Wastewater Operator Certification:

NR 114 RULE REVISION

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West Central Region, Wisconsin Rapids

WWOA 50th Annual Conference
HISTORY

- Workgroup began in 2010
- Took effect July 1, 2015
- Why changes were made:
  - New treatment technologies
  - Importance of collection systems/CMOM
  - More operator choices for Advanced Certification beyond exams
MAJOR CHANGES

- New subclasses
- Fewer certification levels
  - OIT
  - Basic
  - Advanced
- Advanced operator certification point system
- New criteria for advanced classification of a facility
Facility meets any one of the following criteria:

- Mechanical plant with annual average design flow >1.0 MGD
- Biochemical oxygen demand (BOD) limit ≤ 10 mg/L
- Surface water limits for Total Phosphorus or Total Nitrogen with a biological nutrient removal process
- Tertiary phosphorus removal process for ultralow phosphorus limits
- Municipal WWTP with a major contributing industry
- Municipal WWTP that produces Class A biosolids.
# NEW SUBCLASSES

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>SUBCLASS</th>
<th>SUBCLASS NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological treatment</td>
<td>A1</td>
<td>Suspended Growth Processes</td>
<td>Activated sludge and variants</td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>Attached Growth Processes</td>
<td>Trickling filters, RBCs and biotowers</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>Recirculating Media Filters</td>
<td></td>
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<tr>
<td></td>
<td>A4</td>
<td>Ponds, Lagoons and Natural Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A5</td>
<td>Anaerobic Treatment of Liquid Waste</td>
<td>High strength liquid waste treatment system</td>
</tr>
<tr>
<td>Solids separation</td>
<td>B</td>
<td>Solids Separation</td>
<td>Clarifiers, membranes, filters, tertiary phosphorus removal, etc</td>
</tr>
<tr>
<td>Solids treatment</td>
<td>C</td>
<td>Biological Solids/Sludge – Handling, Processing and Reuse</td>
<td>Aerobic and anaerobic digestion, thickening, dewatering, land application</td>
</tr>
<tr>
<td>Nutrient removal</td>
<td>P</td>
<td>Total Phosphorus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Total Nitrogen</td>
<td></td>
</tr>
<tr>
<td>Disinfection</td>
<td>D</td>
<td>Disinfection</td>
<td>Chlorination, ultraviolet radiation, ozone</td>
</tr>
<tr>
<td>Laboratory</td>
<td>L</td>
<td>Laboratory</td>
<td>Registered or certified on-site laboratories</td>
</tr>
<tr>
<td>Special</td>
<td>U</td>
<td>Unique Treatment Systems</td>
<td>Unique, special treatment plants that use biological, chemical or physical methods</td>
</tr>
<tr>
<td>Collection System</td>
<td>SS</td>
<td>Sanitary Sewer Collection System</td>
<td></td>
</tr>
</tbody>
</table>
A3: RECIRCULATING MEDIA FILTERS

- Small municipal communities
- Treats residential wastewater
  - Lower strength wastes
- 25 question exam
- Study Guide and Exam available now!

Barneveld WWTP
A5: ANAEROBIC TREATMENT OF LIQUID WASTE

- Key word: **Liquid**
  - Treats the liquid treatment train
  - **Not** anaerobic digestion which is the solid treatment train (C: Biosolids/Sludges subclass)

- Majority are industrial wastewater treatment
  - Higher strength waste
  - Examples: Dairy waste, whey processors, food processors, breweries
Treatment facilities typically are:

- Specialized
- Often patented process
- Anaerobic reactors

Once the exam is available, operators will have 1 yr to become certified if required at their facility

25 question exam

Will keep you updated on anticipated release date
Facilities that perform **Total Nitrogen Removal**
- Nitrification and Denitrification
- Not for Nitrate-N or Ammonia-N limits

The Total Nitrogen Pie

- Total Kjeldahl-N
- Ammonia-N
- Organic-N
- Nitrate-N
- Nitrite-N
N: NUTRIENT REMOVAL-TOTAL NITROGEN

- Applies mostly to dischargers to land infiltration system or groundwater
- Surface water dischargers do not have Total Nitrogen limit (currently)
- Once the exam is available, operators will have 1 yr to become certified if required at their facility
- 25 question exam
- Coming soon! Tentatively 2017
SS: COLLECTION SYSTEM SUBCLASS

- Each facility will need one operator certified in SS: Collection System subclass
  - Voluntary for satellite systems
- Requires an OIC designation for Collection System
- Facility will then have 2 OICs
  - WWTP OIC
  - Collection System OIC
- Can be the same person or 2 different people
SS: COLLECTION SYSTEM SUBCLASS

- Deadline for requirement
  - After exam is available and...
  - Upon re-issuance of WPDES permit, then...
  - Operator will have 5 years to obtain certification
- There will not be an Advanced Certification for SS
- Does not require General Wastewater Exam
- 50 question exam
- Coming soon! Tentatively 2018
## Levels of Certification

<table>
<thead>
<tr>
<th>Operator in Training</th>
<th>Basic</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass Basic General Exam + Basic Subclass Exam</td>
<td>One year of subclass specific experience</td>
<td>Obtain 10 points</td>
</tr>
</tbody>
</table>
ADVANCED POINT SYSTEM

10 points total required. Minimum of 4 years of hands-on experience.

<table>
<thead>
<tr>
<th>Type</th>
<th>Point Method</th>
<th>Points</th>
<th>Minimum Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>4 years hands-on</td>
<td>4</td>
<td>4,000</td>
</tr>
<tr>
<td></td>
<td>5 years hands-on</td>
<td>5</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>6 years hands-on</td>
<td>6</td>
<td>6,000</td>
</tr>
<tr>
<td>Degree</td>
<td>Undergrad or Graduate Degree</td>
<td>6</td>
<td>At least 240 hours wastewater related courses</td>
</tr>
<tr>
<td></td>
<td>Water/Wastewater Associates Degree</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>Completion of State Approved Apprenticeship Program</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>Exam</td>
<td>100 Question Multiple Choice Exam</td>
<td>4</td>
<td>N/A</td>
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<tr>
<td>Advanced Coursework</td>
<td>Pre-approved by the DNR and on list of approved courses</td>
<td>2</td>
<td>80</td>
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<tr>
<td></td>
<td></td>
<td>1.5</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5</td>
<td>20</td>
</tr>
</tbody>
</table>
EXAMPLE 1

An operator has:

→ 4 yrs of experience 4 pts
→ Passed 100 Question Advanced Exam 4 pts
→ Completed 80 hrs of Advanced Coursework +2 pts

Total: 10 pts
EXAMPLE 2

An operator has:

→ 6 yrs of experience 6 pts

→ Passed 100 Question Advanced Exam +4 pts 10 pts
EXAMPLE 3

An operator has:

→ 5 yrs of experience 5 pts
→ 200 hrs of Advanced Coursework \(+5\) pts 10 pts
EXAMPLE 4

An operator has:

→ 4 yrs of experience  
  4 pts

→ Wastewater related Associate’s Degree  
  +6 pts
  10 pts
EXAMPLE 5

An operator has:

→ 4 yrs of experience 4 pts
→ Wastewater related Bachelors/Graduate Degree +6 pts

10 pts
BACHELORS/GRADUATE DEGREE

- 240 hours (15-16 credits) of wastewater courses

- Wastewater related courses would include:
  - Aquatic Toxicology
  - General Chemistry
  - Water Chemistry
  - Fluid Mechanics
  - Hydraulics
  - Hydrology
  - Microbiology
  - Soil Science
  - Water Resources
  - Water Quality Modeling
APPLYING FOR ADVANCED CERTIFICATION

- Application and instructions on DNR website
- $100 application fee
- Documentation may be required
  - Experience form
  - Degree transcript
  - Copy of degree
  - Certificate of Completion of Advanced Coursework
QUESTIONS?

Website:  http://dnr.wi.gov search “operator certification”

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