New Mexico

Water Systems Operator

Certification Study Manual

Version IV, January 2011

New Mexico Environment Department
Utility Operator Certification Program
NMED Surface Water Quality Bureau
PO Box 5469
Santa Fe, NM 87502

On the cover: Albuquerque Bernalillo County Water Utility Authority San Juan-Chama Drinking Water Project

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INTRODUCTION

The **"NEW MEXCIO WATER SYSTEMS OPERATOR CERTIFICATION STUDY GUIDE"** was developed by Fred Ragsdale of Ragsdale and Associates under contract with NMED Surface Water Quality Bureau. With this edition the title has changed to The **"NEW MEXCIO WATER SYSTEMS OPERATOR CERTIFICATION STUDY MANUAL"** to reflect the addition of further study material. It should be used as a tool to assist Water Systems operators in New Mexico in preparation for taking the New Mexico Distribution Systems Operator, Small Water Systems Operator, and Water Systems Operator certification exams. In New Mexico Water Certification is divided into the following areas:

- § Four classes of Water System Operator certification
- § Three classes of Distribution Systems Operator certification
- § Two classes of Small Water Systems Operator certification

This manual is not intended to be a complete reference manual for technical information. Its purpose is to guide the reader to study material for each of the major subject areas for each of the classes. There is no implied claim that this study guide covers every possible point on which an operator may be tested. However, it is intended to be comprehensive in its coverage of the essential information for each exam. As new technologies are developed and become available in the State of New Mexico further additions will be made to the Study Manual to assist operators in understanding those advanced water treatment technologies.

The manual is divided into fourteen basic chapters. In the future a chapter fifteen will be added containing information on emerging advanced water treatment technologies. The manaul also contains a useful Appendix: EPA manual "Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents". Each chapter in the study manual has basic and advanced study questions and sample test questions that are intended help the individual determine the type of information that is covered in an exam. Basic questions will generally cover information in the Small Water Systems exams and the Class 1 and 2 for Water Systems and Distribution Systems exams. Advanced questions will cover information in the Water Systems Class 3 and 4 and Distribution Systems Class 3 exams. The study questions and sample test questions are designed to direct the reader to exam information that is related to the chapter topics. There is only one correct answer for the Sample Test Questions. No answer sheet is provided. You will have to look them up.

- ❖ Distribution Systems exams will include information from Chapters 1-5, 7-10, and 13-14.
- ❖ Small Water Systems exam will include information from Chapters 1-5, 7-11, and 13.
- ❖ Advanced Small Water Systems exam **will <u>also</u>** include information from Chapters 6 and 12.
- ❖ Water Systems Class 1 exam will include information from Chapters 1-4, 7-11, and 13-14.
- ❖ Water System Class 2 exam will include information from Chapters 1-11 and 13-14.
- ❖ Water Systems Class 3 and 4 exams will include information from chapters one through fourteen.

The certification exams use several texts as reference manuals for exam topics. Each chapter of the study manual contains references to specific chapters of these manuals for those who wish to access more information on the topics covered in that particular section.

- ➢ Office of Water Programs, California State University, Sacramento, *Water Treatment Plant Operation*. 4th ed., 1999, Volumes 1 & 2.
- ➢ Office of Water Programs, California State University, Sacramento, *Small Water Systems O&M*. 4th ed., 2001.
- ➢ Office of Water Programs, California State University, Sacramento, *Water Distribution System O&M*. 4th ed., 2000.
- ➢ ACR Publications, Inc., Skeet Arasmith, *Introduction to Small Water Systems*, 1993.
- ➢ Fletcher Driscoll/US Filter, *Groundwater and Wells*, 2nd Edition, 1986.

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NMED SWQB Utility Operator Certification Program for funding; Bob Padilla for his graphics; the New Mexico Utility Operator Certification Advisory Board for chapter reviews; everyone who helped to proof read the first draft for typos; Bill Peifer for help formatting the original text; Marilyn Still for further typo revisions; and Robert & Nancy Gott of Gott Consulting Services for structuring supplemental text and reformatting the study guide.

New Mexico Environment Department
Surface Water Quality Bureau
Utility Operator Certification Program

The New Mexico Water Quality Control Commission, through the New Mexico Environment Department (NMED), grants certification for competency to the operators of water and wastewater systems. The Utility Operator Certification Program (UOCP) conducts the testing for certification. Certain requirements must be met before an operator is eligible to take a certification examination.

An operator begins the process by completing a test application from the Utility Operator Certification Program. Applications will only be accepted if they are submitted at least 30 days prior to the exam date. A certification officer will review each application to determine if the operator is eligible to take the requested examination. An application must be submitted every time a test is taken. Examinations are given several times a year at various locations around the state. **Fees** range from **$25.00 - $30.00** depending on the examination. A check or money order for the proper amount **must** accompany each exam application and paid to **Utility Operator Certification Program**.

Certificates must be renewed every three years. The renewal date will be the last day of the certificate holder's birthmonth following the third anniversary of the certificate. The UOCP also handles renewal of certificates. Renewal **fees** ranges from **$20.00 - $30.00** depending on the level of certification to be renewed per certificate.

The Utility Operator Certification Program maintains training credits for certified operators only. Each operator must keep a record of all training credits earned. Anyone who intends to apply for NM certification must include documentation of training credits when the application is submitted. Certified operators that are taking higher level exams may also have to submit training credit documentation to update training record files at the Utility Operator Certification Program.

All correspondence, including applications, should be mailed to:

NMED Surface Water Quality Bureau
Utility Operator Certification Program
PO Box 5469
Santa Fe, NM 87502

Please feel free to call the Utility Operator Certification Program to request information on exam application forms, exam dates and locations, or certification and renewal. The telephone number for the office is **505-827-2804**.

Important Facts About Operator Certification

An operator, as defined by NM Water Quality Control Commission Regulations, is "any person employed by the owner as the person responsible for the operation of all or any portion of a water supply system or wastewater facility. Not included in this definition are such persons as directors of public works, city engineers, city managers, or other officials or persons whose duties do not include actual operation or direct supervision of water supply systems or wastewater facilities."

Under the Utility Operator Certification Act, "a certified operator is a person who is certified by the commission as being qualified to supervise or operate one of the classifications of water supply systems or wastewater facilities". Experience is "actual work experience, full or part-time, in the fields of public water supply or public wastewater treatment. Work experience in a related field may be accepted at the discretion of the commission". Any claim of related experience will be reviewed by the Water Quality control Commission (WQCC) or its advisory body, the Utility Operators Certification Advisory Board.

The Utility Operator Certification Advisory Board (UOCAB) is a seven-member board appointed to function with the WQCC to establish qualifications of operators, classify systems, adopt regulations, and advise the administration of the Utility Operators Certification Act. Its members are drawn from certified water systems operators and wastewater facility operators in the throughout the State of New Mexico.

Experience that includes operation, maintenance, or repair of water treatment and water distribution systems is accepted based on whether it is full or part-time. The NM Utility Operator Certification Advisory Board will review and approve experience in other related fields, such as commercial plumbing or utility construction. Credit for part-time experience will be based on the percentage of time devoted to actual operation or maintenance. Full time water or wastewater laboratory experience may be counted as operator experience at a rate of 25% of actual experience. The credit for this experience will be determined by review of the UOCAB.

Basic Certification Requirements

There are three basic requirements an operator must meet to qualify for New Mexico certification. All certified operators must have at least **one year** of actual experience in operation or maintenance of a public water system. All levels of certification require **high school graduation or GED** (see substitutions). All levels of certification require a certain number of **training credits** in water systems O&M or related fields.

	Experience	Training Credits	Education
Class 1	1 year*	10	HS Grad or GED*
Small Systems	1 year*	10	HS Grad or GED*
Class 2	2 years*	30	HS Grad or GED*
Class 3	4 years*	50	HS Grad or GED*
Class 4	1 year as Class 3	80	HS Grad or GED

*See Subsitutions

Substitutions

One year of additional experience may be substituted for the high school graduation or GED requirement for all classes **except** Class 4. Education may be substituted for experience or training credits in some cases. The education must be in a water or wastewater related field. One year of vocational education can be substituted for up to one year of experience. Associate and Bachelor degrees in a related field may be substituted for up to three years of experience and 50 training credit hours, depending on the amount of actual experience. The criteria for substitution of education for experience are as follows:

- ❖No more than one year (30 semester hours) of successfully completed college education in a **non-related field** may be substituted for an additional **six months** of the required experience.
- ❖**One year** of approved vocational school in the water and/or wastewater field may be substituted for only **one additional year** of the required experience.
- ❖An **Associate degree** in a two-year program at an approved school in the water and/or wastewater field, and **six months** of actual experience in that field (which may be accrued before, during, or after the school program) may be substituted for the requirements of any level up to and including **Class 2**.
- ❖An **Associate degree** in a two-year program at an approved school in the water and/or wastewater field and **twelve months** of actual experience in that field (which may be accrued before, during, or after the school program) may be substituted for the requirements of any level up to and including **Class 3**.
- ❖Completion of at least **three year**s of actual experience in the water and/or wastewater field, plus **high school graduation** or equivalent, plus **15 semester hours** of successfully completed college education directly related to the water or wastewater field may be substituted for any level up to and including **Class 3**.
- ❖A **Bachelor Degree** in a major directly related to the water or wastewater field, plus **two years** of actual experience in that field may be substituted for any level up to and including **Class 3**.

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