualification KEY

- ✓ Employed at MWC Facility
- ✓ Involved in Developing & Maintaining Site-Specific Operating Procedures
- ✓ Develops & Administers On-Site Training
- ✓ Site-Specific Knowledge Expert
- ✓ Confers Full Certification



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## Program(s) Comparison

### Differences Between MN & ASME Programs


#### 6) Certification Examiner Process

- ✓ Application Made to MPCA
- ✓ Experience & Credentials Review
- ✓ Examiner Board Convened (3)
  - MPCA Designated Representative (1)
  - MWC Examiners (2) with similar experience
- ✓ On-Site Oral & Practical Examination
- ✓ On-Site Training & Certification Program Evaluation



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## Program(s) Comparison

### Differences Between MN & ASME Programs


7) Economics for Initial Certification (1992-1994)

- ✓ Provisional Cert Delta/Op ~\$1,700
- ✓ Provisional Cert Delta/Plant ~\$30,000
- ✓ Full Cert Delta/Op ~\$5,000
- ✓ Full Cert Delta/Plant ~\$22,500
- ✓ Total Delta/Plant ~\$52,500
- ✓ **MRRRA Total Delta ~\$525,000**



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## Program(s) Comparison

### Differences Between MN & ASME Programs


7) Economics for Initial Certification (1992-1994)

- ✓ Key Point is Number of Operators
- ✓ MN Currently Ranks #8 in MWC Processing Capacity
- ✓ MN Currently Ranks #3 in Number of MWCs
- ✓ 1991 MN Had 13 Facilities



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## Continuing Education

- On-Site via Local Operations Manual Review & Update
- Off-Site via MN State Colleges SE/MRRA Training (Same as Provisional Training)
- Off-Site via MRRA Sponsored Workshops
- Off-Site via MPCA Approved Seminars
- Renewal Application to MPCA
- Three-Year Cycle



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