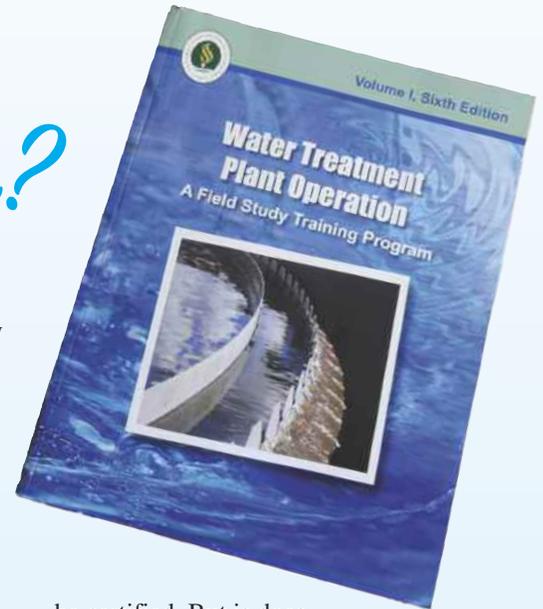


Are You Eligible and Ready to Take a KDHE Certification Exam?



I continue to be surprised by the significant number of new operators here in Kansas in the water and wastewater fields. When KRWA conducts workshops, we often ask by show of hands, how many operators have been employed by a water or wastewater system less than one year? Less than six months? And it is amazing how many hands go up. Obviously, baby-boomers are retiring and younger employees are being hired by systems across the state. Consequently, I thought it might be timely to write an article about operator certification as KRWA receives many questions about the subject. Typical questions are: How do I become eligible to take a certification exam? What level of certification do I need? How do I prepare to take a certification exam? Once certified, how do I keep my certification updated? How many hours do I need to ensure it is updated? This article will try to answer those questions and many others that KRWA staff receives daily regarding operator certification.

KDHE administers the water and wastewater operator certification program in Kansas. It was started in 1975 as a result of laws passed by the Kansas Legislature. The regulations that resulted because of the laws passed by the legislature are Kansas Administrative Regulations (K.A.R.) 28-16-30 to 28-16-36. The laws are mandatory and require all water and wastewater systems to be under the

supervision of an operator certified by KDHE. The purpose is to ensure staff operating water and wastewater systems are properly trained and have sufficient experience to protect public health and the environment. KDHE has five different certification levels for water operators and five for wastewater operators. The levels are based on the complexity of the system and the population served.

Who is an "Individual in Responsible Charge?"

According to K.A.R. 28-16-33, each water or wastewater system must have "an individual in responsible charge" at the system or available at all times. This K.A.R. defines "individual or individuals in responsible charge" as the person or persons designated by the owner of the facility to be the certified operator or operators who make decisions regarding the daily operational activities of a water supply system or wastewater treatment facility that will directly impact the quality or quantity of drinking water for human consumption or the quality of wastewater effluent. It further states, "each individual in responsible charge of a system shall be a certified operator for that class or a higher class of system." So what does this mean exactly? It basically means that it is the responsibility of the owner (city, rural water district, sewer district, private utility, etc.) to hire certified operators. It does not directly require operators to

be certified. But it does require owners to hire certified operators, thereby indirectly making operators become certified. If a system is operating without a certified operator, that is considered an unlawful act by KDHE, but the problem lies with the owner, not the uncertified operator. To ensure they are meeting KDHE's operator certification regulations, many system owners make certification a condition of employment.

What is an "Operator-In-Training (OIT)?"

Frequently water or wastewater systems advertise for employment and state that the applicant must be certified. In many cases this is not possible and not everyone can be certified when starting employment with a utility.

Many small water and wastewater systems are one-man operations. So what does a city, RWD, etc. do if they want to hire an individual who they deem qualified, but is not certified? How can they operate a water or wastewater system, but not have a

certified operator in responsible charge? K.A.R. 28-16-33 (f) allows systems (Small System, Class I or II only) to hire an individual with an Operator-In-Training (OIT) certificate who is not certified, but may be the “individual in responsible charge.”

However, an OIT certificate comes with several conditions such as:

- ✓ The owner must submit a written request to KDHE verifying that the system is unable to employ a certified operator. KDHE must then determine whether the OIT has the basic knowledge necessary to properly operate the system.
- ✓ Within 6 months after completing one full year of operation as an OIT, the individual designated as the OIT must take the appropriate certification examination.
- ✓ If the OIT fails the examination, he/she must prepare for and take the examination again the next time it is offered by KDHE.
- ✓ An OIT certificate is only valid for one year from the date when originally issued. However, it can be renewed for up to one additional year providing the operator demonstrates to KDHE he/she is attending training sessions, studying correspondence courses or otherwise preparing to take and pass the exam.

Of course another option available to small water and wastewater systems is to contract with a certified operator from a nearby system. This can be either a temporary situation until the individual becomes certified or a long-term solution. One situation that KDHE no longer allows is where a system requests designating different OITs year after year because of high turnover in the position. The result is a certified operator never operates the system. If the system has already had an OIT previously and hires another uncertified individual, a second OIT will not be issued. Instead, the water or wastewater system must either contract with a nearby certified operator or hire a certified operator in the first place.

Becoming eligible to take the operator certification exam

K.A.R. 28-16-30 and 31 outline how an individual becomes eligible to take a certification exam. The following is required:

1. Must either own or be currently employed or under contract with a water or wastewater system. The individual must be engaged in the daily operation and/or maintenance of the system or facility
2. Must have a high school diploma or general development diploma (GED)
3. Must have acquired the minimum number of years of experience required for the class of examination desired (see Table 1)

4. Must have acquired the minimum number of points required for the class of examination desired (see Table 1). This usually is not an issue if taking a Small System or Class I exam that requires 12.5 or 13.0 points, respectively. Exam candidates receive 12.0 points for their high school diploma or GED. They also receive a 0.5-point for a half-year of work or 1.0 point for a full year of work. Adding both together usually provides the minimum number of points needed.

- ◆ Points can also be acquired for attending approved training, college education, completing correspondence courses, etc. See KDHE’s website for information on points given for these activities.

Table 1. Minimum Number of Points and Years of Experience Required for Each Class of Exam:

Exam Class	Points*	Years of Experience
Small System	12.5	6 months
Class I	13	1 year
Class II	14	1 year
Class III	16	2 years
Class IV	18	2 years

5. Must submit a completed and approved exam application (water or wastewater) and \$25 exam fee to KDHE. Applications can be found on the KDHE website. KDHE no longer accepts applications by fax or email. The application must be received by KDHE at least two weeks before the test date. Late applications will not be accepted. KDHE often has as many as 200 individuals testing at various sites. The minimum two weeks gives KDHE staff time to screen all applications to ensure applicants meet minimum qualifications for the desired exam.

Levels of certification based on system size and treatment type

K.A.R. 28-16-36 classifies different type water and wastewater systems in Kansas and designates what level of certification is required for each. See Table 2 for water systems and Table 3 for wastewater systems. Classification is based on the type treatment system and the population served.

Table 2: Classification of Water Supply Systems in Kansas

Class	Description	Population Served
Small System	1. Distribution System only 2. Chlorination of Groundwater only	All < 501
Class I	1. Chlorination of Groundwater Only 2. Treatment of Groundwater*	501-1,500 < 501
Class II	1. Chlorination of Groundwater only 2. Treatment of Groundwater* 3. Treatment of Surface Water	1,501-5,000 501-2,500 < 2,501
Class III	1. Chlorination of Groundwater only 2. Treatment of Groundwater or Surface Water	5,001-20,000 2,501-10,000
Class IV	1. Chlorination of Groundwater only 2. Treatment of Groundwater or Surface Water	>20,000 > 10,000

* Includes iron and manganese removal; softening; membrane filtration; coagulation, sedimentation and filtration; recarbonation; and chemical addition (other than chlorine)

If you are a purchase supply and buy all water from another system, the system must have an operator with a minimum Small System certification, regardless of population served. All surface water systems must have an operator with a minimum Class II certification or higher, depending on population served.

If your system has a non-overflowing (non-discharging) lagoon, the system must have an operator with a minimum Small System certification,

regardless of population served. If your system has a discharging lagoon, then the system must have an operator with a minimum Class I certification, regardless of population served.

I think the classification system KDHE uses is some of the reason exam passing rates are not higher. For example, if you are an operator whose water system only chlorinates groundwater and you need a Class II certification, the exam will also have questions on treatment of groundwater

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(beyond chlorination) and even treatment of surface water. I often hear comments from operators after taking exams that there were questions that do not even apply to their water system. And that is why. I would submit that classifications should be based on the specific type system the operator operates (purchase, groundwater or surface water) and not a system with which he has no familiarity.

The same scenario also exists with KDHE's wastewater classifications. For example, if you operate a discharging lagoon and are required to have a Class I certification, the exam will likely also have questions about secondary treatment such as trickling filters, activated sludge, etc. These are systems with which most lagoon operators have little familiarity or need to understand to adequately operate their lagoon system. Again, the classifications need to better reflect what the operator is responsible for operating (lagoons vs. secondary treatment vs. advanced treatment). Should operators be hired in the future to operate a more complex water or wastewater system, then they would be required to test and attain a different level of certification.

**How to study for the exam?
What resources are available?**

This is probably the most common question I hear from operators getting ready to take exams. There are basically three venues that can provide the training and study needed to pass exams. They include:

- A. On-the-job experience
- B. Formal training or workshops
- C. Correspondence courses and/or self-study

Attending workshops is very helpful in obtaining knowledge needed to pass certification exams and mandatory for renewal in the future. Fortunately in Kansas, there are a number of organizations that provide excellent training in the water and wastewater fields. And the Kansas Rural Water

Table 3: Classification of Wastewater Treatment Facilities in Kansas

Class	Description	Population Served
Small System	Non-overflowing Wastewater Ponds	All
Class I	1. Any Secondary Facility 2. Overflowing Wastewater Ponds	< 1,001 All
Class II	Any Secondary Facility**	1,001-5,000
Class III	1. Any Secondary Facility** 2. Advanced or Specialized Facility***	5,001-25,000 ≤ 5,000
Class IV	1. Any Secondary Facility** 2. Advanced or Specialized Facility***	>25,000 > 5,000

** Biological treatment including trickling filters, rotating biological contactors and activated sludge

*** Includes chemical, biological or physical treatment to provide nutrient removal beyond secondary treatment; or effluent clarification

Association is one of those qualified training organizations. I encourage operators to check the KRWA website frequently for the schedule of our upcoming workshops as we frequently add new workshops. The KRWA Annual Conference and Exhibition held in Wichita each March is another excellent opportunity to help prepare for taking a certification exam. Operators also need to plan ahead to ensure they attend training that is not

only close to home, but applicable to the class exam they are planning to take. I know occasionally at KRWA sessions, there are operators who have driven two to three hours and are attending a session that doesn't really apply to their situation. When compared to 25 years ago, there are many more workshops offered today on a wider variety of topics/issues. Planning ahead should help operators avoid such a situation. Again, I



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Examples of operator certification concerns . . .

I have spoken to several operators recently who expressed concerns that it appears KDHE has become more aggressive in requiring systems to have operators at the required grade. Although required by regulation, two examples concern me greatly. The first example concerns an operator who operated a complex softening water treatment plant for several years, but then took a new job operating a well water system. The original position required him to have a Class II certification. Unfortunately, KDHE said his new position would require him to have a Class III certification. While the population served plays into this also, the disturbing issue is that KDHE is requiring a higher level of certification to operate a far less complex water system. Granted the new position requires the person to operate a well water system which provides "treatment of groundwater" as they add fluoride. But calculating speed rates and calibrating and maintaining a feed pump to simply add fluoride is far less complicated than operating a softening water plant. Frankly, requiring a Class III certification in the latter situation doesn't make much sense even though "the letter of the law" might require such.

The second example involves a veteran superintendent of utilities who has had a Class I wastewater certification for many years. Based on population served and the fact the system has secondary treatment, a Class II certification is required. That makes sense. And the system had a

Class II operator up until recently when that individual retired, leaving the system without a Class II operator. Here is where it gets interesting: within 12 to 18 months (or less) the system's obsolete secondary treatment plant will be replaced by a new non-overflowing lagoon which will only require the system to have an operator with a Small System certification. Unfortunately, KDHE is requiring the superintendent with the Class I certificate, to test and obtain a Class II certificate to operate their existing plant, which will be replaced very, very soon. And in the near future, the system will only need a Small System wastewater certification. The superintendent also asked KDHE if the system could contract with a neighboring Class II operator during the interim until the new lagoon is in service. They supposedly were told that using a contract operator would not be allowed. Again, the regulations might require such an upgrade in level of certification, but I would hope KDHE staff has some

discretion in how these regulations are implemented. This superintendent loves his job and is very knowledgeable. He is a great asset to his community and has been for many years. But as he told me, rigid implementation of regulations by KDHE is what will make him decide to retire soon. Otherwise, he would continue to work for several more years.

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encourage all operators to check our website frequently. KDHE also maintains their Water/Wastewater Operator Training Calendar which can be found on their website. And as an added bonus, if a water or wastewater system asks for onsite training, KRWA will try to provide that and invite neighboring systems as well.

With regard to correspondence courses or self-study, KDHE recommends using the California State University at Sacramento field study training program. Their water and wastewater manuals are very comprehensive, written by knowledgeable authors. It's also apparent to me, that their manuals include not only information taken from engineers and regulators, but also operators who can add comments not always available from others. Their manuals are a bit pricey, but they can also be used in the future as a reference source should you need to research a specific problem or issue. If interested in ordering their manuals or participating in one of their correspondence courses, make sure what you order is at the level you need to pass your exam. They have both basic and advanced manuals and courses. They also usually divide manuals and courses between treatment and distribution system (water) or collection system (wastewater). If interested, the website for California State University at Sacramento is www.owp.csus.edu.

Once certified, how to maintain certification?

Once certified, water and wastewater operators must renew their certificates every two years. I encourage operators to check the KDHE Certified Operator Database to find their renewal date (the date by which operators must have the required hours of training) and to confirm that the list of workshops attended in the past is accurate. The database link is: <http://www.kdheks.gov/water/www.html>. KDHE considers it the responsibility of each certified operator to make sure

he/she has the hours needed to renew the certificate by the expiration date. If a certificate is not renewed by the expiration date, the operator is no longer considered certified by KDHE. This could place the employer system in jeopardy. Operators should be sure to attend the necessary training to obtain the necessary hours and submit paperwork and \$20 renewal fee in a timely manner. An expired certificate can be reinstated up to two years from the expiration date with certain conditions. Minimum training requirements to renew are:

- ◆ Small System operators must acquire a minimum five (5) hours of approved training every two years;
- ◆ Class I, II, III and IV operators must acquire a minimum ten (10) hours of approved training every two years.

I hope this answers many of the questions received by KRWA staff regarding operator certification. If anyone has additional comments or questions, please feel free to contact me at 913-850-8822 or jeff@krwa.net. Attending training and getting certified

are an important and critical part of being a good water or wastewater operator.

I also encourage operators, as well as governing body members, to attend the upcoming KRWA Annual Conference and Exhibition in Wichita on March 26-28, 2019. The conference is a great resource for learning, keeping updated on innovations in the water and wastewater fields and acquiring hours needed to renew certifications. And for those of you needing to test, certification exams will be offered at 1:30 pm on Thursday, March 28 in Hyatt Ballroom E. Check the program in this issue or on KRWA's website to see the link to obtain an application to take the exam.

Jeff Lamfers began work for KRWA in November 2008. Jeff has more than thirty years of regulatory experience in the oversight and operation of water and wastewater systems with the Kansas Department of Health and Environment.

He is a graduate of the University of Kansas with a degree in Environmental Studies with an emphasis in aquatic biology.





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