

## **Section 7 – Operator Training**

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## 7. Operator Training

If a water distribution, wastewater collection, water treatment or wastewater treatment system is to operate efficiently and properly, continuous and skilled attention is the most important component. Without proper attention, mechanical devices will fail and systems will cease to produce the desired results. Although modern mechanical devices have greatly reduced the amount of labour required and to a large extent have eliminated the more disagreeable operational tasks, there is no completely self-operating system.

The DOEC is responsible for ensuring that water works and sewerage works are maintained and operated in a manner that provides safe, clean drinking water for the present and future generations of Newfoundland and Labrador, as well as, providing for the protection of the natural environment.

The availability of trained and qualified operators is vitally important to the safe and sustainable operation of municipal water and wastewater systems. Operator education and training are as essential to the successful operation of these systems as are improved technologies, regulatory inspection, and monitoring. Without adequately trained personnel, the most advanced technology and regulatory compliance cannot reliably deliver safe drinking water, or provide acceptable levels of wastewater treatment. These systems will not retain their economic viability without regular maintenance by adequately trained operators.

In 2002, the DOEC made changes to the permitting process for water and sewerage systems. For new construction, modifications, or extensions to systems, proponents are required to obtain a **Permit to Construct** to address design and construction issues. The Permit to Construct replaces the previously issued Certificate of Approval. In addition to the Permit to Construct, the owners of all municipal water distribution, water treatment, sewerage collection, and sewerage treatment systems will be issued a **Permit to Operate**. The Permit to Operate will be based on the system's classification, and will stipulate general operating and system maintenance requirements for each system, as well as noting system-specific conditions where appropriate. All systems will be required to have trained operators (with operator certification strongly recommended); to keep maintenance and operational logs; and to submit annual Operation and Maintenance Reports to the DOEC. Municipalities will be required to submit the names of their system operators, and a database will be maintained regarding the education and training of individual operators. The Permit to Operate will recommend continuing education for all operators.

## 7.1. Training Programs and Operator Qualification

Although the certification of water and wastewater systems operators is not yet mandatory within the Province, the DOEC does make training programs available on various aspects of maintenance and operation.

The authorities responsible for plant operations should encourage operator attendance at these training programs, as well as at others that may become available. The highlights of various training and certification programs offered by the province are as follows:

1. **Educational Seminars** - Educational seminars consist of classroom training such as seminars, workshops, and certification-specific curriculum, which are presented on a regular basis. These seminars are offered at over 20 strategically located towns throughout the province, and generally do not require operators and municipal staff to travel more than 50 km. The training curriculum is based on established training manuals, which will provide operators with the knowledge to properly operate and maintain their systems, as well as to be able to write certification exams.

This component of the program will also provide opportunities to meet the continuing education requirements for operators. The DOEC recommends a 24 hour annual continuing education training for all operators. Changing technology, regulatory requirements, and a general need for personnel in the water works industry to remain current, requires continuing education.

2. **On-Site Training** - This component of the training program is designed to raise the competency level of operators to an acceptable standard. It is site based, one-on-one, hands on, and tailored to the needs and aptitude of the operator. The training deals with proper operation/maintenance of the water supply system. The on-site training program utilizes 3 Mobile Training Units based out of St. John's, Grand Falls-Windsor, and Corner Brook, and are manned by the Operator Trainers. These vehicles are equipped with tools, demonstration equipment, and a work area so the operators can benefit from hands-on training specific to their own system components. In addition to providing operation and maintenance training, this program augments the classroom training provided by the Operator Education component.

On-site training is seen as a very important component of the overall training program. It is expected that the operators will respond positively to hands on training especially in the familiar surroundings of their own facility.

3. **Certification Examinations** - The DOEC will coordinate special courses for certification, administer certification exams, and maintain databases on operator training and certification. Those operators who meet the basic educational and experiential qualifications established by the *ACWWVCB*, may write the appropriate level of certification exam and become certified if they pass the *ABC* exams with a mark of 70% or greater. Those operators who attend all of the educational seminars in their area but do not wish to write the certification exam, or those who do not pass the exam, will be issued a *Certificate of Participation* by the DOEC, in recognition of their efforts.

## 7.2. Operating Manual

The purpose of an Operating Manual is to provide an understanding of the processes and general operation of water and sewerage systems. This type of manual is not intended to indicate every single step in the operating procedure or to attempt to replace the Suppliers' Equipment Manuals.

An Operating Manual should provide a basic understanding of what the system is supposed to accomplish; the philosophy of the design; specific criteria for satisfactory operation and the identification of potential operational problems.

The Operating Manual should contain, where pertinent, at least the following items in sufficient detail:

1. Purpose of manual;
2. Terminology and definitions;
3. General description of water and sewerage systems;
4. Description of key components and their operation;
5. Operational duties (general);
6. Initial start-up procedures;
7. Normal start-up procedures;
8. Operational procedures as follows:
  - a) Plant running normally;
  - b) Emergency (including power failure);
  - c) Maintenance; and
  - d) Keeping operating records;
9. Shutdown procedures;
10. Operation safety;
11. Housekeeping;
12. Test procedures and standards;
13. List of major equipment;
14. List of interlocked equipment;
15. List of pumps;
16. List of motors;
17. List of gates and valves for the process;
18. List of construction drawings;
19. References; and
20. Miscellaneous functional drawings.