

Bureau of Safe Drinking Water

Certification Program External Review

Certification Program Advisory Committee

Harrisburg, PA
May 28, 2015

Tom Wolf, Governor John Quigley, Secretary

On behalf of the Department of Environmental Protection and the State Board for Certification of Water and Wastewater Systems Operators, we thank you for taking the time out of your schedules in support of Pennsylvania's Operator Certification Program.

Proposed Timeline

- March 11 – Identify priority elements
- May 28 – DEP provides updates to CPAC on priority elements
- July 22 – Review draft external review report
- Additional meetings?
- December 10 – present findings to the State Board for Certification of Water and Wastewater Systems Operators



On March 11, we discussed the U.S. Environmental Protection Agency's requirement for an external review of the Operator Certification Program every five years for the purpose of providing the state with a report describing the results of the program review and listing recommendations for improving the program. CPAC members were asked to rank the top three of 15 elements to focus on as a group for the external review. They selected the following elements (in priority order):

Status of Certified Operators and Trends

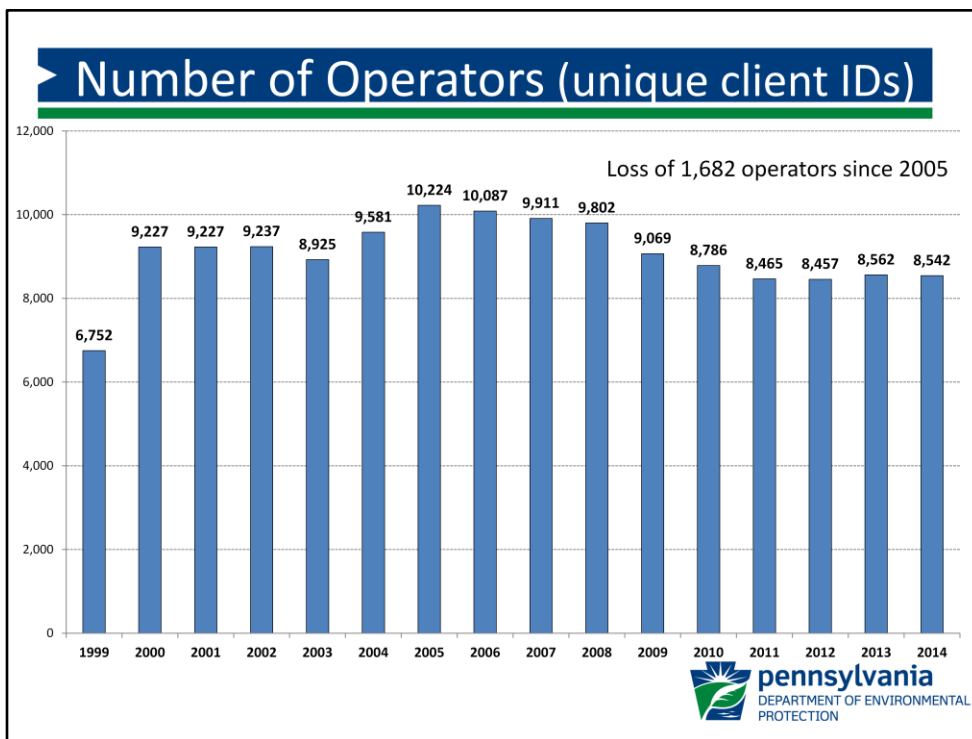
- Tracking of operator certification and continuing education, statistics on examinees, distribution of operators across the state, etc.

Compliance Rate Determination/Enforcement

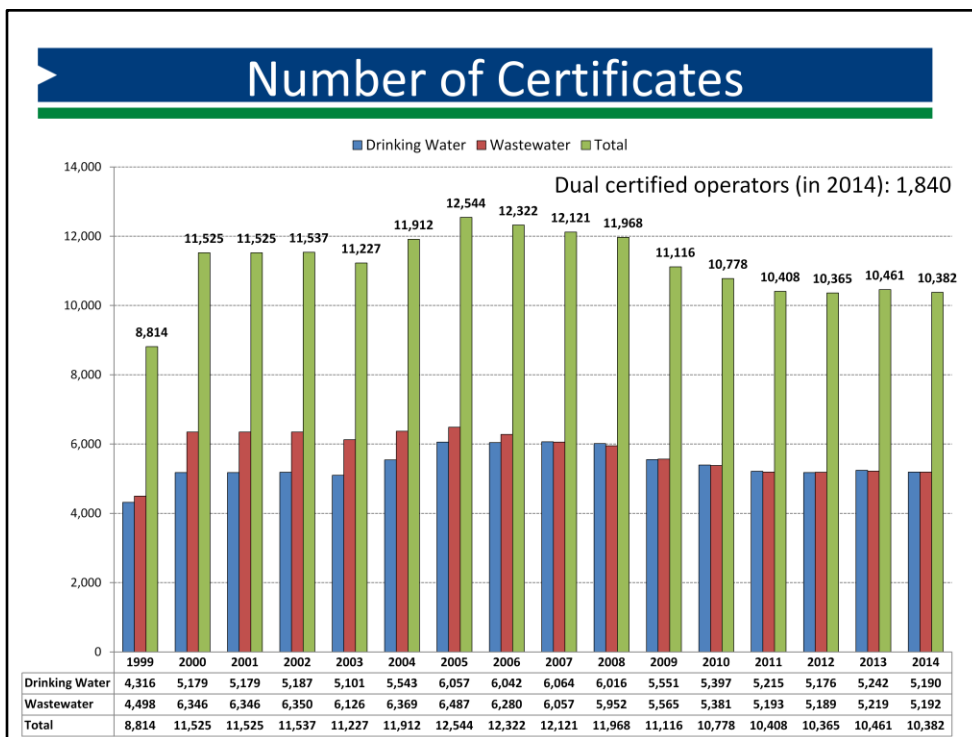
- Number and types of water and wastewater systems with uncertified operators and inappropriately certified operators.
- DEP's enforcement strategy, which was identified as a weakness in our internal program review.

Strategic Planning

- This will involve DEP's and the Certification Board's vision of where the program needs to go within the next five years.



Pennsylvania has experienced a 16% loss in the number of operators since 2005. Using the previous low point of 8,925 operators in 2003, the loss is 4%. These statistics are based on the unique client IDs in DEP's enterprise database system called eFACTS (Environment Facility Application Compliance Tracking System).



Note that some operators hold both a drinking water and wastewater certificate, often referred to as “dual certified operators.” Looking at the number of certificates, Pennsylvania has experienced a 17% loss in the number of certificates since 2005. Using the previous low point of 11,227 certificates in 2003, the loss is about 8%.

Number of Operators

- Total number of operators – 8,542
- Operators not connected to a facility – 2,386 (28 percent)
 - Drinking water operators – 1,423
 - Wastewater operators – 1,225
 - Dual certified operators (both water and wastewater certificates) – 262



Of the 8,542 operators with client IDs in eFACTS, 28% are not connected to a facility:

- Some of these numbers include operators who may have left the workforce but are still maintaining their certificates. For example, retirees.
- Another group includes operators who weren't reported by the system owner on the annual Available Operator Report.
- Also, a group includes engineers, government employees, and others who maintain certificates to enhance their qualifications in their current jobs.

Ultimately, when operators are not connected to a facility, it could mean that Pennsylvania's operator workforce is smaller than 8,542 operators, as these operators may not be available for employment in the drinking water and wastewater industry. Using straight math, the workforce could be as small as about 6,100 operators.

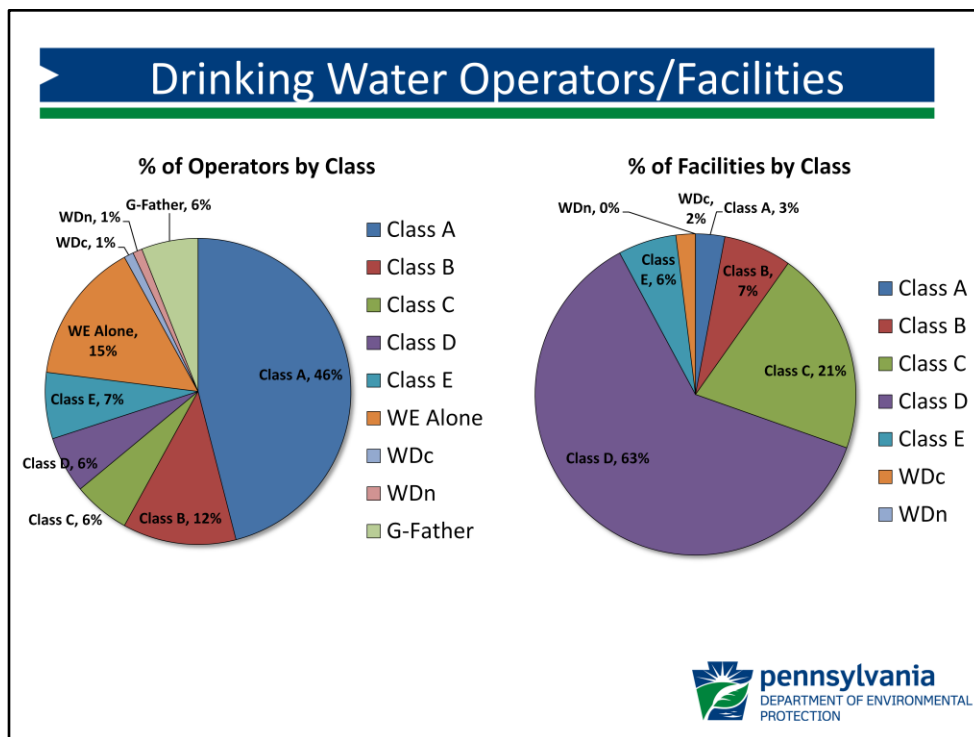
NOTE: (1,423 DW operators + 1,225 WW operators) – 262 dual certified operators = 2,386

Circuit Rider Operators

- A circuit rider is a certified operator who works at more than one drinking water and/or wastewater facility with different owners
- About 200 water and about 200 wastewater circuit rider businesses/individuals in PA
- In 2008, circuit riders operated 21 percent of the water and wastewater systems
- Today, circuit riders operate 46 percent of water systems and 36 percent of wastewater systems



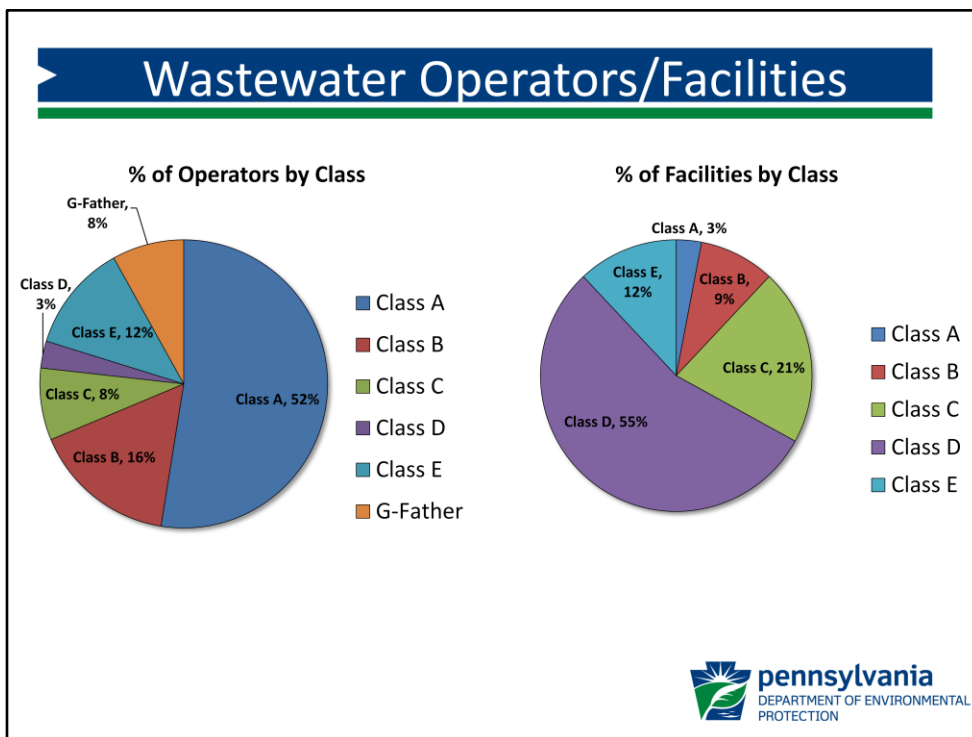
Circuit riders can make process control decisions at more than one system under different ownership. Pennsylvania has about 200 drinking water and about 200 wastewater circuit rider operators. These numbers include businesses with multiple operators. For example, a business might only be reflected in the numbers as one circuit rider operator even though the business employs multiple circuit riders.



These pie charts show that Pennsylvania has drinking water operators with more than the minimum required qualifications, as many have Class A certification.

Drinking water systems are classified into one of five classifications being designated as Classification A, B, C, D or E as follows:

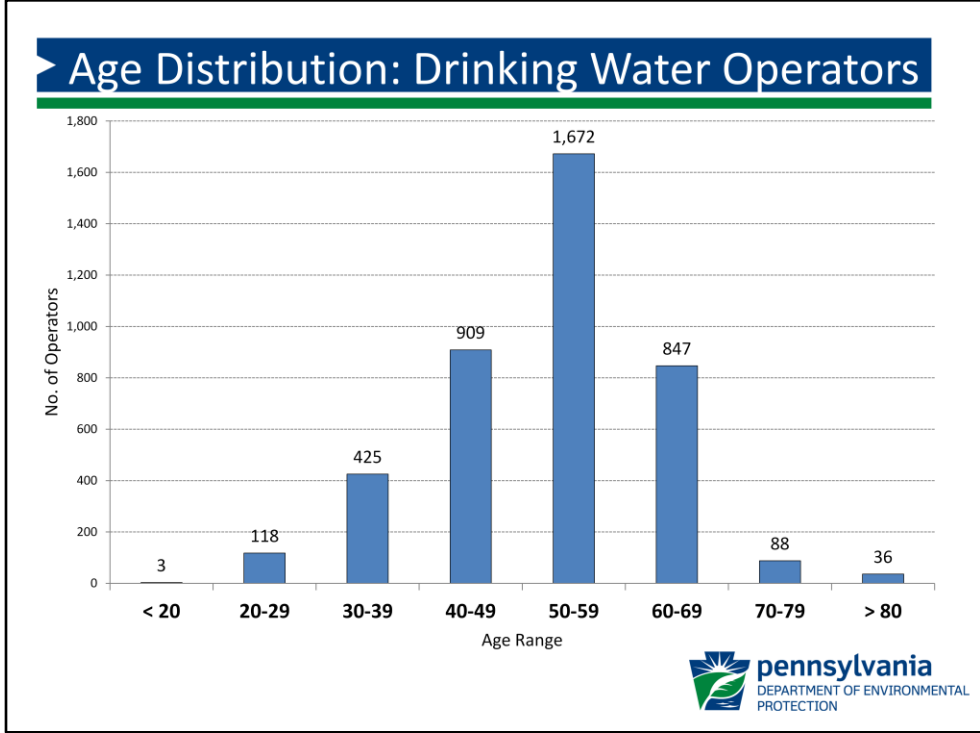
1. Classification A—Water systems serving an average of more than 5 million gallons per day (MDG).
2. Classification B—Water systems serving an average of greater than 1 MGD but less than or equal to 5 MGD.
3. Classification C—Water systems serving an average of greater than 100,000 gallons per day but less than or equal to 1 MGD.
4. Classification D—Water systems serving an average of less than or equal to 100,000 gallons per day.
5. Classification E—Distribution and consecutive water systems, without treatment.
6. WDc—Water systems serving less than 500 individuals and having no more than 150 connections; the source of water for the system is exclusively groundwater; and the system requires only disinfection. Systems that meet similar criteria but have no treatment are classified as WDn. The system owner first must request, in writing, that their water system be reclassified as a Dc or Dn.



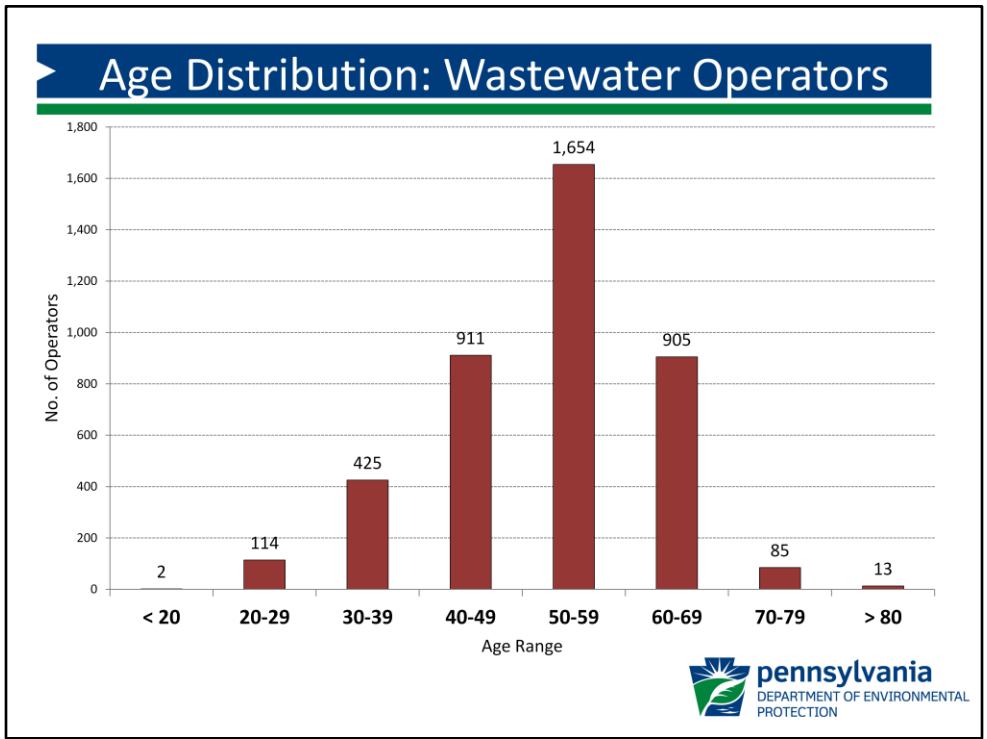
These pie charts show that Pennsylvania has wastewater operators with more than the minimum required qualifications, as many have Class A certification.

Wastewater systems are classified into one of five classifications being designated as Classification A, B, C, D or E as follows:

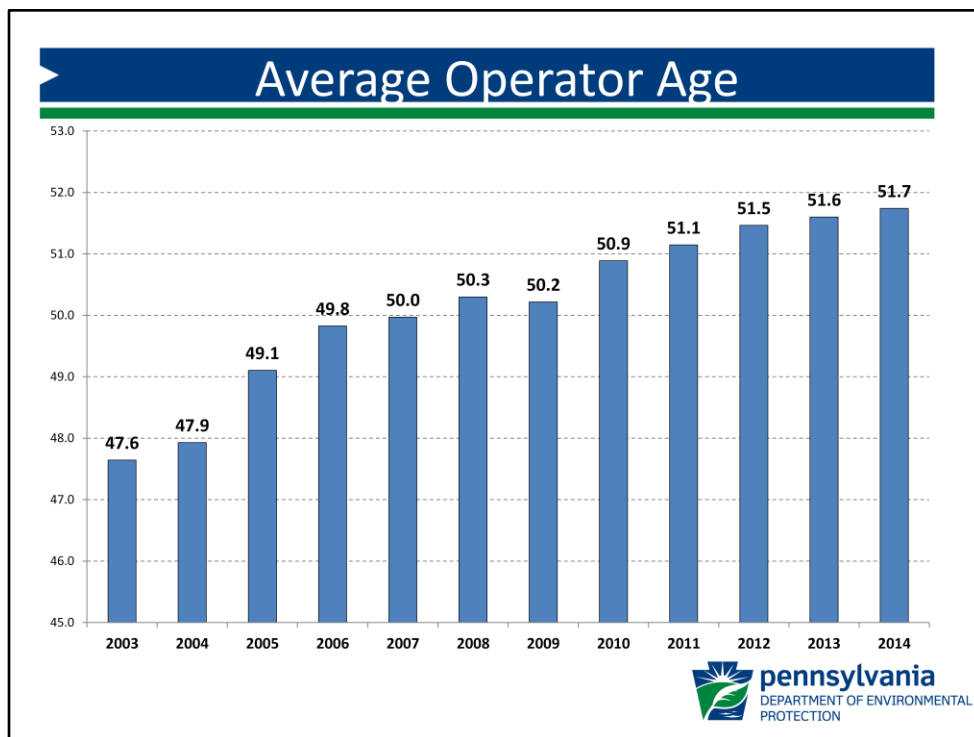
1. Classification A—Wastewater systems with a permitted average daily discharge flow greater than 5 million gallons per day (MDG) or unlimited permitted discharge flows.
2. Classification B—Wastewater systems with a permitted average daily discharge flow greater than 1 MDG but less than or equal to 5 MDG.
3. Classification C—Wastewater systems with a permitted average daily discharge flow greater than 100,000 gallons per day but less than or equal to 1 MDG.
4. Classification D—Wastewater systems with a permitted average daily discharge flow equal to or less than 100,000 gallons.
5. Classification E—A satellite collection system.



Most of Pennsylvania’s drinking water operators are in the 50-to-59 age bracket.



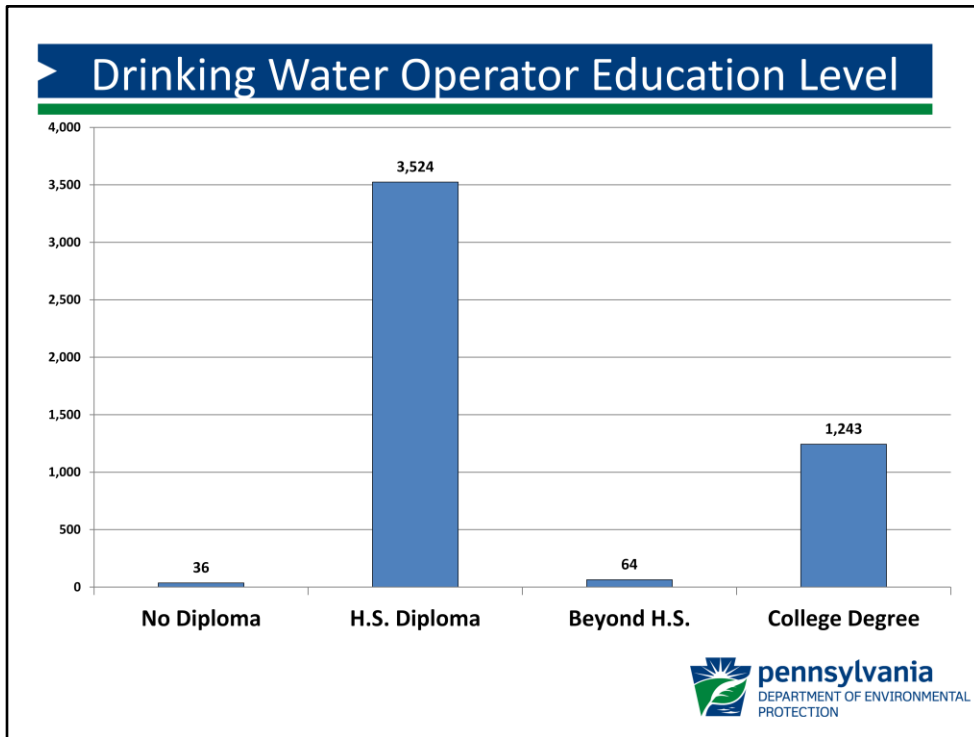
Likewise, most of Pennsylvania’s wastewater operators are in the 50-to-59 age bracket.



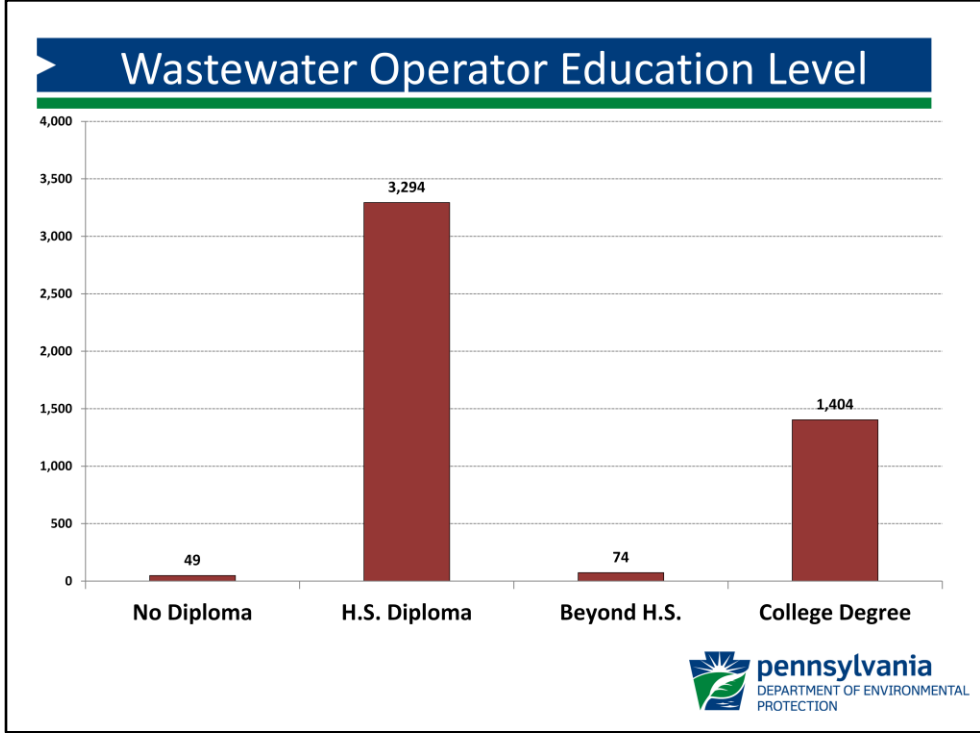
Although we've seen a steady rise in the average age of Pennsylvania's operator workforce, this trend is also occurring across the country in other job sectors. From http://en.wikipedia.org/wiki/Aging_in_the_American_workforce:

"It is projected that by 2020, the proportion of the U.S. labor force that is composed of older adults will be 25.2%. This continues a trend in increasing rates of older adults remaining in the workforce, as the rates were 13.1% in 2000 and 19.5% in 2010. A complementary trend is the increasing median age of the U.S. workforce. By 2020, the workforce is expected to have a median age of 42.8, which will be an increase from 39.3 in 2000 and 41.7 in 2010.

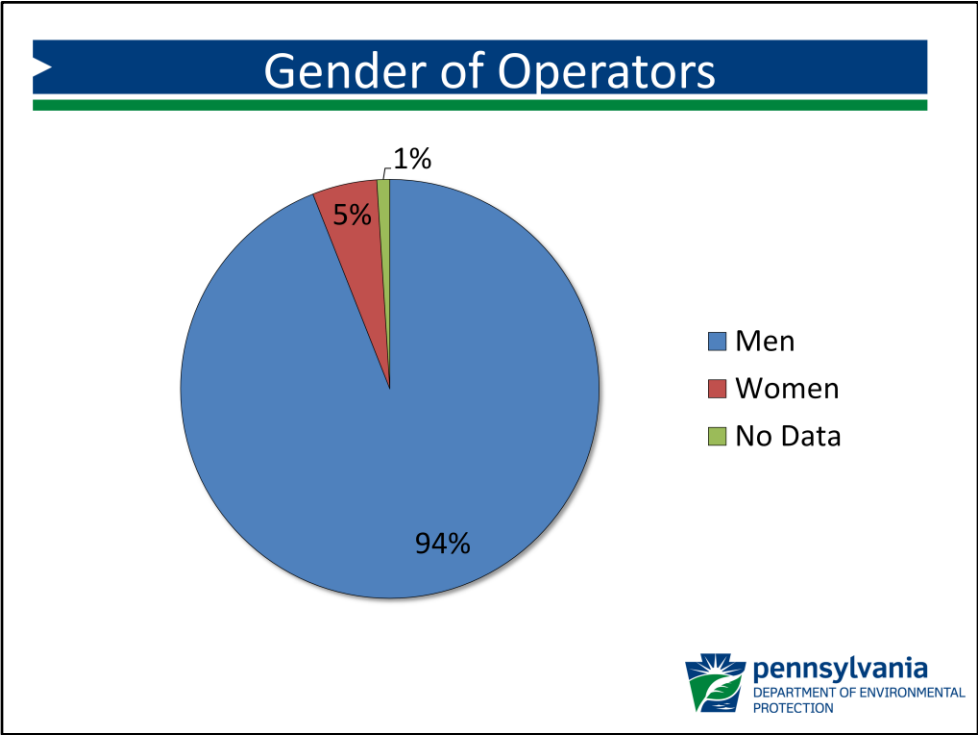
"A further factor contributing to an aging workforce is the fact that employment rates among older workers are increasing. The rate of people who continue working after they are 65 is relatively high in the U.S., if compared to other developed countries. For example, in 2011, 16.7% among people aged 65 and over and 29.9% among 65-69 were employed in the U.S., while the corresponding rates in the [European Union] were only 4.8 and 10.5%."



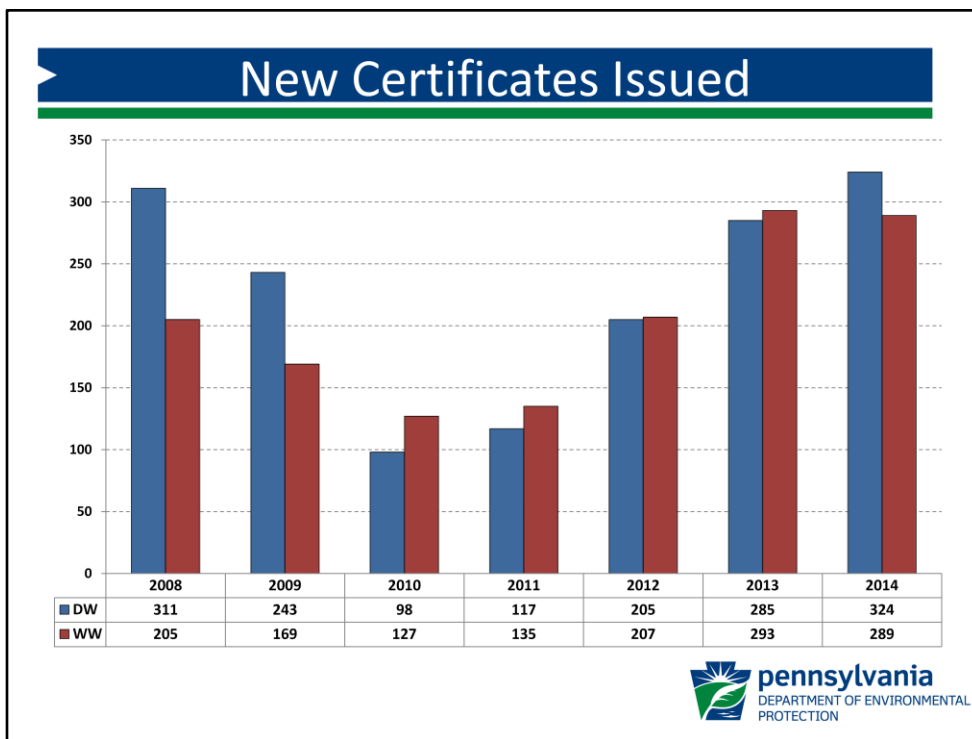
Out of 4,867 operators, 72% of Pennsylvania’s drinking water operators hold at least a high school diploma. 25% have a college degree. Note that data on education levels was unavailable for some operators.



Out of 4,821 operators, 68% of Pennsylvania’s wastewater operators hold at least a high school diploma. 29% have a college degree. Note that data on education levels was unavailable for some operators.

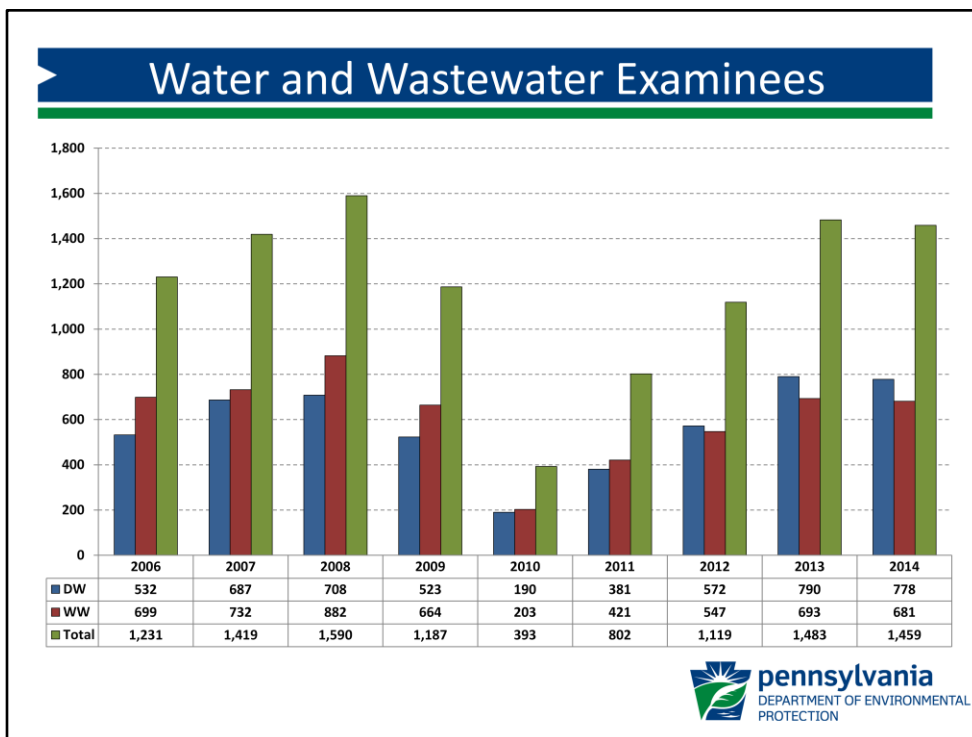


94% of Pennsylvania’s operator workforce is male, and 5% are female.

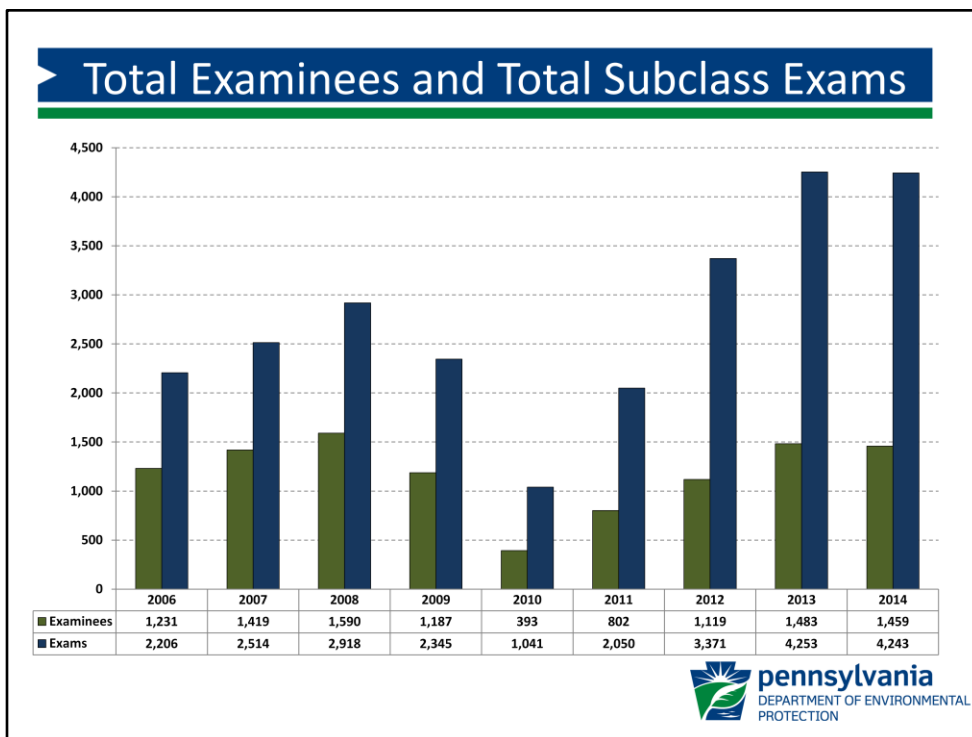


In late 2009, furloughs of commonwealth employees resulted in a reduction of available exams for operators. This resulted in a significant reduction in the issuance of new operator certificates from 516 and 412 certificates in 2008 and 2009, respectively, to 225 certificates in 2010.

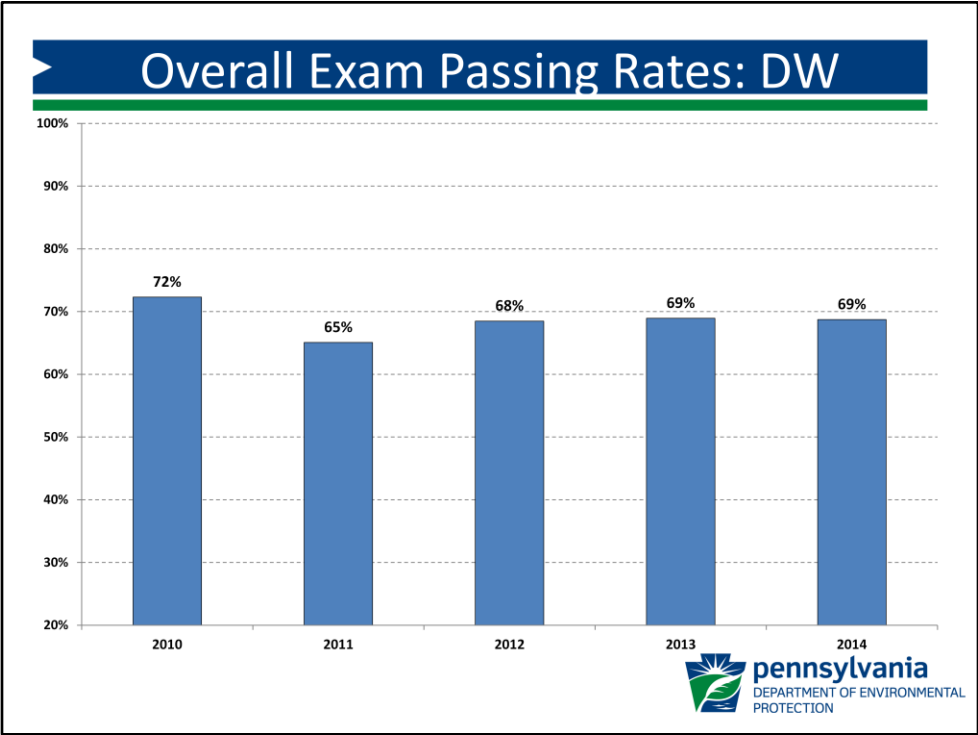
Due to the addition of a DEP complement that is solely directed at supporting the program—plus staff training and administrative enhancements in the years leading up to 2014—613 certificates were issued in 2014, which is well above pre-furlough levels.



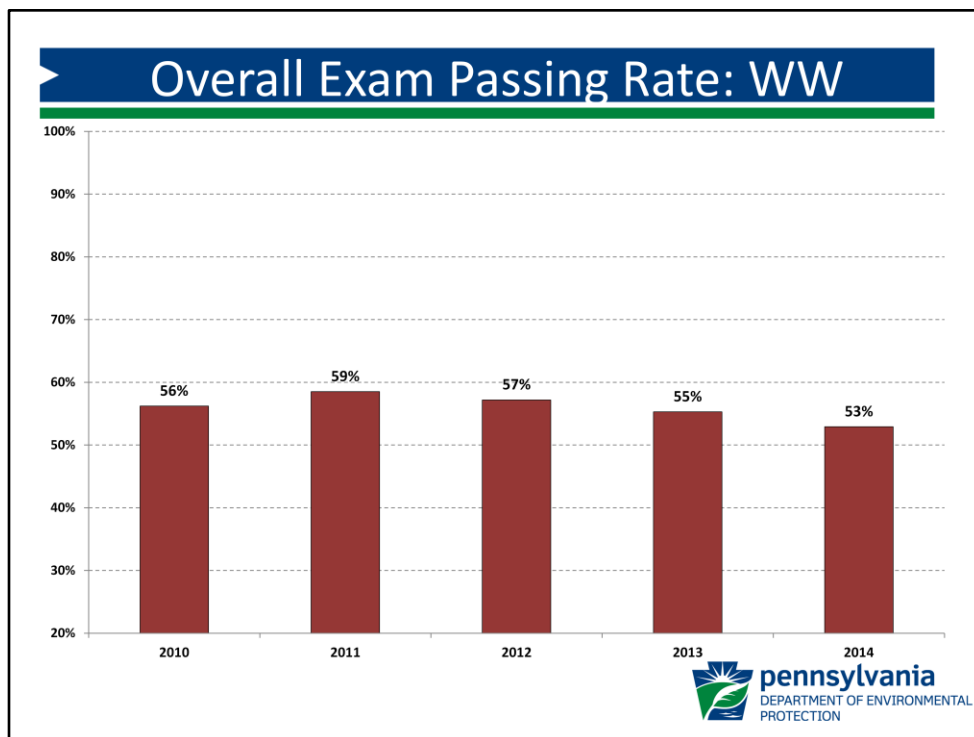
Likewise, the number of examinees has been restored to pre-furlough levels. In 2015, approximately 2,500 slots are available for examinees. For the first time since 2008, some of our exams haven't been filled this year, which indicates that the supply of exam seats may finally be exceeding the demand. In all likelihood, we have now eliminated the backlog of exam requests in Pennsylvania.



Because operators often take more than one exam type during a four-hour exam session, we've seen a huge uptick in the total number of subclass exams in recent years, which correlates to the availability of exam seats.



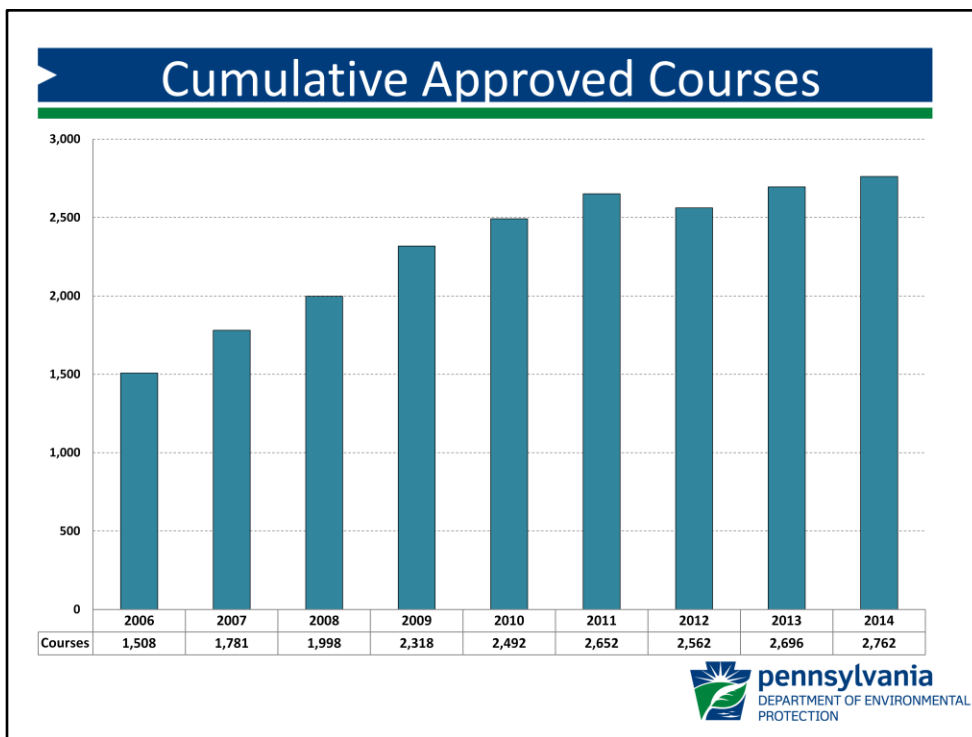
These statistics combine all subclasses and stand-alone exams. Drinking water includes 14 subclassifications that identify the treatment and distribution methods used at public water systems.



These statistics combine all subclasses and stand-alone exams. Wastewater includes four subclassifications that identify the treatment or collection methods used at wastewater systems.

To improve the rates:

- Our Training Section has focused significant attention on revising a selection of 27 drinking water and 26 wastewater training modules. The modules are intended to serve as student workbooks for use by approved training sponsors to develop pre-certification classroom training.
- Our Technical Assistance Section has delivered special math and pre-certification training for small systems in key areas of the state.
- We have updated and improved our internal "SOP for Quality Assurance of Certification Exams" to ensure exam question integrity.



For water and wastewater operators to receive credit for training toward pre-certification experience or continuing education, DEP must approve the training activity. DEP approval ensures that competent providers are offering training that is relevant and meaningful to operators. Since 2006, Pennsylvania has experienced about a 10% annual growth in the number of approved courses for operators.

Chapter 302 Regulations

System Owner Responsibilities:

- Ensure process control decisions are made by an available operator
- Provide copies of permits to operators
- Respond to reports from operators
- Provide names of available operators to DEP
- Pay annual service fee



The Chapter 302 regulations were promulgated in September 2010 and details the responsibilities for both facility owner and certified operators.

Facility owners are required to employ as many certified operators with the appropriate treatment subclasses as are necessary to properly operate and maintain the facility.

Owners are required to provide (or prominently post) copies of all permits for their facility to ensure the operators are aware of all permit conditions for that facility. Owners are also responsible for addressing problems identified in reports from the operators.

Owners must provide the names of all available operators to DEP upon request and must identify the operator(s)-in-charge if any Standard Operating Procedures (SOPs) are used at their facility. Owners must provide an update to DEP within 10 days of any changes to their available operator(s) or operators-in-charge.

And, owners must pay an annual service fee to DEP within 60 days of receiving a written notice (invoice).

Chapter 302 Regulations

Operator Responsibilities:

- Suitably operate and maintain facility to comply with rules, regulations, and permits
- Follow Standard Operating Procedures unless identified as an available operator
- Provide report to system owner concerning problems and/or violations



Certified operators are required to maintain the appropriate level of certification through testing, experience and continuing education for any facility for which they make process decisions. Certified operators are required to suitably operate and maintain a facility using all available resources to comply with all applicable statutes, regulations and permits. Certified operators are responsible for any process control decisions they make and the consequences of those decisions (unless the owner has failed to respond to a report from the operator or there is deliberate action with malice or negligence by an employee under the operator's supervision).

Certified operators are required to follow written SOPs unless they have been identified as an available operator for that facility by the owner. Operators-in-charge are responsible for approving any written SOPs to be used at a facility and are accountable for violations that occur from an operator following an SOP, if the violation is a direct result of a provision in the SOP.

Certified operators must report to the facility owner in writing any known violation or conditions that may be or are causing violations of federal or state laws, regulations or permit conditions. There are specific content elements required in §302.1201 for these reports.

Op Cert Program Compliance

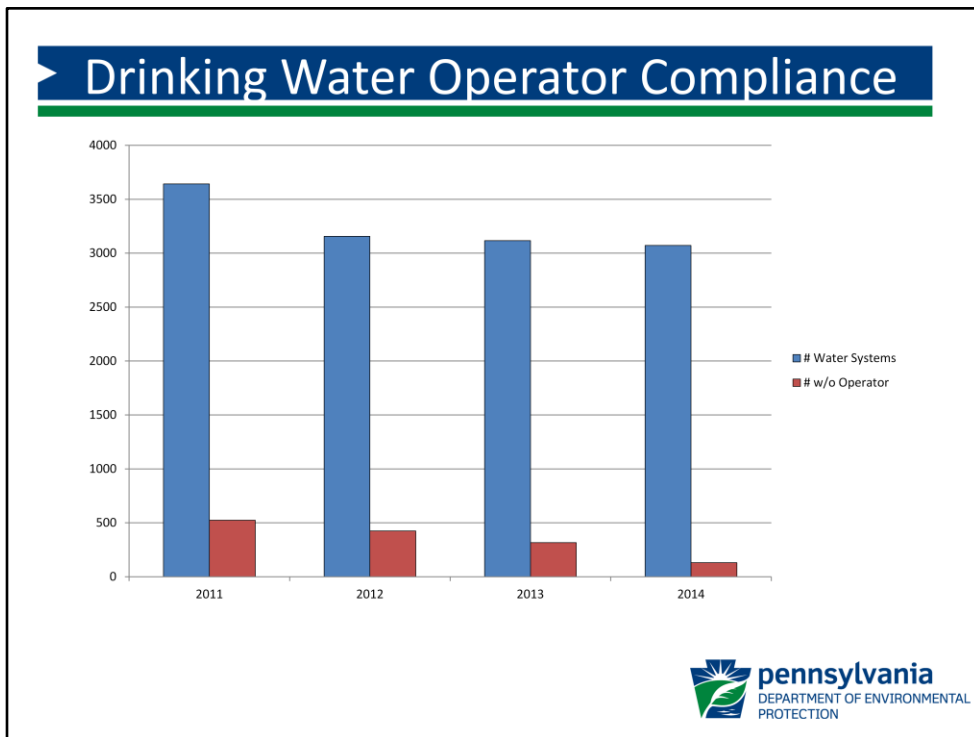
Environmental Facility Application Compliance Tracking System (eFACTS) is the database for the Operator Certification Program that provides:

- List of each system's operators
- System operator certification type – required class and subclass(es)
- Circuit rider information
- Links the operators to systems
- History of each operator's certification



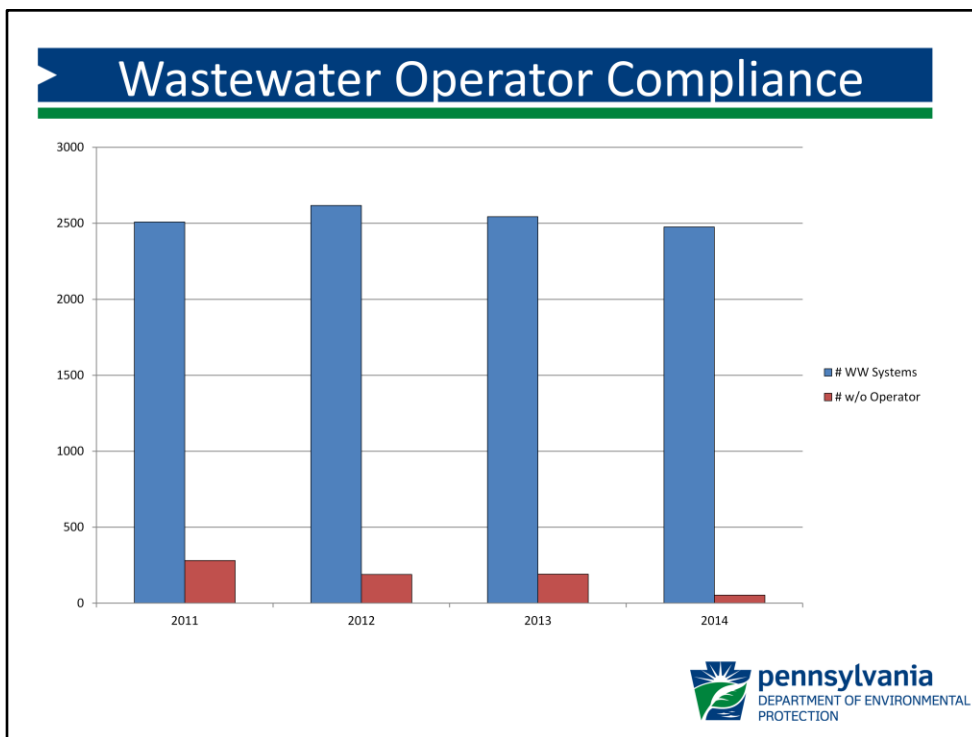
For drinking water systems, PADWIS provides the treatment process details that eFACTS uses to determine the system operator class and subclass(es).

For wastewater facilities, the treatment process details that eFACTS uses to determine the system operator class and subclass(es) are manually entered.



For public drinking water systems:

- 2011: 3,642 Public Water Systems (PWS); 524 without an operator (14.4%)
- 2012: 3,156 PWSs; 424 without an operator (13.4%)
- 2013: 3,116 PWSs; 316 without an operator (10.1%)
- 2014: 3,072 PWSs; 130 without an operator (4.2%)



The compliance rate for wastewater facilities follows a similar trend:

- 2011: 2,509 facilities; 281 without an operator (11.2%)
- 2012: 2,617 facilities; 189 without an operator (7.2%)
- 2013: 2,544 facilities; 191 without an operator (7.5%)
- 2014: 2,476 facilities; 53 without an operator (2.1%)

Op Cert Program Enforcement

- Field staff evaluate compliance during inspections
- Central Office tracks fee payments and Available Operator Report compliance
- Potential enforcement actions:
 - Notice of Violation or Summary Citation
 - Field Order/COA/Administrative Order
 - Penalties (if in violation of an Order)
 - Suspension or revocation of certificate



Operator Certification Program compliance and enforcement is managed by both Central Office and Regional (field) staff.

Program violations and subsequent enforcement actions are often linked to the specific drinking water or wastewater regulations (chapters 109 and 92a) and facility permits.

As with other violations, the type of enforcement action taken is based on the severity and duration of the violation(s).

Op Cert Program Enforcement

- Draft compliance and enforcement technical guidance document – publish in June 2015 for violations of Chapter 302 regulations
- Severity of a violation under Chapter 302 often depends on subsequent violation of water or wastewater program regulations



Operator Certification Program staff are developing the compliance and enforcement technical guidance.

A pre-draft version of this document will be presented to CPAC at their fall meeting for review and recommendations before being posted as a draft document for public comment.



Questions?

Lisa D. Daniels, Director
Bureau of Safe Drinking Water

Phil J. Consonery, Chief
Division of Training, Technical & Financial Services

Cheri L. Sansoni, Supervisor
Certification Section

Dawn Hissner, Supervisor
Operations Section